Student Success Toolbox Project

Phase Two Report

Literature Analysis
&
Digital Tools Database

James Brunton, Mark Brown, Eamon Costello, Lorraine Delaney, Seamus Fox & Ciara Galvin

National Institute for Digital Learning, Dublin City University

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Authors can be contacted at:

T: +353 1 700 5329

Email: james.brunton@dcu.ie

Web: www.studentsuccess.ie

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Introduction

Phase Two of the Student Success Toolbox project involves an analysis of relevant literature and existing digital tools that are in use internationally to support successful flexible learner transitions into higher education. The project situates itself in a gap in the literature, and seeks to address that gap by offering an initial scoping out of the connection between literature has been published in this area, and what is in practical use in leading flexible learning institutions around the world at the present time.

The Phase Two report

This Phase Two report is presented in four sections. The first section presents the analysis of existing literature and foregrounds the key trends that emerged from that analysis. Initially outlining the questions and methodology used to frame the literature analysis, this section of the report then presents the literature relating to: flexible learning; the importance of student success in the first year; and transitions into higher education. Consideration is given to what tools the literature indicates are useful in supporting such transitions. The second section of the report begins by setting out the methodology used to create the database of existing digital tools available internationally to support successful transitions during initial stages of the study lifecycle for flexible learners, before presenting an analysis of the tools that were located. The third section of the report explores the connection between the literature, specifically the tools that are. This section also presents a number of potential areas for tool development in Phase three the Student Success Toolbox project. Section four presents the conclusion to the report.

Literature analysis

This section will first present the methodology used to conduct the analysis of the literature before going on to present the results of that analysis.

Methodology

This subsection provides an overview of the methodology used to undertake an analysis of the literature relevant to the project. The broad approach taken is that of a 'systematic review' and draws from a number of texts. Torraco (2005) and Boote and Beile (2005) were consulted on writing integrative and substantive literature reviews, and it was the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre's (2010) 'Methods for Conducting Systematic Reviews' that provided the specific structure adopted for this literature analysis. The EPPI-Centre's approach provided a clear and structured frame for conducting a review of a large body of literature.

Guiding questions

Systematic reviews, as outlined by the EPPI-centre (2010), are built around the framework of answering key questions, or a number of smaller sub-questions which address a broader key question. A good guiding question should help "clearly demarcate what is and what is not within

the scope of the investigation" (Boote and Baile, 2005, p.4) and help define the criteria for the inclusion or exclusion of studies in the review. This review sought to address the overall question "what tools work?" in relation to supporting flexible learner success during the transition to higher education, by considering the following sub-questions:

1. Who are flexible learners?
2. What do we know about learner success?
3. How does what we know about supporting transitions relate to the above?

The review will then consider, in conjunction with the analysis of existing digital tools:

4. What connection exists between the literature and what institutions are providing to flexible learners?
5. What tools could usefully be developed in this project?

Scope of the literature analysis

It is important to note that the literature analysis is not intended to provide a comprehensive historical account of the development and/or use of digital tools for supporting learners through periods of transition, and so there are a number of notable exclusions from its breadth. The analysis does not explore the development of Open Educational Resources (OERs) or course design, for instance, which have been written about extensively elsewhere (cf. Conole and Weller, 2008). There are also three notable boundaries on the depth of the analysis: there is a deliberate focus on literature published since 2005; a focus on literature published in English; and a limitation of the texts to be considered to those available in full-text, primarily through two databases (Education Research Complete and Web of Science), readily available online, or located through other particular search techniques (discussed below). Limiting the literature to full-text results, in the English language, arose out of necessity as the project progressed, to make the analysis feasible within the timeframe of Phase Two. Focussing primarily on the literature since 2005 served a similar purpose, but also had the benefit of ensuring that the information covered in the analysis was up to date, which is important in light of rapid innovation in this field. The strengths of the analysis in light of the above are its sharp focus on the main areas of project interest, and emphasis on recent developments in the field.

Search terms

The second stage of a systematic literature review is to identify search terms which will strike a balance between *sensitivity*, finding all useful studies in an area of interest, and *specificity*, making sure the search results are relevant to the guiding questions (See table 1 for a sample of the search terms

Specific tools
readiness assessment AND online
readiness assessment AND online OR eLearning
readiness assessment
workload calculator
time management AND adult learner
time management AND student
entry shock
entry shock AND lifelong learner
socialisation AND lifelong learner
time management OR lifelong learner
time management AND lifelong learner

General educational tech
(teaching and learning) AND educational technology
flexible learn* AND educational technology
flexible learn* AND technology
flexible learning AND technology
lifelong learning AND technology
distance learning AND technology
distance learning AND technology
learning AND technology
learning AND technology
education AND technology

General flexible learning
flexible learn*
flexible learn* AND adult
flexible learner* AND adult
flexible learner*
flexible learner* NOT language NOT children
Flexible learner*)
Flexible learner* and lifelong learn*
Lifelong learn*
Lifelong learner*

More tools
retention AND lifelong learn* AND resource*
social media AND education
facebook AND education
facebook AND lifelong learning
twitter AND lifelong learning
social media AND lifelong learning

Table 1. A sample of the search terms utilised in the literature analysis

utilised). We are grateful to, and would like to acknowledge, the DCU library services and in particular the Educational Librarian, Ms. Aisling McDermott for her invaluable input on search strategies and relevant literature databases and collections. Education Research Complete was identified as being an effective tool for the literature search, as it contains 750 education journals. Web of Science was also utilised, especially for tracking citations. The Librarian for Education was also aided in determining the type of free text, or 'keyword', and thesaurus

search terms to use, in order to produce as comprehensive a sample of the literature as possible within the parameters of the analysis, and in the timeframe available. The consultation of library services obtained at an early stage of the research ensured that subsequent stages of the analysis progressed smoothly.

Compiling the database of literature for analysis

The third stage of conducting the systematic review was locating the literature and compiling a database of relevant results. Literature found via the selected databases was exported directly to the reference management software RefWorks. As not all relevant results were necessarily picked up by electronic databases the following avenues were also explored, and additional results added to the database, in line with EPPI-Centre (2010) recommendations: drawing on personal contacts, authors, and experts in the field; utilisation of general search engines such as Google Scholar; use of citation tracking ('pearl growing'); and manual searching of key journals.

Challenges

One of the main challenges of the systematic review approach was locating the most relevant studies amongst the volume of other literature with some but not central relevance to the guiding questions. The analysis sought specifically to locate published evaluations of tools used with flexible learners during transitions into higher education and in the early stages of study. Initial searches of the recommended databases for journal articles with keywords such as "flexible learn*", "lifelong learn*", "distance learn*", "educational technology" and various combinations of these and others (see Table 1 above for a sample of search terms used), located in excess of 15,000 results published since 2005. Narrowing searches by 'thesaurus terms' such as "higher education" and "distance education" reduced the number of articles. Limiting the search parameters to "case studies" proved too limiting as too few relevant studies were tagged as case studies. However, it became increasingly apparent that, though many of these provided a general overview of the different elements of the guiding questions, and a number of them detailed the theoretical value of various tools for intervention, few specifically evaluated the use of existing digital tools or other interventions with flexible learners during the transition period.

Another challenge came from the project's use of a broad definition of flexible learners, which includes adult learners engaged in part-time and online/distance learning. This definition necessitates drawing on different parts of the literature, for example those focusing on Online Distance Learning (ODL) students and those focusing on part-time study. A related challenge is that there is much more literature relating to ODL students and related issues than there is on part-time study.

A further challenge was also presented by initially seeking to embrace a non-exclusive definition of what constituted a 'tool', for the purpose of uncovering as many interventions and resources in the literature as possible. This approach did not prove to be as fruitful as was anticipated, as the results uncovered were too varied. Therefore, a more grounded approach was adopted with the database of existing digital tools (see section below) being used to inform further searches

by using specific keywords derived from an analysis of this database. This approach broadened the found set of literature, but not on the scale hoped for. For example, one such search, "'readiness assessment' AND 'online'", provided 15 results, of which only 1 was deemed to be relevant to the research topic.

It was concluded from this process that there is a dearth of peer-reviewed evaluations of tools used with flexible learners during early phases of the study life cycle. At that stage our sample of literature was considered sufficient for the purposes of this study and no further searches were conducted.

Literature analysis findings

This subsection presents the literature relating to: the study life cycle; flexible learning; the importance of student success in the first year; and transitions into higher education. Consideration is also given, in this subsection, to what tools the literature indicates are useful in supporting such transitions.

Study life cycle

The study life cycle can be envisaged in a number of different ways; chiefly as a series of steps, or as a cycle. The Open University of Australia (no date) sees the "pathway to student retention and success" as a linear six/seven step process; thinking about study, enrolling in the unit, waiting to start, beginning the unit, getting to the census date, completing the unit (and starting next unit/graduating), whereas Anagnostopoulou and Parmer (2008) visualise the "student success cycle" in a five stage cyclical pattern; raising aspirations, better preparation, first steps in HE, moving through, student success, (raising aspirations) (see Table 2). Both models focus on success. The Open University of Australia model has a chronological breakdown of the different stages of the study lifecycle, and the Anagnostopoulou and Parmer model has an emphasis on early interventions to better aspirations and preparation.

