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## A bridge to success

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# Conference Papers

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## A Bridge to Success

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### Abstract

'Open Learning: Bridge to Success', a Next Generation Learning Challenges (NGLC) project, is a partnership between The Open University (OU) (UK), Anne Arundel Community College (AACC), the University of Maryland University College (UMUC), and the Massachusetts Institute of Technology (MIT) (USA). The grant has enabled these institutions to capitalise on the success of the OU's 'Openings' content by modifying it for students in the US with the aim of improving retention, learner capability, confidence and motivation through the acquisition of learning skills and core maths (Open University Openings courses, 2012). During a short timeframe (12 months) this has brought about the creation of versatile OER content that has drawn on the expertise of its partner institutions to develop.

The OU's 'Openings' courses have been shown to increase learner capability and confidence, encourage participation, result in student registration on accredited courses and contribute to greater progression and completion. The Bridge to Success (B2S) content aims to allow remediation and practice, accelerate time to completion and open up pathways to skills. Two Openings courses have been adapted for B2S (*Starting with Maths* and *Learning to Change*) and enhanced with activities as the courses are presented online (pre-assessment, diagnostic activities, formative assessments) to engage adults in the learning process. Course units have been presented and developed in the OU's free, standards-based LabSpace website (LabSpace, 2012) which allows all users to contribute to, edit and initiate material. The content is therefore not only available to targeted students in the US, but anyone browsing or searching the OU's content.

Pilot institutions in the US have adopted B2S content as the recommended route for preparation to college placement. The piloting process is monitoring, supporting and evaluating the impact of materials within the colleges involved. A program offering support material for adoption by colleges and instructors has been established so that those with no formal connection to B2S can utilise the content.

B2S is contributing to the American Graduation Initiative outlined by President Obama in 2009 which aims for all US citizens to obtain at least one year of post-secondary education or career training. The project expects to exceed its own targets and directly engage with over 3000 students and over 100 educators during the grant period.

### Keywords

Open educational resources, OER, student retention, elearning, mathematics, learning skills,

### Delivering OER to scale at the OU

The OU has a long tradition of delivering a diverse range of courses within the higher education curriculum in the UK to a large number of people. It was established in 1969 with

the aim of opening up higher education to all, regardless of circumstances, geographical location or qualifications and is currently serving over a quarter of a million students. The OU's OpenLearn website was launched in 2006 to provide a platform for material from OU courses as Open Educational Resources (OER), as well as acting as a hub for the University's free media content (OpenLearn, 2012). Now hosting over 600 units of learning materials, OpenLearn has been shown (McAndrew et al., 2009) to:

- Enhance the OU reputation
- Extend reach
- Contribute to the widening participation agenda
- Allow users to experiment with courses
- Enable the acceleration of technologies
- Be a catalyst for collaboration
- Act as a research base in OER
- Provide a means for recruiting of students

One of the three key elements of the OpenLearn website is the OU's LabSpace, an area that allows sharing and reuse of educational content. Using LabSpace to host the B2S courses enabled project partners to work collaboratively in shaping the content for a US audience, embellish the courses with assessment tools and provide a social media element (LabSpace B2S content, 2012). The content follows the OU's XML schema, which is rendered in different formats for example each

unit of the B2S courses rendered as Word document that is created and downloaded onto the user's device, or a printable HTML version combining different sections. Any videos created by the OU are also included in the resulting file (embedded YouTube videos are not) to ensure it is as dynamic a learning experience as the online version. The process provides students with a portable ebook or Word document that can be read offline.

As LabSpace is open to any user the B2S content is not only available to the US, but also to anyone browsing or searching the content worldwide.

### **The B2S content**

In the US, approximately 60% of first-year college students are required to take at least one developmental course, yet less than 25% of community college students who enroll in a developmental course earn a certificate or degree within eight years of enrollment (Bailey, T. and Cho, S., 2010). These statistics make student readiness for college a matter of great concern. At the same time, the impact of the Internet and online access have changed the way we interact and gain information, including the way learners choose to learn.

In order to help bridge the gap of student readiness, the B2S project has focused around two key subject areas: maths and learning skills. The courses were adapted from the OU's 'Learning to Change' and 'Starting with Maths' Openings courses. The OU's Openings courses are designed to develop study skills and build confidence around a number of core subjects. They have been shown to increase learner capability, encourage participation, result in registration in credit courses and contribute to greater progression and completion. As the OU primarily focuses on delivering higher education in the UK, the Openings courses translate well in the project's aim to support first-year college and university students in the US who have little or no previous academic qualifications.

