



Transition to HE STEM programmes



Chris Keenan
Learning and Teaching Fellow
Bournemouth University

Two transition based one year projects for National HE STEM SW region

The “Transition to HE STEM Programmes” aimed to:

Explore and enhance the transition and induction experiences of widening participation students starting on STEM programmes in the SW region in order to inform the development of more inclusive transition support and induction programmes that meet the specific needs and expectations of these students.

The “Role of Peer Learning on HE STEM Programmes” aimed to

Provide an overview of the range of PAL models in SW region STEM programmes and to explore the possible benefits of PAL 'online' with a view to disseminating and encouraging more widespread adoption of PAL within STEM disciplines across the region.

This presentation will

- Provide a brief overview of the Transition to HE STEM programmes project
- Consider what the particular issues might be for new first year STEM students (based on our data)
- Focus on the Transition guidelines and provide example key findings and recommendations

Participants included

- STEM Ambassadors
- Meet the Scientist Ambassadors
- PAL leaders
- Speakers and delegates at regional seminars
- Plus: input and links with other National HE STEM programmes

Particular Issues for new first year STEM students

- Writing in STEM disciplines
- The need to produce extended pieces of writing and working with text based resources
- Fear of labs
- Sense that you're working harder than students in other subjects
- Dealing with social aspects of university life
- More contact time, lots to get to grips with from day one
- Work load and time management
- Reduced abilities in time management
- Maths and physics if they have not been taken at A level
- Lack of one to one pastoral support
- Uncertainty about employment opportunities
- Lack of awareness of course and career options
- Over specialisation at A level
- Cost of university
- Difficulty of science subjects
- Lack of preparedness for university
- Unhelpful course information and lack of appropriate guidance
- Lack of confidence in asking for help and finding tutors intimidating
- Shyness

Outputs included

- 4 Regional Seminars
- Regular Briefing papers
- Guidance notes, eg setting up a maths café
- Case studies, eg experiences of STEM Ambassadors, PAL leader perspectives
- Case studies looking at moving practice to policy
- Set of institutional guidelines
- Plus: built on findings of the What Works: Student Success & Retention HERE! Project

Transition Guidelines

- Key reasons for leaving: poor initial choice of course, dissatisfaction with the academic experience, personal problems, lack of clear routes and strategies for coping
- Important factors for staying: sense of belonging, importance of positive academic experience, relationships and motivation, perseverance

Ambassador recommendations

- Arrange for new first years to meet final year students at open days
- Ensure students are really clear about course content
- Provide extra support for maths, chemistry, etc
- Take it slowly in the first year and teach the basics for difficult subjects
- Ask students at the start of the course what they want to find out about... tap into their curiosity
- Have an informal drop in coffee session after 5pm a couple of times a week run by students, PhD students, where first years can ask their peers about aspects of the course they don't understand
- Use staff good at engaging people in the first year.
- Etc, etc, etc...

Examples of good transition practices

- Maths support including maths cafes
- Developmental pre-enrolment transition resources and websites
- Setting up and involvement in communities of practice for STEM outreach and WP practitioners (see: <http://www.hestem-sw.org.uk/project?id=9&pp=442>)
- Use of transition videos <http://www.hestem-sw.org.uk/project?id=24&pp=184>
- Aspiration-raising seminars
- Special events for non traditional entrants
- Use of Peer Assisted Learning and other interactions with higher level students <http://www.hestem-sw.org.uk/project?id=13>
- Introduction to learning in HE
- Re-fresher week during first term
- Portfolio-type assessment with repeat opportunities (that reduce repeating opportunities as academic skills become more established)
- In-curriculum teaching on research, note-making, writing skills

Example key finding and recommendation (1)

Our case study participants often commented that students studying sciences are goal driven

Include aspiration raising sessions during the introductory/induction period. A seminar showing snippets of cutting edge advances in the discipline area, or examples of final year projects, will help students over the “bumpy bits” of the first year curriculum.

Example key finding: and recommendation (2)

Our project participants all commented on the importance of settling in, feeling part of things, developing academic confidence, needing to feel that they belonged.

Participants offered a number of ideas for how this can be achieved including:

- supportive peer relations through schemes like PAL, curriculum interventions like field trips, etc

- meaningful interactions between staff and students, eg setting up maths cafes

- building confidence and identity as successful learners, eg through careful consideration of starting points, pastoral support, etc

- provision of an HE experience which is relevant to interests and goals, and in particular, encouraging students to be aware of the range of careers that will be available to them

Further information:

Chris Keenan ckeenan@bournemouth.ac.uk

Or see the National HE STEM SW website:

[Transition](#)

<http://www.hestem-sw.org.uk/project?id=9>

[Peer Assisted Learning](#)

<http://www.hestem-sw.org.uk/project?id=13>

[STEMming the Doubts, enhanced transition and induction to HE STEM Programmes](#)

http://www.hestem.ac.uk/sites/default/files/6068_hestem_stem_the_doubts_aw_web.pdf

[Journal of Learning Development in Higher Education Special edition](#)

www.aldinhe.ac.uk (publication date mid-November 2012)

Brief bibliography

Higher Education Retention and Engagement <http://www.hereproject.org.uk/>

Keenan, C. (2008) *Stepping Stones 2HE a model for student retention IN Student Retention Programs in Higher Education*, Crosling G., Thomas, L. & Heagney, M. (Eds), Routledge Farmer

Keenan, C., (2011) Pre-arrival IN Morgan, M (Ed) *Improving the student experience: The essential guide for universities and colleges*.

Thomas, L. (2012) What Works Student Retention summary report http://www.heacademy.ac.uk/assets/documents/what-works-student-retention/What_Works_Summary_Report.pdf

Building student engagement and belonging in higher education at a time of change: a summary of findings and recommendations from the What Works: Student Retention and Success Programme (available at http://www.heacademy.ac.uk/resources/detail/what-works-student-retention/What_Works_Summary_Report).

Compendium of Effective Practice in Higher Education Retention and Success (available at http://www.heacademy.ac.uk/resources/detail/what-works-student-retention/Compendium_Effective_Practice)

A first-year experience literature review also provides access to an exploration of the literature (available at http://www.heacademy.ac.uk/projects/detail/litreview/lr_2006_harvey)

The National HE STEM website (<http://www.hestem.ac.uk/>) where a simple search for 'Transition to HE STEM' or 'First Year Experience' will deliver a wealth of ideas.

The National Union of Students' student engagement pages <http://www.nusconnect.org.uk/campaigns/highereducation/student-engagement/>

What Works: Student Retention and Success change programme <http://www.heacademy.ac.uk/what-works-retention>