The Open University of Australia *"pathway to student retention and success"*	*Anagnostpoulou and Parmer (2008)* *"student success cycle"*
1. Thinking about study 2. Enrolling in the unit 3. Waiting to start 4. Beginning the unit 5. Getting to the census date 6. Completing the unit 7. Starting next unit/graduating	1. Raising aspirations 2. Better preparation 3. First steps in HE 4. Moving Through 5. Student Success (raising aspirations)

Table 2. Two study life cycle models

The model adopted by the present study, which is a more detailed six stage study life cycle (Brown, 2014), goes two steps further. It traces the stages of study in chronological steps, but also contextualises the stages in their institutional setting, and it emphasises early intervention. The stages are depicted as columns in Figure 1 and include: thinking about study, making choices, enrollment, first weeks, progression, completion. On the left of the columns in Figure 1 are the main contact points for students in their university as they progress through the lifecycle; individual staff, peers, school, institution. The progressively more delineated groups to be targeted for intervention during the different stages are identified within their relevant columns; from all learners, to select groups, to at-risk learners, and finally to learners who are failing.

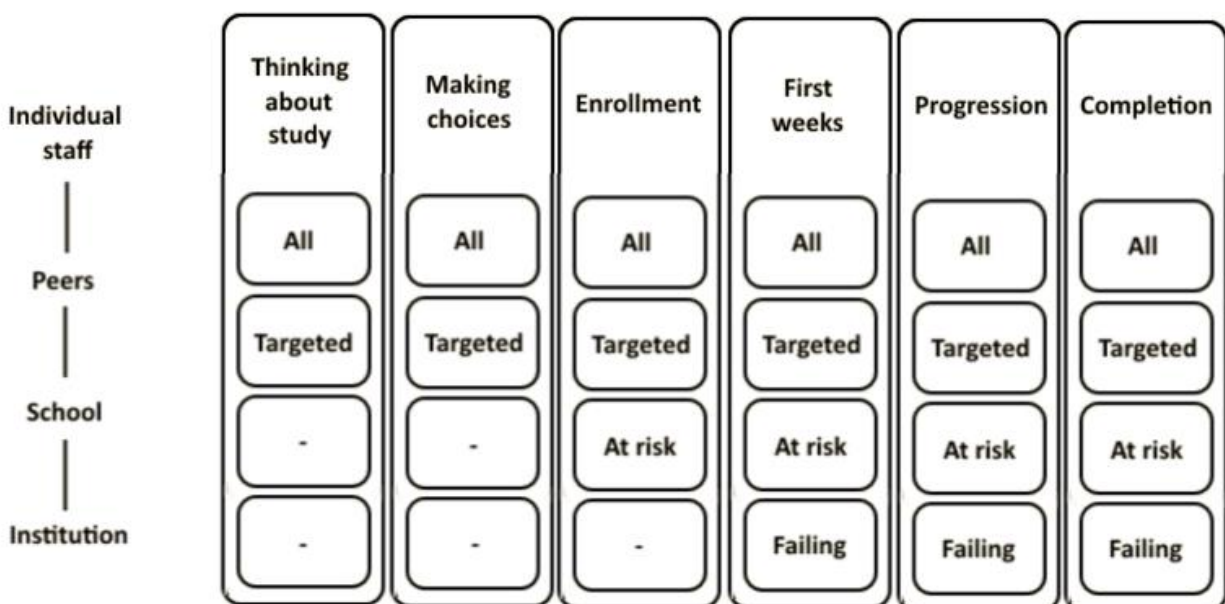| Individual staff	Thinking about study	Making choices	Enrollment	First weeks	Progression	Completion
	All	All	All	All	All	All
Peers	Targeted	Targeted	Targeted	Targeted	Targeted	Targeted
School	-	-	At risk	At risk	At risk	At risk
Institution	-	-	-	Failing	Failing	Failing

Figure 1. Study Life Cycle (Brown 2014)

Given the strong correlation between a learner failing in a module and dropping out permanently (Woodley and Simpson 2014, p. 460), effective interventions would ideally be targeted at at-risk learners, or those with characteristics that will potentially put them in the at-risk category before they reach the possibility of failure during the first few weeks.

Who are flexible learners?

To reiterate, in the context of this project a broad definition is adopted of flexible learners, which includes adult learners engaged in part-time and online/distance learning. In this subsection this definition of the flexible learner will be reviewed in the light of how the literature describes 'the flexible learner'. Flexible learning is a concept that, in many ways, cannot easily be defined without reference to the context in which it occurs. In their overview of the concept in the Irish and European contexts, Flannery and McGarr (2014) observe that flexible learning is heavily linked in public discourse to lifelong learning, or as the Department of Education and Science (2000) defines it, "mature adult participation [in higher education] through flexible options which can be combined with family and work responsibilities" (Flannery and McGarr 2014, p. 424).

More recently, the higher education Authority (HEA 2012) defined 'flexible learners' simply as those students who are in "part-time, distance, e-learning and in-service education", and as 'participation that leads to less than sixty credits per academic year' (HEA 2015 p. 37). These learners tend to be from one of two educational backgrounds; already educated and upskilling, or 'second-chance' learners, possibly from marginalised populations who have been previously excluded from higher education (Flannery and McGarr 2014). 'Flexible learning' in the sense of non-formal participation on MOOCs has also been growing in popularity in recent years but, unless otherwise stated, the term is used here exclusively in relation to formal undergraduate-level study in a higher education institution.

The benefits of higher education are well documented both in terms of individual and societal returns (OECD 2015). Importantly this is true irrespective of the mode of study, whether full-time or part-time/flexible (Callender et al. 2011). For this reason great emphasis is placed on the importance of targeting policies and resources to ensure equitable access to higher education and promotion of lifelong learning opportunities (OECD 2015). The National Strategy for Higher Education in Ireland (Hunt 2011) recommends increased flexibility in Irish higher education provision if levels of higher education attainment and lifelong learning are to increase. The European Commission (2014 p.11) too assert that 'flexibility is essential for non-traditional learners' thereby acknowledging the enormous potential of technology to widen access to higher education and support lifelong learning and continuing professional development.

The rate of participation in Irish higher education of mature students has increased in recent years, with most of this increase in part-time or flexible course provision, which has increased from 7% in 2006 to 19% in 2012 (HEA 2015). The current target of 22% for part-time/flexible participation represents an increase of approximately 11,000 part-time and flexible learners over the next five years (HEA 2015). The age of students influences part-time study, with older students more likely to study part-time (European Commission 2015). Age, in turn, is often related to socio-economic background, with adults more likely to have delayed their participation in higher education for reasons related to social class (Brine & Waller 2004; Croxford & Raffe 2014, Delaney 2015). The Irish government seeks to increase participation in higher education by those from lower socio-economic backgrounds, first-time mature entrants and part-time/flexible learners (HEA 2015 p. 34). In order to achieve these targets it would seem imperative that flexible options in Irish higher education provision are developed and supported.

Flexible learning also refers to 'pedagogical flexibility' as distinct to 'logistical flexibility' (Collis and Margaryan 2007). The flexible learner in this second reading is "collaborative, contextual and connected" (Sims 2008, p. 154) or an independent, persevering worker requiring just clarity and an instructional set in allowing them to achieve mastery of information (Nunes, 2006). Arguably, active participation in and the shaping of one's own educational experience is something all learners should aspire to achieve. What differentiates flexible learners from 'campus-based', full-time undergraduate students in this regard is the extent to which self-regulatory skills are required in (this definition's) flexible learning. Flexible learning modes are more student-centered than traditional classroom learning, and students assume more responsibility and autonomy for their own success, particularly in asynchronous learning

settings (Kuo et al. 2014). Drawing on the works of Artino and Stephens (2009), Barnard-Brak et al (2010), Hodges and Kim (2010), and Kuo et al. (2014) conclude that the more skilled a student is in self-regulatory learning, the greater their chances of success as a flexible learner.

The term 'flexible learner' is not uncontested, and there may perhaps be a tendency to overstate the actual flexibility of flexible learning as Selwyn (2011) observes in his qualitative study of 60 ODL students around the world. Logistically, and indeed, in many respects pedagogically, flexible learners were the exception rather than the rule. Though some students embraced the 'wherever, whenever' possibilities offered by flexible study options, many adhere to strict, inflexible study timetables to fit studies around other commitments. And far from engaging deeply in the learning experience, many students do the bare minimum to progress (Selwyn, 2011). This suggests pedagogical flexibility may be desirable but it is not absolutely necessary for the 'success' of logistically flexible learners, at least not on courses where, for example, taking part in group discussions or collaborative work is not compulsory. Additionally, the reality of flexible learning, framed by the standard grammar of higher education institution semesters and assignment deadlines, did not tally with many students' pre-entry expectations around the flexibility they thought would be afforded to them (Selwyn, 2011). It is worth noting that Selwyn's work concentrated on successful students who had overcome the challenges they faced, and there is no mention made of students who did not succeed.

What do we know about student success?

For this project, given its scope, student success is tightly defined as being: where a student moves beyond the early stages of the study life cycle, i.e. beyond the first few weeks of study, without exiting their programme of study/the institution; or, makes an informed decision not to study having reflected on their readiness for study at higher education level. This subsection will examine this particular definition in the context of others in the literature.

Defining what is meant by 'student success' is not a simple task. The term is complex and problematic, both in how we measure and understand it. The openness of the term arguably fits better with the concept of flexible learning than many similar terms in the literature. Unlike terms such as *retention*, *attrition,* and even *progression*, success is student rather than institution centred. Student success is also a positive term, as opposed to deficit-oriented terms such as *dropout* and suggests the longer-reaching impact of becoming a flexible learner than *persistence* and *completion*, which can be understood to tie directly into the duration of the learner's study with a particular institution. Non-completion of study does not necessarily mean the student has been unsuccessful; withdrawal can be seen as a successful outcome if it is the right choice for that student.