The focus of the maths course is to strengthen students' core maths skills and general understanding of maths, thus better enabling them to move into college-level courses and complete a certificate or degree. In the opening unit of the now renamed *Succeed With Math*

course we ask the following questions, which gives some insight into the flavour of the course and optimism and confidence it endeavours to impart:

1. *Were you somewhat traumatized by math in your previous education? Are you convinced that you can never understand it? Well, you can! We are all “hard-wired” at birth to do math. If some of your wiring doesn’t work as well as it could because of your previous experience, then this is the place for you.*
2. *Were you just bored with math previously? Couldn’t see the point? Succeed with Math is full of very practical examples that you’ll be able to use in real life.*
3. *Are you rusty in math and need to brush up? In Succeed with Math, you’ll be able to explore exactly those areas you’d like to review, skipping or skimming the parts you don’t need.*

(Succeed with Math, 2012)

Equally, in the opening unit of the renamed *Learning to Learn* course, students are presented with the following: *Learning to Learn helps you think about what you can do already. It then uses this to build your confidence in your abilities. The course uses a mixture of personal reflection, examples (including three real-life case studies), and ideas about how we learn. This combination equips you to move your life forward* (Learning to Learn, 2012).

### **The B2S pilots**

The B2S content is currently being introduced in pilot programmes throughout the US in mixed learning environments: face-to-face instructor-led, online instructor-led (open labs with a self-paced format) and a hybrid of the two. As well as two of the project’s partner institutions offering Learning to Learn and Succeed with Math (UMUC and AACC), there are currently 12 other institutions piloting the B2S content in Maryland State to an expected 2000 students.

They are piloting the course content in a number of ways:

- Added-value course material in addition to the already existing credit and continuing education curricula.
- Standalone course material offered in formal and informal class settings to support students identified as needing developmental maths and reading courses.
- Incorporated into student success and retention initiatives e.g. academic success courses, first-year programmes for at-risk students.
- Utilisation through online tutoring programs accessed via statewide library systems and formal tutoring programs.
- Incorporation into course curriculum with Adult Basic Education Programs and Workforce Development Programs to support movement toward vocational and preparatory GED/High School Diplomas.

The B2S project is assessing student access, use and effectiveness of content. Each student is assessed using a pre- and post-questionnaire to determine their level of growth and by targeting identified students we will track the impact on individual student enrollment and retention. In addition the instructors and facilitators of the pilot programs evaluate the course content, solicit student feedback, and observe mastery level of subject matter by their student participants.

The pilots bring use of B2S material to specific student populations and so provide a good opportunity for researching the way in which the content can be used. As open courses they can also be used by anybody without registration. Such use cannot be tracked in such detail however it is still possible to understand overall behavior through analytics and visible participation in online activities and voluntary completion of assessments. At this early stage of

the project there are already indications of the material spreading with approximately 30% of access to the materials outside the US,

The use of OER to support instruction is a relatively new approach for many instructors and institutions. B2S provides not only OER themselves but also promotes the use and potential of high quality OER. Along with other projects funded by in the US by NGLC showing success, this indicates that OER will be part of the landscape of the future in two- and four-year institutions in the US

### **Adapting UK content for US students**

In order to localise British courses and to bring them in to line with the US curriculum, the project team had to make a number of modifications to the content:

1. Americanising text and grammar
2. Localising examples and case studies
3. Embellishing what was previously texted-based content with visual and audiovisual media to improve the elearning experience
4. Restructuring the content into easy-to-read chunks
5. Adding formative assessment exercises to:
  - encourage self-reflection
  - allow instructors to view students' progress, and
  - for the B2S researchers, to examine progression through the content.

The content has been more heavily modularised than it was when presented on paper and enhanced with activities (pre-assessment diagnostic activities, formative and post assessments) to engage adults in the learning process.

Learning to Learn encourages students to consider personal change through reading, reflecting and synthesising their understanding of the course content. Some of the activities encourage them to develop a deeper understanding of the concepts presented. Students are asked to write down their thoughts after reviewing the written material or the video material. A 'learning journal' can be created as they progress through the course to maintain a history of their written responses.

The design philosophy behind Succeed with Math is that maths, as well as being a fascinating subject, underpins practically every aspect of modern life. The online course includes case studies, activities, puzzles and historical snapshots as well as mention of more modern developments. There are also audio and video clips, online maths games and quizzes. Two learning tools specific to this course are 'Pencasts' (animated PDF files) and an online calculator.

### **Ensuring quality and accessibility after adaptation**

Whilst both courses were Americanised, most of the localising and embellishment to make the courses into an online endeavour were directed at *Succeed with Math*. In making the content fully available online, particular attention was also paid to the accessibility of the course. Evaluations were undertaken by the Institute of Educational Technology (IET) at the OU and form part of core business for the Institute as part of their quality assurance commitment to the University. Evaluations are conducted in order to:

- Uncover learning difficulties that students are likely to encounter related to the form and content of online materials
- Identify which (if any) features of the course are causing difficulty and suggest the reason(s)

- Suggest how these might be changed to support students more effectively
- Identify elements or features that work well and should stay the same
- Examine the time it takes to complete activities as for some students the time they are online is not the time they are working on the materials
- Understand skill acquisition when and if this has occurred in the course.

