Enhancing the Psychology STEM Student Journey

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Psychology is a valuable Science, Technology, Engineering, and Mathematics (STEM) discipline, but one which could do far more at communicating its value to the wider public. This paper discusses how popular initiatives, such as The University of Northampton's STEM Champions programme, enhance Psychology's STEM membership, while increasing public engagement and participation. These opportunities also enhance the Psychology STEM student journey, by helping them to develop employability-related skills and allowing them to obtain valuable experience in the environments that they may later be working in.

Engaging the Wider Public in Psychology

As the scientific study of individuals, the mind and behaviour, Psychology contributes greatly to a number of other disciplines and has a far reaching impact on all aspects of our lives. As a problem-solving discipline, Psychology sits firmly within the Science, Technology, Engineering and Mathematics (STEM) remit. Unfortunately, it is often not recognised as a STEM discipline, or at least not consistently across different bodies (American Psychological Association, 2010; Sage, 2010). Therefore, to improve Psychology's standing as a core STEM discipline, it is up to those working in the area to ensure that Psychology has a clear STEM membership and that they communicate the value and application of this scientific knowledge to the wider public (Hill, 2015).

Scientific issues are becoming of greater interest to the wider population, due to the continued need for high quality Psychological research, methods and techniques to address societal problems. However, the scientific basis and application of Psychology is also not always well understood (American Psychological Association, 2010). Psychologists have an obligation to work collaboratively with those who might benefit from this work, but could do more to engage the wider public (Leshner, 2003). Research suggests a lack of public engagement in Psychology is often due to the limited recognition received for this type of work, as well as restricted research and funding opportunities (Royal Society, 2006). Importantly, intentions to engage in public engagement activities are based on positive perceptions of engagement activities and participation by others (Poliakoff & Webb, 2007).

One important initiative which aims to maximise public engagement and participation opportunities is the National STEM Ambassador programme. Managed by local STEM Learning and STEMNET contract holders, the programme provides professional recognition and training for those wanting to involve young people in STEM education and enthuse them about STEM career opportunities. Through a range of learning centres, networks and clubs, the programme provides a network for those interested in STEM to connect with local schools, Further Education (FE) establishments and employers. As a key milestone in the STEM student journey, Higher Education (HE) institutions are now becoming more involved in raising STEM awareness. However, these activities cannot be viewed as extra curricula and must be central to the student journey.

The University of Northampton STEM Approach

At The University of Northampton, STEM is promoted through a unique, inter-disciplinary STEM Steering Group, the cross-university STEM Champions Programme, and subject-specific STEM Leaders. The STEM Steering Group (SSG) brings together staff STEM Leads from across the university and ensures that each discipline has a clear STEM membership. The SSG coordinates STEM activities and provides an important point of contact for staff, students, schools and local community groups interested in STEM. As well as promoting opportunities for staff and students to obtain National STEM Ambassador recognition, the University also has its own STEM Champions programme. This ensures that STEM activities are championed throughout the university and that staff and students have access to a dedicated skills training programme.

This popular STEM Champions programme allows staff and students to undertake training with the support of others within the network. STEM Champions can then volunteer to participate in a coordinated programme of inreach and outreach events involving schools, FE and HE institutions across Northamptonshire. These events help share the value and application of STEM disciplines with the local community, while widening participation and enhancing the relationship between the University and the local community. This programme not only ensures that STEM Champions identify strongly with the University, but also provides students with key employability skills, such as leadership, communication, and self-motivation (Sinclair et al., 2014).

This year, a funded Student STEM Leader pilot scheme has also ensured that university students are involved in the co-creation and management of STEM events and activities. Each Student STEM Leader works closely with the Staff STEM Leader for their subject, in order to deliver tailored training and development programmes for STEM Champions within their discipline. Although not every student STEM Leader engaged fully with the role this year, the scheme identified the importance of empowering students as partners within STEM provision and strengthening the student voice within the STEM journey. For example, student-led STEM Champion recruitment drives and training sessions proved to be extremely successful.

Reflections on Psychology STEM Provision

A recent increase in Psychology STEM Champions has been attributed to a Champion recruitment drive, the appointment of a Psychology student STEM Leader, and the development of Psychology-specific STEM training sessions. For the first time, Psychology has also been represented in over twenty STEM inreach and outreach events, including a recent ‘Girls into STEM Day’, which involved over 100 eight year old pupils from local primary schools. Champion-led Psychology activities included building complex play-doh brain models, creating human displays of synaptic transmission and explaining how the visual system works using impossible objects and visual illusions. There remains scope to develop more technologically led problem-solving activities which aid psychological enquiry.

The STEM Champions programme has provided Psychology staff members with a unique and exciting opportunity to introduce and enthuse others about the discipline without curriculum restraints. This enhances teaching and learning provision, by enabling staff to update their subject-specific knowledge and to develop innovative learning techniques for their teaching provision. Despite providing an excellent opportunity for public engagement and being viewed positively by colleagues, more work needs to be done to increase staff participation in STEM activities. While this

limited engagement may be due to funding or recognition (e.g. Royal Society, 2006), it is also possible that members of staff are unaware that they also can receive recognition as a University STEM Champion or National STEM Ambassador.

Likewise, the STEM Champions programme provides Psychology students with essential experience in the environments that they may later be working in. STEM Champion feedback has been continually positive, with many referring to the importance of working with young people and the opportunity to help others, which Psychology undergraduates often view as a valuable work-related skill (Bromnick & Horowitz, 2013). Students, therefore, use their STEM experiences to define their career paths and clarify career options, while becoming positive representatives for the university. Challenges remain in engaging students throughout the academic year, particularly during the end of term or holidays, but involving students in the design and construction of STEM activities appears to be successful.

Conclusion and Future Directions

Psychology is an important and impactful STEM subject, but more needs to be done to promote its value to the wider public. STEM initiatives, such as The University of Northampton's STEM Champions programme, provide important public engagement and participation opportunities. These initiatives not only promote STEM in HE contexts, but reinforce Psychology's STEM membership and integration with other disciplines. Additionally, they improve teaching and learning by enhancing professional practice and student employability prospects, but must involve student representation. While some small scale work is being done to track individuals throughout their STEM journey, future work should determine the long-term impact of STEM initiatives, including how best to engage and inspire the Psychologists of tomorrow.

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Information about the national STEM Ambassador scheme can be found at:
http://www.stemnet.org.uk/ambassadors/

To find out more about STEM at The University of Northampton please see https://mypad.northampton.ac.uk/stem/ or follow: @STEMatUN on Twitter.

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