For the sake of quantifying student success however, the most tangible measures of retention or progression and graduation rates are useful. In Ireland, the main source of data for student progression is the Higher Education Authority. Their most recent report on progression (HEA 2014) provides statistics for the progression rates of undergraduates in the academic years 2010/2011 and 2011/2012. Unfortunately, the HEA do not separate out data on flexible learners from those that are full-time, nor do they report graduation rates. Given the increased

importance of, and rhetoric around, flexible learning in Ireland and Europe at a policy level (cf. HEA 2013, Eurydice 2013), this is a significant oversight. The absence of this data makes it difficult to assess the precise scale of the problem in the Irish context but, without evidence to the contrary, it must be presumed that rates in Irish Flexible Learning programmes do not differ substantially from international rates.

It is widely acknowledged, though not widely publicised, internationally that Flexible Learning courses have appreciably lower rates of retention and graduation than full-time, campus-based courses. It is perhaps not in an institution's interest to publicise low completion rates of their flexible learners, especially when trying to attract new learners. Gallie (2005) notes that some reports put student attrition in ODL delivery to be as high as 80%. This would tally with the UK Open University's reported completion/graduation rate of around 22% (Woodley and Simpson 2014), as compared to a (British) national graduation rate of 39% for part-time students. Both these flexible learner graduation rates compare poorly to the 82% graduation rate for full-time students (Woodley and Simpson, 2014). In the same discussion, however, Woodley and Simpson put the international graduation figure for ODL education as often "around 10% or less". The discrepancy between this and Gallie's figure of 20% may appear substantial, but Woodley and Simpson contend that most figures on retention are disputable due to different statistical measurements and gaps in the data gathered internationally. There are also particular problems in ODL contexts around analysing retention rates rather than course completion rates, as the former may mask a number of course withdrawals if the student still passes other courses (Nichols, 2011). If anything, however, this only serves to emphasise the problem of flexible learner non-completion..

What causes a learner to drop out?
The reasons flexible learning courses have high non-completion rates are difficult to state categorically. As less has been written on the subject of success and retention in flexible learning than on full-time, campus-based contexts it is useful to outline some of the latter research first. Two such studies are briefly considered here. First a seminal work by Yorke (1999). Second, a more recent synthesis of retention research in the UK by Jones (2008) undertaken for the British HEA's "What works? Student retention and success programme" report (Thomas 2012). The reasons given for learner withdrawal in both reports are broadly similar, though there has been a noticeable change in the language used between 1997 and 2008, apart from where both identify poor preparation for higher education as a key factor in learner withdrawal. Both also identify financial problems as a major cause, though Yorke describes these as 'hardship' whereas Jones describes them as 'issues', which can include hardship but could also cover other problems such as bureaucratic issues or even a perceived lack of value for money. The largest difference in the terminology lies arguably in the description of academic issues; Yorke's learner made 'poor academic progress', while Jones' had an 'unsatisfactory academic experience'. The implied responsibility rests very much with the learner in the former, while the latter focusses on fault in the wider 'experience', which could encompass anything from the initial induction, to course materials, to staff-learner rapport. With a similar shift in culpability, Yorke sets out an incompatibility between the learner and their course and a lack of commitment to the course as two different factors, while Jones attributes

any lack of commitment to a weak course or institution match. Again the 'lack' reflects on the wider institution rather than primarily on the learner. Jones also adds personal circumstances to the list, and a lack of social integration. These are perhaps indicative of a shift in the interest and focus of more recent research on learners towards a whole-of-person view, which is reflected in the work on why learners find it necessary to withdraw. See table 3 below for a summary of Yorke and Jones' main points.

Yorke (1999) reasons for learner withdrawal	Jones (2008) retention research synthesis
- incompatibility between the learner and their course and institution; - lack of commitment to the course; - lack of preparation for the HE experience; - financial hardship; and - poor academic progress.	- weak institutional and/or course match, resulting in poor fit/lack of commitment - poor preparation for higher education - financial issues and personal circumstances. - unsatisfactory academic experience - lack of social integration

Table 3: A comparison of Yorke (1999) and Jones' (2008) reasons for learner withdrawal

A general shift of focus appears to have taken place in the time between the Yorke and Jones' publications. The focus has moved from resting almost exclusively on the learner and the academic side of study, to encompassing difficulties in broader learner/course, learner/institution, learner/learner and learner/rest of life interactions. As such, there is a noticeable social turn in how 'success' or otherwise is constructed and understood. Another important note is that both Yorke and Jones rely on self-reported data for their analyses, which means the reported reasons are by their nature subjective. Nichols (2011), citing Woodley (2004), highlights how such reasons may not be entirely reliable, given the frequent time-lag between the learner withdrawing and being asked for their reasons for withdrawal. There is also the possibility that the 'real reasons' for non-completion are not expressed, as learners may only cite reasons which they perceive to be acceptable, and/or do not threaten their self-esteem (McGivney 2004).

How does this compare to flexible learner retention?
The comparable work that exists would seem to confirm that the challenges detailed above are felt equally, if not more deeply, by flexible learners. Woodley and Simpson (2014) describe retention as the "ultimate invisible elephant in the room, the statistic to which everyone gives lip service but apparently no serious thought" (p. 460). Though studies on the scale of Jones (2008) have not been undertaken for flexible learners, Nichols' (2011) overview of several works in the area, including a number by Woodley and Simpson, certainly suggests that serious consideration has been given to the subject. A number of similarities and differences can be drawn between the reasons flexible learners withdraw from their courses and the reasons full-time, campus-based learners do, with three in particular standing out: personal circumstances;

weak course or institution matching; and unsatisfactory learner experience (Nichols, 2011).

Personal circumstances feature as a reason for full-time, campus student withdrawal, but perhaps weigh more heavily on many flexible learners, who are more likely to be combining flexible study with other, time consuming responsibilities (Brown, Hughs, Keppell, Hard, and Smith, 2015; McGivney, 2003; Nichols, 2011). Nichols observes that personal circumstances are frequently and consistently listed in the literature as one of the top reasons flexible learners withdraw from study (cf. Herbert, 2006). They may withdraw due to various reasons including employment demands, the needs of their dependents, workload, problems with finance, and organisation issues (Nichols, 2011).

Poor course or institution match also features as a reason flexible learners withdraw from their studies. Poor course choice and poor support from friends and family are identified as triggers by McGivney (2004), though older learners are less likely to pick the wrong course (Yorke, 2004) and more likely to cite external circumstances and financial reasons for non-completion (Yorke, 2004; McGivney, 2004). The characteristics of the learners, or of the course itself, can also play a role in the quality of learning/course match.

On the matter of unsatisfactory student experiences, the quality of the instruction offered is of considerable importance to student satisfaction; Gallie (2005) found that retention, student satisfaction and consequent grades achieved were on average higher on a specially designed "social interactive: cognitive teaching" version of an online course, than they were on 'shovelware', where an already existing course was copied without adaptation onto an online platform (p. 70). The essential difference between the two versions in this example was the use of learning management system options on the specially designed course to create dialogue and engagement through active e-mails, discussion boards, and time-limited lecture postings.

Regardless of course content though, it appears expectations around the workload on flexible learning programmes can often be out of kilter with the reality (Brown et al., 2015). Learners who drop out typically found study to be more work than expected (Nichols, 2011), and/or had believed that flexible study, for example ODL, was going to be easier than attending an 'on-campus' programme (Nash, 205). Nichols (2011) found one instance of a learner expecting the course to be doable in 6 hours a week, even though course requirements clearly stated a minimum of 10 hours would be required, while another student found she was spending twice the recommended time per week trying to keep on top of the work. Both students withdrew from the course. It would seem to be as important to foster realistic expectations among prospective learners regarding the nature of flexible learning (Brown et al, 2015), as it is to offer a quality learning experience. In situations such as the latter case, however, it is possible that the learners struggle to complete the workload if they do not have, and have not been taught, an appropriate skillset before commencing study. An example of a link between retention and the building up of a particular skillset is where the teaching of information literacy skills, and encouraging engagement with library services, has been shown to increase both retention and academic attainment among first year-students (cf ACRL 2010, Soria et al. 2013). Library led instruction sessions tied to specific assessments have been shown to be particularly effective in this regard (Hurst and Leonard 2007). Mery, Newby and Peng (2012) demonstrated the benefits

a one-credit online information literacy course could have on advancing students' information literacy skills. They argue that the extended guidance and distributed practice provided learners with more opportunities over time to grasp complex concepts, and that conducting the course online also provided flexibility and convenience. The ACRL (2010) notes that use of Facebook pages for an institution's library can promote awareness of the library and builds academic community among students

This leads to a further reason why students withdraw from study: poor preparation for the higher education experience. A number of elements which are relevant under the heading of 'poor preparation for HE' have been mentioned already; incompatible course choice, unrealistic expectations of workloads, under preparation in terms of developing the skills needed to complete the course, and unresolved tensions between study and other commitments. Another important element is that of time-management. To be successful, flexible learners need to be able to manage their time and self-regulate effectively, in order to both structure their study around their other responsibilities effectively, and make the most of the time available to them. If they cannot, they will fall behind in coursework (Ashby, 2004). Ashby found the top reason for withdrawal at the UK Open University was falling behind with coursework, followed by personal/family or employment responsibilities. It seems highly likely that the two are related, and the challenges around them could perhaps be better prepared for during the pre-entry period, for example by helping students to "calculate what is personally realistic during the path to enrolment" (Brown et al, 2015, pp. 12). The importance of time-management has also been emphasised by de Raadt and Dekeyser (2009), who developed a simple time-management tool in the form of a 'progress bar' for students' online learning activities. This tool is now available on Moodle.