Three separate evaluation activities were undertaken by IET on the B2S material:

1. Expert evaluation of the usability and accessibility of the courses in LabSpace, the recommendations from which resulted in a number of changes across the technical infrastructure of the website to improve it for all projects. Educational materials produced by the OU in the UK comply with British standards of accessibility; the B2S material also needed to comply with ADA standards (Americans with Disabilities Act).
2. Developmental testing of the Succeed with Math materials (at time of writing, this activity is in progress).
3. A 'Learning Design' assessment of converted materials.

These are explained in the table below.

**Table2. Evaluation activities: process and recommendations**

<b>Evaluation</b>	<b>Process</b>	<b>Recommendation(s)</b>
Expert evaluation of the usability and accessibility of <i>Learning to Learn</i>	Expert evaluation gives very rapid and experienced feedback. It is undertaken by someone who is experienced in HCI (Human Computer Interaction) and includes the use of different software that disabled students may use in their studies e.g. JAWS, Dragon Naturally Speaking and Read and Write Gold. Usability and accessibility experts looked at <i>Learning to Learn</i> from the general student perspective.	For usability recommendations, these ranged from improving font colours and text size, to text alignment, navigation and style issues. For accessibility recommendations, these ranged from improving the HTML editor (used to receive student feedback) and background styles to use of italics and image descriptions.
Developmental testing of <i>Succeed with Math</i>	Developmental testing provides more in-depth interpretations of how learners are responding to materials and insights into how materials might be changed using a mixture of qualitative research methods. For B2S, the <i>Succeed with Math</i> course is being assessed unit by unit using students from a pilot running at AACC. Every fortnight, students are being asked to complete a short survey. If follow-up interviews are required, these will take place at the end of the pilot.	Developmental testing is still in progress.
Learning Design analysis	This application to the course design process has been a focus of a number of research projects at the OU in recent years and draws on the increasing creation of courses as elearning material. For course designers, bringing elearning into their courses has made the process more complex (Cross, S. 2009). The Learning Design assessment of the <i>Learning to Learn</i> and <i>Succeed with Maths</i> courses was undertaken early on in the project to inform the remake design process and to make it easier to see how the new online version should interpret and integrate	Key recommendations of the Learning Design analysis focused on the embellishment of the course content to ensure that student motivation, reflection on learning and progression were maintained throughout the courses and to especially consider that some students would be studying without face-to-face tutor guidance.  A further Learning Design analysis of the two courses is currently underway to examine how they have changed after

	key aspects of the original course. The Openings courses were not only provided as text-based endeavours with online components, but with personal tutor support.	adaptation.
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The developmental testing of *Succeed with Math* described above overlaps with the research strand of the B2S project. Research is an important element in B2S addressing themes of content adaptation, use of social media, pilots and institutional use, analytics and metrics, project team reflections, the student experience, and the student outcomes. These themes will be reported in a series of reports from B2S as it moves from the stages of content revision and production to piloting and data gathering.

**Instructional support (educators and students)**

The content can be made available as a course to students who have registered for a credit or continuing education course. The content can be customized and delivered within an institution’s learning management system (such as Blackboard and Desire2Learn) or can be accessed directly from the Bridge to Success website (B2S project website, 2012). All of the content (or specific modules) can be used to support a first-year experience program, a jumpstart program, or other programs designed to promote student success and retention at two- and four-year institutions. The content can be made available to students enrolled in specific courses during a class on campus, in a computer lab or online (or assigned as homework). Information about these resources can be distributed to high school seniors or prospective students at orientation sessions, by advisors, in testing/tutoring centers, on a college’s website or schedule of classes or by other means to promote the use of these materials. All instructors are provided with an Instructor’s Toolkit which explains the background to the project, the specific elements of each course, how it is structured and use of forums and quizzes (Bridge to Success Instructor Toolkit, 2012). Equally, students also have access to a Student’s Toolkit which is designed to do the same thing but from the student’s perspective (Learning to Learn Toolkit, 2012).

To support the adoption and use of B2S content, a professional development series has been developed for educators and adopting institutions. The webinars (and other professional development opportunities) promote the best practice use of OER. The webinars are designed to showcase best practices for teaching at-risk students and to promote student success initiatives at two- and four-year institutions. These webinars are free and open to all (Bridge to Success webinars, 2012).

**Conclusion**

Developing the B2S material has been a very positive experience demonstrating how open content can provide a good basis for collaboration. In initial stages content could be demonstrated, editing processes transferred and changes made on an equal basis. Once the content was released we have seen great enthusiasm for the piloting process with innovations in use rapidly transferring between partners and pilot sites.

We are now starting to gather direct feedback from learners that we hope will enable us to confirm the value of open courses in supporting the transition into higher education and supporting those who might struggle with existing approaches. Research is important to provide evidence and models of ways to use open content and build on the great interest in the B2S courses.

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