Learners also withdraw from study due to problems around social integration and socialisation as a flexible learner. Both full-time and flexible learners can experience problems around belonging, but isolation is particularly common in flexible learning, perhaps due to to the often solitary nature of that study mode (Nichols, 2011). As is the case for campus-based students (Zhao and Huh, 2004), flexible Learners need to helped to appreciate the benefits of having good support networks as part of their studies (Brown et al, 2015). Anagnostopoulou and Parmer (2008) offer an exercise for students to map their own support network early in the study lifecycle, in order that they appreciate who is their life may be able to offer them support. Social media tools can be utilised to foster a sense of community between flexible learners. Early experiments in this space, such as those of Currant (2009) made use of now largely outmoded platforms such as 'Ning'. A more recent study (Pinto 2014) explores the potential use of a similar private network 'Yammer'. There is some debate in the literature around the role of social networks in establishing communities of learners, and whether social networking sites, specifically Facebook, can truly be used for learning given that it is designed to foster conviviality and deliberately exclude the debate and disagreement considered fundamental for learning (Ravenscroft et al. 2012; 179). Within an institution's LMS/VLE there is typically a facility to use discussion forums as part of the flexible learning experience, which can be utilised to foster a sense of community and belonging. When Gallie (2005) wrote about the adaptation of course materials to provide a social interactive: cognitive version of an existing course, discussion boards in particular as an integral part of the online learning experience were still a

relatively new development. Since then, they have become a standard feature of flexible learning. But though few tools are more pervasive, it is less easy to establish how frequently or effectively they are used by learners. Anagnostopolou and Parmer (2008) suggested a spectrum of engagement exists, from active participation, to 'lurking', to non-engagement. Selwyn (2011) similarly found that only a small minority of students engaged regularly on discussion boards, while many shunned them as a distraction to the 'real work' of 'getting an education'.

A final common thread between the literature on full-time, campus-based and flexible learner non-completion is that withdrawal typically occurs when the student faces a combination of such difficulties. Jones (2008) found an average of 2.1 reasons for withdrawal. Nichols (2011) also found that multiple reasons for withdrawal were given by flexible learners. This is an important point for academics and practitioners seeking to help flexible students succeed, as it highlights that an at-risk student will likely benefit more from a 'whole of student' approach to the provision of supports and interventions, than a fragmented approach. See Table 4 below for a summary of the reasons flexible learner withdrawal.

Personal Circumstances	Course/Institution Matching	Unsatisfactory Student Experience
- Demands of Employment - Needs of dependents - Workload - Financial Problems - Organisation issues - Time management	- Characteristic(s) of learner - Characteristic(s) of course - Low entry criteria - Appropriate skillset	- Quality of instruction - Expectations around workload - Social Integration/isolation

Table4. Reasons for flexible learner withdrawal

In summary, it is challenging to define the core concerns that impact success in a flexible learning setting, but there are a number of useful elements and aspects that surface from the literature on retention and progression (see table 4 above). These include concerns for the deeply social and personal nature of the learner experience, including the need to address difficulties around personal circumstances, institutional and course matching practices, the affective dimension of the academic experience, readiness for higher education, and the social dimensions of transition. Learners impacted by multiple difficulties are particularly at-risk.

What do we know about successful transitions?

This subsection considers the nature of transitions in relation to the flexible learner and student success. Themes of transition and transitioning have been a focus of academic research and thinking for some time now in the literature. An example of this is the seminar series funded under the Teaching and Learning Research Programme (TLRP) between 2005 and 2008[1], and

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[1] See *Transitions through the lifecourse: analysing the effects of identity, agency and structures*. URL: http://www.tlrp.org/themes/seminar/ecclestone.html

policy concerns articulated in various EU funded projects, such as DG Research's *Journeymen* (2005). These themes have only more recently moved onto the policy agenda here in Ireland. Recent ESRI work in the area (Byrne and McCoy 2013) signals its rising importance as does the Forum for the Enhancement of Teaching & Learning in higher education's focus in this space[2]

A working definition of transitions

Ecclestone, Biesta, and Hughes (2010) argue that transition is not the same as 'movement' or 'transfer', although it involves both. For them, transition is about change and shifts in identity and agency as learners progress into and through an education system. From this perspective, understanding transitions requires more than knowledge of facilitating changes in learning contexts or easing transfer between them. Understanding, and effectively responding to,learners' needs for effective transitions requires a better comprehension of "how people progress cognitively, emotionally and socially between different subjects at different stages of their learning, and how they navigate the complex demands of different contexts" (Ecclestone et al 2010, p. 6). A similar position is articulated in the work on transitions undertaken by Thomas (2012). The *"What works? Facilitating an effective transition into higher education"* project brings together findings from seven projects and 22 UK Higher Education institutions and identified the primary importance of student engagement and a sense of belonging. In each of these visions of transition there is an argument for viewing *transitions* as the navigating of pathways, structures and systems by the learner, and as a process of becoming. From this we can draw a working definition of transition for the purposes of this subsection: *a process of becoming capable and resilient in a changing and challenging academic setting*. This in turn points to the challenges of supporting such transitions, and raises questions about what higher education institutions can do to provide structures, support systems, and academic practices that enhance rather than inhibit successful transition.

Literature on transitions into higher education

Jones (2008) notes that the literature indicates that students are most likely to leave in their year of entry. This is a long established fact (cf. Yorke, 1999; Quinn et al, 2005; Yorke and Longden, 2007) but what has recently been added is the understanding that students who are actively supported over the course of this transition also develop the key academic skills needed to succeed in the longer run (Armstrong, 2015; Thomas, 2011). Given also that many of the students who exit will not re-enroll (Woodley and Simpson, 2014), this highlights the importance of supporting students in the early stages of the study life cycle in order to promote both retention and future success.

Further insights from the literature relate to why students persist. Much is related to the personality and personal circumstances involved, for example, Alt's (2015) work on self-efficacy for learning in higher education emphasises the role of students' beliefs in their capabilities to regulate their own learning and argues that this can help determine students' motivation and

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[2] See http://www.teachingandlearning.ie/sectoral-dialogue-session-report/ for relavent publications

academic achievement and, therefore, is significant in their learning processes. However, there is more involved here than learner characteristics. Institutional structures and arrangements are also central to successful transitions. For example, if we consider the reasons identified by Jones (2008) for learner withdrawal we can argue that students can feel stronger commitment to their courses and so are more likely to persist if there is (a) strong institution and course match involved, (b) good preparation on the part of the student for higher education prior to entry, (c) no (or at least few) financial issues or difficult personal circumstances, (d) a satisfactory academic experience, and (e) meaningful opportunity for social integration in the early stages of their studies. Clearly both learner agency and institutional action are required if persistence is to be enhanced.

Thomas (2012) also makes a number of observations around the issue of transition, arising from the *What Works?* project. These include a number of observations on the value of belonging and how this can be developed among learners experiencing transition. Evidence from *What Works?* suggests a need to put 'belonging' at the heart of improving student retention and success (cf. Brown et al. 2015), and centers on the fostering of a set of interrelated engagements and capacity building activities. Doing so, Thomas argues, requires four institutional-level initiatives. First, Action on Early Engagement in order to promote belonging that begins early and continues across the student lifecycle. Second, the 'nurturing' of engagement across the institution's services (academic, social and professional) with Academic Engagement being of primary importance to ensure all students benefit. Third, developing the capacity of both students and staff to offer an engaging experience, leading to shared responsibility for improving student engagement, belonging, retention and success. And finally, senior level responsibility in the institution for nurturing a culture of belonging and creating the necessary infrastructure to promote student engagement, retention and success. This, Thomas (2012) argues, should include the harvesting and thoughtful usage of data on the student experience to underpin transition, retention and success.

Thomas' (2012) four institutional level initiatives to improving student retention and success	*Issues associated with successful adjustment to HE*
1 Action on Early Engagement ○ Promote belonging **2 Nurturing of Engagement** ○ Across institution services ○ Academic Engagement **3 Developing Staff & Student Capacity to offer Engaging Experience** ○ Shared responsibility **4 Nurture Culture of Belonging** ○ Senior level responsibility	● Academic readiness ● Poor course choices ● Academic difficulties in integration ● Social difficulties in integration

○ Create necessary infrastructure	

Table 5. Factors influencing successful transition to HE

There is also recent and ongoing work in this area taking place in Ireland. As Byrne and McCoy (2013) observe, this is, with some exceptions including their own work, based on single-institution data or small-scale qualitative research. Nevertheless, as Redmond, Quin, Devitt, and Archbold (2011) note, over the past decade or so, some research has build up around student withdrawal in the Institute of Technology sector (Morgan, Flanagan, and Kellaghan, 2000; Eivers et al., 2002) and the Irish universities (Morgan, Flanagan, and Kellaghan, 2001; Blaney and Mulkeen, 2008). A theme emerges across much of this research that successful adjustment to higher education in Ireland is not just a single-factor issue. It is a bundled and complex issue, posing questions of academic readiness, of making poor course choices, of encountering academic and social difficulties in integrating into the institution, and, perhaps because of a combination of these, becoming disengaged (Redmond et al 2011).

What can be done to strengthen the possibility of successful transition?

Hussey and Smith (2010) identify a number of dimensions to successful transitional experiences that are equally applicable across both conventional and flexible learning settings. The key to success, they suggest, is that the 'design and delivery of higher education' should, as far as is practical, be based upon the major changes or transitions that the learner is experiencing. That is, the learner needs to be supported systematically across five dimensions of growth. First, their changing knowledge, understanding and skills, so increasing the prospects of successful transition from novice to knowledgeable skilled participant. Second, their autonomy, as they move from passive to autonomous learner. Third, their approach to learning, reflecting development of deep rather than superficial understanding. Fourth, their social and cultural integration as they enter into a culture of knowledge. Finally, the student's self-concept as it grows and changes in terms of self-description, self-esteem, and self-efficacy. Importantly, Hussey and Smith also note that there are transitions that the institution does not have control over and suggests that the focus should therefore be on what the institution can affect.

Murphy, Politis, and Slowey (2015), although directing their commentary at policy for conventional learners, also make a number of observations and recommendations around mature learners that are equally relevant to those adults engaged in flexible learning. For example, they identify student-centred, activity-based learning as a key enabler of academic ability and increased student confidence. Both are issues for many flexible learners, perhaps particularly 'second-chance' learners. Additionally, they point to the often underestimated value to an institution of providing a space on campus dedicated to the 'wider community of adult learners', including evening, part-time, distance and/or online programmes as well as adult learners taking full-time, campus based programmes. They argue that the needs and interests of such groups are very likely to overlap.

The above are essentially strategic level interventions on the part of an institution in relation to supporting successful transitions for its learners. They reflect the possibility of institutional

processes being used to open out access, to conduct research in support of this agenda, and to interpret the data sets that result. There is considerable justification for this in that it can lead to what Brown et al. (2012) have described as "evidence-based deliverables" (pp. 73) targeted at both flexible learners and providers, much of which can feed directly back into improved flexible learner experience through better materials and more appropriate institutional arrangements.

Other possibilities at the strategic level are foregrounded by Simpson (2009) who claims there are many possible interventions available that have been known to successfully support engagement. However, these interventions are often applied in a seemingly 'ad hoc' manner or what he describes as a 'goulash approach'. Institutions, he argues, need to a) analyse their own retention strategies, in order to 'spot the leaks', and b) move away from the *ad hoc*, and be strategic in use of tools to support successful transition.

An example of a successful strategic targeting of support services to promote engagement is reported by Nichols (2011). This research found that course retention in a group of first-time ODL students improved from 57% in 2008 to 81.7% in 2009 when a number of student supports were introduced, including a compulsory student support survey, orientation course, general messages of support, and personal contact with students requesting help. Interestingly, Nichols (2011) did a follow up to his survey of dropouts in 2008 with 'at-risk' students in 2009 to see if he could find out why they stayed. He hypothesised that the increased student supports put in place by the institution made the key difference and concluded that retention was demonstrably higher because of these additional supports.

Short online courses, focusing on a particular programme of study, can be used to aid learners in assessing how good a fit a particular course is for them. Vihavainen et al. (2013) made interesting use of a MOOC (Massive Open Online Course) as a semester long entrance exam to their undergraduate computer science course. This was reported to have impacted learners in two ways: it helped promote realistic expectations in learners about what was involved in the study of computer science; and making completion of the MOOC a requirement for admission ensured the new entrants had aptitude in the area. As a consequence, retention was significantly higher in the MOOC's first year.

Libraries can offer another avenue of student support leading to successful transitions. Libraries are increasingly involved in teaching academic skills such as information literacy, and matter to the student experience because they socialise learners into academic life. Haddow (2013) for example, notes that Library use can be regarded as a form of integration into the academic life and practices of higher education institutions. Libraries, Haddow argues, attract people, offer concentrations of expertise and other people who are willing to help. They attract and retain a community of scholars who demonstrate academic discourse and behavior and socialise people into this academic way of being.

Much more low-key interventions can also make a difference to the student experience and transitions of learners. Murphy, Politis, and Slowey (2015) have noted that the nature of enquiries and decision making processes are quite different for adult learners from those of school leavers entering higher education. They recommend that there need to be clearer routes of enquiry for adult learners who are seeking more generic advice on the range of options at a

higher education institution. Similarly, they suggest that early access to timetables etc. would make it easier for adult learners to start on their studies as they have to plan for family and finan-cial commitments.

All of these interventions, whether strategic or more low-level, can help create belonging and engagement among flexible learners. Their impact could also be enhanced if foundational concerns such as those of Thomas (2012) were taken into account when an institution is planning what it will do to strengthen the possibility of successful transitions. There is, however, something of a debate around making interventions mainstream or targeting them at at-risk students. Sometimes, as noted by Thomas and Hill (2013, p.3), "the exact type of intervention or approach is less important than either the way it is delivered and/or its intended outcomes".

What do we know about transitions, and how does it relate to flexible learning?

This section has already dealt with the nature of transitions in relation to the flexible learner and the bundled and complex issues involved in successfully transitioning into a higher education setting. It has touched on challenges relating to flexible learners academic readiness, the problems often flowing from poor course choices, the effects on motivation, interest and engagement that can stem from encountering academic and social difficulties when integrating into higher education, and the learner disengagement that can easily result from a combination of such issues.

Transitioning into higher education can be seen as a phased process, with both pre-entry and on-entry phases that correspond with two stages each of the study lifecycle (Brown, 2014). The most effective pre-entry interventions (thinking about study, making choices) combine to provide accurate information, inform expectations, develop academic skills, and build social capital (Thomas 2012). They do this predominantly through fostering links with peers, current students and staff that can subsequently be used for information, support and links to others, and by nurturing in the new learner a genuine sense of belonging and purpose. Indeed, considering the wide array of benefit that can be had by learners who undertake flexible study, consideration could be given to making such pre-entry interventions mandatory. On-entry options (enrollment and first weeks) are similarly well captured by Thomas (2012) when she distills the challenge of meeting the main transitional needs of flexible learners down to creating student engagement and belonging across four very specific channels: fostering supportive peer relations, consistently offering meaningful interaction with well-briefed staff from across the institution, prioritising the development of flexible learners' knowledge, confidence and identity as successful higher education learners, and consistently offering a higher education experience relevant to learners' interests and future goals. The benefits of the involvement of student ambassadors during an orientation have been noted by Thomas. As existing students, they are perceived by new-entrants as providing genuine insights into the higher education experience. Networking with existing students is also an important part of building social capital and a sense of belonging. It is, arguably, only by building both staff and learner capacity, and by having institutional level management and coordination, that learners can be given what they need to navigate the structures, systems, and academic practices institutions put in place, to

successfully transition to higher education, and to build the capability and resilience necessary for student success (Thomas, 2012).

Literature on digital tools that facilitate successful transition into higher education

Studies specifically relating to the use of digital tools to support flexible learner transition into higher education, where they exist, tend to cover research based in a single institution. These provide insights into the possibilities and the challenges of implementing various tools in a higher education setting. Only one study was found which provided a meta-analysis of a particular tool used with, or by, flexible learners during the transitional period into higher education; Farid (2014). This study took a birdseye view of the tool in question, a readiness survey, and the work was able to offer more broadly generalisable observations and comments than are plausible in a single institution setting. Farid (2014) systematically reviewed 5107 papers on student online readiness tools published between 1990 and 2010. Of these it was found that no standard tool for assessing readiness existed, only 10 instruments had been developed and published in scientific journals over 20 years, and of these 10, few demonstrated "good psychometric qualities" (Farid 2014, p. 375). This claim is supplemented by the observation that many unpublished or 'homemade' readiness tools were developed in-house in universities, seemingly without reference to the tools published in peer-reviewed journals. Farid argues that results from the majority of current self-assessment tools are subjective, rather than objective and measurable, and may not be the most accurate "unless more serious research is done that proves the validity and reliability of the instrument" (Farid 2014, p. 380). It should be noted that peer-reviewed work on the development of learner readiness tools has indeed been undertaken since 2010, and works such as that of Dray et al. (2011) are examples of the 'more serious' research Farid (2014) recommends, as well as being more practical in terms of providing examples of the kinds of questions that are useful. Anagnostopoulou & Parmer (2008) does offer a practical guide to e-learning and retention as part of the Ulster University STAR resources which has proved very useful in this report, though it falls shy of being a peer reviewed synthesis of evaluations. Nevertheless, the observation about tools being 'home-made', or developed without verifying their validity and reliability, is an important one which highlights what appears to be a relatively common phenomenon when we contrast the dearth of published literature in this area, especially in relation to those evaluating multiple tools used with, and by, flexible learners during their transitions into higher education with the wide array of tools in actual use by institutions.

Summary

The literature analysis has offered insights from a variety of sources, national and international, and locates the Student Success Toolbox project in relation to the nature and scale of the challenge it faces. It is clear that the face of higher education is changing in Ireland and beyond, and will continue to do so. Brown et al. (2012) make a key point when they argue that flexible learning options provide an important pathway for social inclusion through the provision of flexible routes/opportunities that can be undertaken alongside family and life commitments. But while flexible routes offer the prospect of inclusion for those who otherwise may be excluded

from higher education, this remains problematic in the absence of proper support and engagement strategies.

A number of tools and interventions have been identified in the previous stage of this research. To recap, Nichols (2011) evaluated positively the use of support measures, including a compulsory support survey, orientation course, general messages of support, and personal contact with students requesting help to aid retention. Gallie (2005) found discussion forums, active emails, and time-limited lecture postings useful to foster greater student satisfaction, and improve success. Murphy, Politis and Slowey (2015) suggested mature learners would benefit from generic advice on the range of options at higher level to help course choice, early access to timetables to get started in their studies, and activity based learning to improve academic ability and confidence. Furthemore, they highlight the importance and possibilities of providing a space for new entrants to socialise with the wider community of adult learners.

However, though useful, the number of tools identified in the literature were limited. The second of the two main outputs of Phase Two of the Student Success Toolbox project, a database of existing digital tools used by select universities and institutions around the world, seeks to address this gap.

The database of existing digital tools

This section will first present the methodology used to conduct the analysis of existing digital tools, before going on to present the results of that analysis.

Methodology - Creating the database of existing tools

To create the database, a list of tools was compiled through an examination of the websites of twenty-two leading 'flexible learning' institutions in four different regions of the world. This examination involved the identification of website-based readiness tools that these institutions were making available to prospective learners and/or learners who were preparing for study in that institution. The database is not intended to be a comprehensive list of existing tools, rather it seeks to provide an overview of the type of tools being used by these leading, 'flexible learning' institutions, to facilitate successful transitions into higher education. It should be noted that that a reliance on the institutions' public websites to locate the tools led to the documentation of larger number of resources available during the first and second stages of the study life cycle - Thinking About Study and Making Choices - than in the latter two of interest here. This is largely due to the fact that resources used in the third and fourth stages, Enrolment and First weeks, are often only available to registered students. However, as the two primary areas of focus in this project are the creation of engagement and the fostering of belonging early in the student life cycle, the concentrated focus on tools used in the early stages has proved more of a benefit than a limitation of this methodology.

In the UK, four institutions were examined: the University of Edinburgh; the UK Open University (OU); the University of Leicester; and the University of Liverpool. Another four institutions were examined in the US: Pennsylvania State University (Penn State); Arizona State University (ASU); University of Maryland University College (UMUC); and the University of Wisconsin.

Seven institutions in the Southern Hemisphere were examined: Deakin University; the Open University of Australia (OU Aus); Charles Sturt University (CSU); University of New England (UNE); University of South Queensland (USQ); the University of South Australia; Massey University; and the University of Southern Africa. In Asia, four English language institutional websites were examined; the Malaysian eUniversity (AeU); Korea National Open University; Hong Kong Open University; and the Singapore Institute of Management (SIM). Finally, three private education providers were examined: the University of Phoenix; the American Public University (APU); and Kaplan University (KU).

Tools were defined broadly as any resource or intervention which could be used with or by flexible learners (in pre-entry or on-entry phases of the study lifecycle). Not all the tools found were digital per se, though access to them was online and in almost all cases they were listed on the institution website. tools located through this analysis can be viewed in the Appendix 1 document. Rather than analyse the tools geographically or based on their format (video, webpage, quiz, etc.) the tools were coded thematically and clustered into groups based on the key factors for student success identified by Jones (2008), as follows:
1) Course match
2) Preparation for higher education
3) Orientation
4) Addressing personal circumstances
5) Community
6) Satisfactory student experience

Cluster groups

The six cluster groups correspond closely with the key factors identified by Jones (2008) as the main factors that, when in deficit, contribute to early learner withdrawal. The cluster groups summarise the tools located through the analysis (see the Appendix 1 document for the full list of tools) are by no means discrete, indeed there was a large overlap between the preparation for higher education and orientation tools. Bearing this in mind, however, they prove useful for analytical purposes, and form the bases of the analysis in the next six subsections.

Course match

The provision of accurate information during the first two stages of the study life cycle is essential to provide enough information to ensure adequate learner/course fit. For flexible learners, this match is arguably as much about finding a mode of study that will fit into their busy lives, as it is about choosing an area of study that interests them, and that they will succeed in.

The tools found to fit in this cluster group tend to be course and/or institution specific. The standard approach utilised by analysed institutions is to list information about the courses offered on their websites. Some institutions feature student testimonials in text or video format on these pages. Some institutions also offer student advisors or enrollment counsellors that prospective students can contact. Kaplan University and Open University Australia both have pop-up 'chat with an advisor now' windows on their websites. It seems unlikely that these

course-matching tools will offer the kind of generic advice or promote the kind of realistic expectations of study that could be of most benefit to the prospective learner. In particular, the videos of successful flexible students featured on many websites are arguably more to draw people in than to encourage serious consideration of how study would fit in their lives.

A small number of examples where short online courses were utilised were found when examining existing tools. First is a 'try before you buy' option offered by the private institutions University of Phoenix and Kaplan University. This approach allows a student to enter a course on a trial basis, before either leaving or paying up in full by a certain date. second was the existance of MOOC platforms such as OpenLearn and FutureLearn, which offer free courses in a wide variety of areas of study. These are, in one sense, another form of marketing for institutions, as the MOOC courses typically link back to the institution's main website. However, they are also a low risk way for learners to try out multiple different course areas, while building their confidence as a flexible learner and developing self-regulatory learning skills before engaging in formal study, if they choose to do so. The Open University of Hong Kong also offers 'free courseware' in order that learners can explore different areas of study.

Preparation for higher education

Preparation for higher education was the cluster group in which the most tools were uncovered during creation of the database, possibly because preparation for managing the transition into higher education is complex and multifaceted. Two subcategories of these tools stood out: readiness assessments; and online tutorials.

Readiness assessments

The difficulties associated with the 'homemade' nature of many readiness assessment tools have already been highlighted above. When these are looked at in practice however, the criticism of their psychometric properties overlooks the practical function many of these serve as guides to areas where learners may need to improve before beginning a course of study. Most of these tools focus on academic skills, but a more encompassing example from the University of Southern Africa involves a prospective learner exploring their 'abilities profile' (identifying the areas in which they have learning deficits, and to whom they can talk to get appropriate help) in part one of the tool, and then part two addresses learners personal circumstances and how they may impact on their studies. Often these tools then link learners to other resources on the website.

Generic, optional, online pre-entry readiness courses for new learners are offered by several universities such as the Open University UK, the University of Maryland, University of Wisconsin, Charles Sturt University, and the University of New England. The Open University UK states on their website that students who take their preparatory course tend to have better rates of success subsequently. The University of Liverpool is the exception with regard to this tool, as the readiness assessment at the end of their "Get Ready" course is compulsory and must be passed before study can commence, effectively making their pre-entry readiness course compulsory.

<u>Online tutorials</u>

With regard to online tutorials, which include the University of Leicester's "Succeed in your Studies" tutorials, Deakin University's "UniStart", University of New England's "tUNEup", the Singapore Institute of Management's "Guides to Successful Learning", and Massey University's "Online Writing and Learning Link" (OWLL). Automated instruction in information and digital literacy, and study skills are often available as self-taught tutorials, in text-based or video format. University of Leicester, University of New England and the University of South Australia offer tutorials on how flexible learners can request postal loans. University of Phoenix and University of Leicester have broader videos on how to use their virtual libraries. Some university libraries, such as the Open University UK, have Facebook pages. Pennsylvania State University's iStudy for Success tutorials, which cover an array of study skills, life skills and job skills are distributed under a creative commons license, and so are free to repurpose in other institutions. The format of many of these tutorials, discussions among friends on simple comic strips, are perhaps targeted at a younger audience than typical flexible learners, but the content itself is interesting and relevant to all new learners. Massey University's "Student Workload Calculator" is a tool that allows learners to calculate exactly how much time their study will require, how much time other parts of their lives require, and where this leaves them in terms of having enough time, or not, for their studies.

Orientation

The following tools were initially listed under the "preparation for higher education" heading. However, due to the large number of orientation tools located they were separated out under their own heading. Orientation for flexible learners, particularly ODL students, is a rather different phenomenon than orientation for full-time learners. Looking at the tools in the database, there are also a wider variety of approaches to orientation taken by institutions than to tools in other clusters; from a laissez-faire approach, to an intensive one-day live webinar.

The most basic orientation for flexible learners is a 'DIY' approach where new entrants simply look through the institution's website in order to orient themselves. One such example is that of the University of South Australia. A second level of orientation is a quick-start orientation webpage, containing video links that, for example, run through the different functions of the LMS/VLE. Arizona State University and the American Public University present their broadly similar four-video-orientations as a "Roadmap to Success" and a "Virtual Tour" respectively. Interestingly, both place emphasis on the student voice, Arizona State University with a video of an existing student talking about the student experience and the American Public University with a student character providing the voiceover for an animated orientation video. However, the involvement of the student voice here arguably falls short of representing a fully fledged student 'ambassador' role on two counts. First, the videos are pre-recorded and there is no opportunity for the new entrant to network with that student. Second, their insight has been mediated through an editor, and often seems to be for the purpose of marketing, which makes the authenticity of their testimony questionable. A closer equivalent to the student ambassador role can be found in the orientation practice of the University of Liverpool. The University of Liverpool holds a live 'New Student Welcome' web-event after enrollment, which gives new students the opportunity to connect with academic staff through webcasting and live chat. Existing students

are also involved in the event to answer questions. It is an interesting approach to orientation that ticks a number of boxes around creating opportunities for networking and socialisation that other tools do not.

One final approach to the orientation of online learners is worth noting here; the "Balloon Tour" offered by the University of Edinburgh. The University of Edinburgh was, at the time of writing, the only institution in the database with a virtual-world based campus. Based in the SecondLife platform, visitors to Virtual University of Edinburgh (VUE) can literally take a balloon tour of the virtual campus. It appears this initiative may be in the process of transitioning to a different platform - the SecondLife campus appeared to be empty during a balloon tour on the 16th of April 2015. However, as an orientation it is a novel idea, and it is a space that will likely be revisited in the coming years as virtual-reality technology becomes more realistic and more widespread.

Personal circumstances

Given that personal circumstances are one of the most oft-cited reasons for flexible learner early withdrawal from study, offering quality student support services is of considerable importance to improve retention. In terms of existing tools in this area, the range of supports on offer for social and financial issues to students tend to take one of two forms; self-help and or staff-guided. The financial supports on offer are perhaps the most geographically linked of all the resources and interventions considered in this project. Financial supports are perhaps most prominent on the US-based and private education providers' websites, and a common theme is discounts for ex-servicemen and military families. By contrast, these types of initiatives are not as prominent on UK-based institution websites. On social issues, there is a less stark geographic divide. Most institutions have support staff, in a teaching and learning unit and/or in advisory and counselling roles. University of Leicester, Pennsylvania State University, Open University Australia and the University of South Australia all offer self-help guides or tutorials. The first three concentrate on health and welfare, with the University of South Australia offering a slightly different "9 Ways to Stay Motivated" guide. Unlike many of the tools discussed so far, these guides are predominantly text-based.

When it comes to support for overcoming personal circumstances there is an opportunity to foreground the student voice. The Open University UK and Deakin University both have student associations for distance learners, and Deakin University is introducing Peer-Assisted Study Sessions (PASS). A useful tool in this area is the "Guide to Learning" Tumblr blog, associated with the FutureLearn platform. On this Tumblr page, learners post their tips for studying such that other students can view them, and learn from them.

Community

Feelings of isolation are common in the flexible learning experience, and the fostering of a sense of belonging is key to improving both retention and the student experience itself. In terms of tools used to create a sense of community, the extent to which social networking sites are used is not surprising. Most institutions reviewed have a presence on the currently most popular

social networking sites: Facebook; Twitter; and LinkedIn, and to a lesser extent YouTube and Flickr. Some have a podcasting presence on iTunes and Soundcloud, while the University of Phoenix has its own social network, PhoenixConnect. In practice, however, analysis of our database would suggest the main function they serve is to establish more socially minded connections between peers, and between broader institutions and learners. These connections could potentially be used for learning, but perhaps more interesting is their relevance to the provision of a space for socialisation within the wider community of adult learners, which is beneficial for the fostering of belonging as flexible learners are unlikely to be able to frequently access physical spaces on campus for this purpose.

Satisfactory academic experience

There are many dimensions to the creation of a satisfactory academic experience, many of which come into play in stages of the study lifecycle that come after those that are the focus of this project. However, the foundations for a satisfactory academic experience are laid in the pre-entry and on-entry period, and so this cluster is closely associated with both the 'preparing for higher education' and 'orientation' subsections above. Using appropriate tools during the pre-entry and on-entry periods to manage new flexible learners expectations will facilitate those new learners feeling satisfied with their academic experience, rather than being dissatisfied when the reality does not live up to unrealistic expectations.

This management of student expectations can be accomplished through the use of: pre-entry readiness assessments, such as that used by the University of Southern Africa; Generic, optional, online pre-entry readiness courses for new learners, such as those used by the Open University UK, the University of Maryland, University of Wisconsin, Charles Sturt University, and the University of New England; compulsory pre-entry readiness courses, such as the "Get Ready" course in the University of Liverpool; online tutorials, such as the University of Leicester's "Succeed in your Studies" tutorials, Deakin University's "UniStart", University of New England's "tUNEup", the Singapore Institute of Management's "Guides to Successful Learning", and Massey University's "Online Writing and Learning Link" (OWLL). Such online tutorials provide new flexible learners with something they can use to create their expectations in areas such as library literacy, computer skills, study skills, life skills, or job skills. Automated instruction in information and digital literacy, and study skills are often available as self-taught tutorials, in text-based or video format. University of Leicester, University of New England and the University of South Australia offer tutorials on how flexible learners can request postal loans. University of Phoenix and University of Leicester have broader videos on how to use their virtual libraries. Some university libraries, such as the Open University UK, have Facebook pages. Pennsylvania State University's iStudy for Success tutorials, cover an array of study skills, life skills and job skills. Massey University's "Student Workload Calculator" is a tool that allows learners to calculate exactly how much time their study will require, how much time other parts of their lives require, and where this leaves them in terms of having enough time, or not, for their studies. The analysis of existing tools also found many instances, for example in Arizona State University, The University of Edinburgh, and the University of Liverpool, where discussion forums were used as a tool for facilitating transitions. As a standard tool used in most

institutions LMS/VLE this is a useful strategy to ensure that new flexible learners are acclimatised to the use of discussion forums before they begin their studies.

Any work carried out toward facilitating flexible learner transition into higher education carried out in the pre-entry period must be reinforced in the on-entry period, during orientation. This is an especially important stage of the study lifecycle in which to manage flexible learner expectations as it is at this point that they are comparing their expectations to the reality of the institution/programme for the first time. The most basic orientation for flexible learners is a 'DIY' approach where new entrants simply look through the institution's website in order to orient themselves, for example the University of South Australia's website. A second level of orientation is a quick-start orientation webpage, containing video links, for example Arizona State University and the American Public University present their broadly similar four-video-orientations as a "Roadmap to Success" and a "Virtual Tour" respectively. The University of Liverpool holds a live 'New Student Welcome' web-event after enrollment, which gives new students the opportunity to connect with academic staff through webcasting and live chat. Existing students are also involved in the event to answer questions. the University of Edinburgh offer a "Baloon Tour" of a virtual version of their campus.

Existing digital tools and how they relate to the literature

The purpose of the tools database overviewed in this section was to a) identify tools used by some of the leading flexible learning providers in the field and b) offer a synthesis of their use as they relate to the literature on flexible learning and transitions.

A broad array of tools were reviewed, including but not limited to readiness assessments; online tutorials, preparatory courses, support-network mapping tools, and crowd-sourced tips from existing learners. Table 6 below provides a list of twelve areas for potential tool development during Phase Three of the Student Success Toolbox project: Course-specific MOOC; Generic advice on flexible study tool; Generic preparatory course; Readiness assessment quiz tool; Workload calculator tool; Generic orientation tool; Support mapping tool; Crowdsourced tips tool; Adult learner 'space'; Discussion forums; Library literacy tool; and Computer skills tool. The table provides a concise overview of the tool itself, the problem areas (from Jones 2008) that it addresses, the rationale behind the tool, the evidence base for similar tools in the literature, and examples of similar tools from the database.

Tool	Heading	Rationale	Evidence base	Examples
Course-specific MOOC	Course match	- promote realistic expectations of what a course is like - ensure aptitude in area of study	Vilhavien et al. (2013)	semester long MOOC as entrance exam (Vilhavien 2013)
Generic	Course	- early exit is more likely	Murphy, Politis	standard: webpage

advice on flexible study tool	match	- if there is poor course match - most existing advice & tools are course/institutions specific - generic advice would help learners identify a mode of study that works best for them (ODL, part-time, etc)	and Slowey (2015) Nichols (2011)	with course information and student testimonials Kaplan and OU Aus pop-up "chat with an adviser"
Generic preparatory course	Preparation for HE	- prepares and teaches students to become collaborative, self-regulatory learners - students who take them have better rates of success subsequently - should cover essential skills, including information literacy.	Jones (2008) Thomas (2012) Mery, Newby, Peng (2012)	Tutorials: Pennsylvania State University "iStudy for Success" Course: OU UK Preparatory course University of Liverpool's preparatory course is compulsory
Readiness assessment quiz tool	Preparation for HE	- facilitate reflection on skills needed to succeed in higher education - inspire learner confidence in their (improved) ability	Farid (2014) Dray (2011)	University of South Africa
Workload calculator tool	Preparation for HE	- facilitate reflection on how much time the different parts of one's life take up, and how much time is available for study - contribute to time-management and realistic expectations	Nichols (2011) Raadt and Dekeyeser (2009)	Massey university "student workload calculator"
Generic orientation tool	Orientation	- familiarise learners with 'virtual classroom' - foster supportive peer relations - meaningful interaction with well-briefed staff and existing students - help form identity as a HE student	Thomas (2012) Nichols (2011)	"Balloon tour" VUE ASU, APU, video orientations Liverpool webevent
Support	Personal	- exercise for students to	Anagnostopoulo	Anagnostopoulou

mapping tool	circumstances	- map their support network (personal, institutional) early in the study lifecycle, which can then be referred to in times of needs	u and Parmer (2008)	and Parmer (2008)
Crowdsourced tips tool	Personal circumstances	- tips offered by other students undertaking formal courses of study, which could focus on how they overcame any challenges they faced combining study with oftentimes difficult personal circumstances, and so assist other learners in similar circumstances succeed in their studies	Thomas (2012)	Futurelearn "Guide to learning"
Adult learner 'space'	Community	- use as part of induction to help foster belonging among adult learners	Murphy, Politis and Slowey (2015)	Social media sites - esp. Facebook, Twitter, LinkedIn, G+
Discussion forums	Satisfactory academic experience	- prepare the student for collaboration, connected learning - interaction can also foster engagement with peers	Anagnostopoulou and Parmer (2008) Selwyn (2011)	most LMS/VLE
Library literacy tool	Preparation for HE/ Satisfactory academic experience	- correlation between students using the library, and persisting in their studies - in institutions where efforts are made to get new students to engage with the libraries, there is better academic achievement - particular evidence that using more library resources does not automatically improve a student's grade, but librarian-led instruction sessions tied to specific assignments is effective	ACRL (2010) Soria et al. (2013) Hurst and Leonard (2007)	Involved in postal loans (Leicester, New England, South Australia), linked to from virtual classrooms/ campuses (any LMS/VLE), provide video tutorials on how to use library services (Phoenix, Leicester), included in orientation video (APU), Writing Centre attached to library (Kaplan), on Facebook (OU UK).
Computer skills tool	Preparation for HE/ Satisfactor	- first level computer skills - second level cognitive	Jones (2008)	Pennsylvania State University: iStudy for success tutorial

| | y academic experience | - skill-set
- ability to engage in online communities and social networks, while adhering to behaviour protocols
- find, capture and evaluate information
- critical thinking skills | | (job skills)
Deakin - digital study skills.
University of Leicester - library specific digital skills tutorials

Online etiquette guides: Wisconsin, OU UK, Arizona State |

Table 6. Potential tools for development, drawing from literature analysis and tools database

Conclusion

This report sought to address the key review question of "what tools work?" in relation to supporting flexible learner success during the transition to higher education as part of Phase two of the Student Success Toolbox project. An analysis of existing literature was carried out, focussing on the three key areas of flexible learning, student success and supporting transitions, and particularly concentrating on evaluations of tools in the literature. This review was complemented by the creation of a digital tools database based on an analysis of the websites of twenty-two leading, 'flexible learning' institutions, which offers an overview of the current landscape regarding the use of digital tools to support flexible learner transition to Higher Education.

In order to analyse the overall question the analysis of the literature sought to answer, "what tools work?", five key review sub-questions were identified, based on the EPPI-centre (2010) guidelines for conducting systematic reviews:

1. Who are flexible learners?
2. What do we know about factors of student success?
3. How does what we know about supporting transitions relate to the above?
4. What connection exists between the literature and what institutions are providing to students?
5. What tools could usefully be developed in this project?

With regard to the overall question "what tools work?" it was found that there is a dearth of literature specifically relating to the use of digital tools to support flexible learner transition to higher education. There are very few tool evaluations in the existing literature, and also a particular lack of studies which offer a meta-analysis of more than one tool. Farid (2014)'s observations on the 'homemade' nature of many tools currently in use, and the small-scale

nature of much research in the area, holds true across a wide array of tools used to support new students.

Flexible learners and flexible learning

In the consideration of who flexible learners are, it was found that flexible learning has two separate but interrelated readings in the literature of *logistical* and *pedagogical* flexibility. Flexible learning is also heavily linked in public discourse to lifelong learning, or the participation of mature adults in further education (cf Flannery and McGarr 2014). As such, the learners targeted primarily by the *Student Success Toolbox* are those at the intersection of these conceptualisations; mature pedagogically- flexible learners who use logistically-flexible options to combine study with other responsibilities.

It was noted that questions have been posed, by works such as Selwyn (2011), about the extent to which flexible learning can truly be described as 'flexible' if students are logistically bound by the grammar of the university, and/or undertake solitary study rather than engage fully in the pedagogical sense of flexibility. It is concluded that, although it is possible to overstate and oversell the flexibility of flexible learning, this does not negate the real benefits that studying through flexible options can offer to learners pursuing a 'second-chance' at education, or continuing their professional development. Nor does the finding that some flexible learners prefer solitary study provide justification for not promoting critical and cooperative learning among all new students. Indeed, the benefits of flexible learning - of thinking both critically and cooperatively - to the individual learner, to the institution, and to wider society, are such that *every effort* should be made to encourage, and in many cases prepare new learners to learn flexibly.

This brings us back to questions of 'what is a flexible learner?' and should the learner conform to the system or the system to the learner. Must flexible learners become 'collaborative, contextual, connected', as Sims suggests, to have a satisfactory learning experience, or is there scope also for the learner who would rather have a more 'traditional' educational experience, albeit with the convenience that logistical flexibility can offer? Given the implicit presumption uptil now that it is the student must prepare themselves for the university, it should at least be acknowledged on the part of the university that the "flexible learner" is in many ways literally a "model student" construct, and the reality of the flexible learning experience is often messy and imperfect. Indeed, it may be the case that the standard flexible learning experience is messy and imperfect. That is not to say that collaborative learning and pedagogical flexibility is unimportant - it is important, and it should be a practical aspiration. However, revisiting the academic experience from the perspective of an imperfect and busy learner is arguably key to understanding and accommodating their needs, and so improving their chances of success. In the development of the tools in Phase Three of the Student Success Toolbox project, consideration of all avenues to student success must be a point of focus.

Factors of student success

On the matter of what we know about student success, this review sought mainly to identify the obstacles that inhibit student success, with the view to making these problem areas actionable. This is particularly important in the flexible learning context where, with student withdrawal as high as 80 or 90%, success is the exception rather than the rule. Comparing the literature on open and distance learning to the more synthesised literature on conventional learners, it was found that the five key factors identified by Jones (2008) as primary contributors to student withdrawal were also broadly true of flexible learners. These included; poor preparation for higher education; financial issues and personal circumstances; unsatisfactory academic experience; a lack of social integration; and weak institutional and/or course match resulting in poor fit/lack of commitment.

The analysis of the literature suggests that each of these factors provide unique challenges for flexible learners. Insufficient preparation for and unrealistic expectations of higher education and/or flexible study can cause problems for flexible learners, with particular challenges around aiding learners whose last educational experience may have been some time ago, and preparing all learners for self-regulated learning. An academic experience which does not engage the learners satisfactorily, for example with appropriately tailored course materials, opportunities to develop digital and information literacies prior to commencement, and possibilities for interaction in the virtual environments can also be a factor in early withdrawal. Isolation was found to be a particular problem for flexible learners, who have fewer opportunities for social integration with peers, and so a smaller network to draw from when encountering difficulties. Finally, a good course-learner match where the course relates to the learner's individual interests and future goals facilitates a successful transition.

Supporting transitions

Two main factors critical to facilitating successful transitions emerge - the facilitation of student *engagement* and the fostering of a sense of *belonging* during the transitional period. During the time between the 'thinking about study' period and the 'first weeks of study', students undergo a number of transitions, but primarily this process can be viewed as being one of becoming capable and resilient in a changing and challenging academic setting, or of failing to do so. Thomas (2012) focuses on the promotion of a sense of belonging that begins early in the transition process and continues across the student lifecycle. Equally important is the nurturing of engagement across the institution's services, developing the capacity of both students and staff to offer an engaging experience, leading to shared responsible for improving student engagement, belonging, retention and success. Those creating orientations for flexible learners should seek to familiarise the new learner with their online classroom, but also induct them into the community of learners in the university more generally. Ideally, this orientation would involve authentic representations of the student experience from existing students, whether they are live-cast or pre-recorded. And finally, it is essential that senior management in an institution is committed to nurturing a culture of belonging and creating the necessary infrastructure to promote student engagement, retention and success.

Connections between the literature and the reality

The analysis of the websites of twenty-two leading, 'flexible learning' institutions produced an expansive database of existing tools in use. Connections between these tools and the literature were found (see table 6 above), first and foremost where the reasons/factors for student withdrawal identified by Jones (2008) were used to cluster the tools in the database. The Appendix 2 document should be viewed for further examples of connections between the tools located for inclusion in the database of existing tools and the literature. These points of connection between the literature and existing tools in use aided in the identification of potential tools that could be developed in the Student Success Toolbox project.

Potential tools for development in the Student Success Toolbox project

The final sub-question addressed is that of what tools could most usefully be developed during Phase Three of the Student Success Toolbox project. A broad array of existing tools in use were reviewed, for example those related to preparatory courses, support-network mapping, and crowd-sourced tips from existing students. In table 6 above twelve potential areas for tool development are presented. These became the basis for the discussion and decision making necessary to choose a set of tools for development.

Summary

A number of key take-away points from the literature analysis emerge:

1. Every effort should be made to encourage, and in many cases prepare new learners to learn flexibly.
2. Interventions must begin early in the transitional period, and must focus on creating engagement and belonging.
3. Flexible learners withdraw from higher education for similar reasons to conventional learners, though they also experience a number of additional challenges around integrating study into already busy lives, and - particularly with open and distance learners - challenges around integrating with peers. Therefore institutions and/or programme teams will most usefully focus on preparing the flexible learner for self-regulated learning, and provide socialisation opportunities.

The learners we are particularly interested in here are the ones at the intersection of these two conceptualisations of flexible learning; mature active learners who uses flexible options to combine study with other responsibilities. The *Student Success Toolbox project* seeks to develop a number of tools that can be used with or by this group, to support new or prospective entrants as they develop the pedagogical and/or logistical skills they need to become successful flexible learners. It will look particularly to help address some of the challenges around fitting study into already busy lives, creating a student identity as a flexible learner, and difficulties mastering the self-regulatory approach to learning. As learners needs are likely to be as diverse as the learners themselves, a pick-and-mix approach to using the toolbox is recommended, depending on the individual learner's needs and preferences.

Interventions during the transitional period ought to be strategic and targeted in their intended outcomes (Simpson 2009), and that often it is less about the exact type of intervention or

approach than about the way it is delivered (Thomas and Hill 2013). While the former ought to be borne in mind, with regards to the latter a more systematic approach to the exact type of interventions targeted at new flexible learners would be beneficial to both learners and to the wider field of flexible learning provision. This is especially the case when those interventions have been verified to improve their chances of success As such those who create tools to facilitate successful flexible learner transition into higher education should document the process for the purposes of a) verifying the effectiveness of the tools developed, and b) feeding this information into the evidence base in the literature. This undertaking would be of substantial benefit to future research undertaken in this area, particularly research that seeks to produce materials of value to the growing cohort of flexible learners in Ireland, and around the world.

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