Empowering Bioscience students to develop employability skills through volunteering – Voices of experience

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Introduction

Gaining employment is a priority for the majority of students (CBI 2009) particularly with the downturn in the economy and saturated job markets for both graduates and experienced workers, candidates have to find new ways to distinguish themselves to potential employers. The change in employer focus from good degrees to good degrees *plus* additional, softer skills and attributes, means that Higher Education Institutions (HEIs) are having to review their provision to students. Many HEIs have a diverse range of students from both the UK and overseas, all with varying needs and looking for careers in a range of sectors. With each career sector having its own individual expectations and requirements, developing a flexible yet structured approach to employability is pivotal to sustained success for all HEIs. With students recognising the competition in the workplace the desire to develop skills and gain practical experience is increasing. Therefore practice based applications such as placements, internships and volunteering are becoming increasingly popular among students as a recognised as way to help to develop practical work experience and gain a step on the career ladder.

This research stems from a HEA funded Teaching Development Grant project. It aims to investigate and promote volunteering as a means to maximise employability skills for science or health related undergraduate students', in particular biomedical science students, who increasingly find it difficult to obtain relevant placements or opportunities. There are opportunities in existence which can be utilised or developed further which use subject specific knowledge and clinical skills but these are currently not exploited or developed within this North London university. Placement is integral in some health programmes for all students (eg. Nursing, clinical physiology, etc) however locally for biomedicine it is restrictive and thus highly competitive. Students recognise theoretical understanding and practical skills as essential to employability but hold frustrations at the placement limitations and the limited opportunity to apply these theoretical understandings in a practical way.

The research questions within this project are exploratory in nature. They aim to explore:

- what the term 'employability' means for biomedical students and whether this is different across levels 4, 5 and 6
- the benefits of undertaking volunteering activities from the perspective of students and employers
- whether there are differences perceived by employers in skills developed in undertaking placements or volunteering activities.

The outcomes of this project will inform HEIs whether there are there specific volunteering routes to enable health or biomedical students use their specific knowledge and develop their skills and how this can be embedded within the programme of a university volunteering system.

Context

The current economic climate – effects on graduate recruitment

Practical experience has a vital role in aiding employment with High Flyers' Graduate Market Report (2012) indicating that graduates with no work experience were unlikely to be offered graduate employment.

The Future Fit report (2009) by the CBI also supports this, saying:

> *Although there are other valuable ways for students to acquire employability skills, a student who undertakes a placement or internship is immersed in the experience of being in a real workplace, finding out what it's like working at graduate level. This can help them understand more quickly what skills they need and how to apply their learning.*

There were an average of 48 applications per graduate vacancy in the latest 2011 High Fliers findings. Because of the high volume of applications, employers are increasingly looking for additional ways to select the right applicants for their roles and this has led to the identification of "employability" skills, such as commercial awareness, communication, problem solving, numeracy, literacy and IT skills (see HEA 2012).

Although the number of roles available within the top graduate recruiters has started to steadily increase again, High Fliers (2012) Report shows that anticipated graduate recruitment in is still 6% behind that in 2007. Additionally, this does not take into account the fact that graduation numbers have increased and a further 50,000 new graduates were expected to graduate in 2012 compared to the same figures from graduation 2007.

Volunteering opportunities

There are multitudes of general volunteering opportunities within universities but not necessarily focussed on health or bioscience. Biomedical science degrees do not necessarily have automatic professional recognition requiring appropriate experience and submission of the required portfolio for registration with the Health and Care Professions Council (HCPC) (NHS, 2012). The opportunity to obtain employment to secure this is also highly competitive with the potential for some students to seek other career routes. When considering the 'work experience' opportunities offered at the case study institution it was found that a range were offered to students, although students were not always aware of the offering available. Fig. 1 identifies the opportunities available, with some sitting firmly within the curriculum, some outside, some within the institution and others outside.
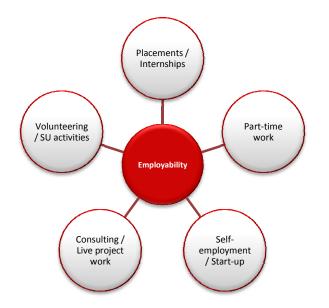
Fig. 1 Range of work experience opportunities available

This project focuses on the opportunities volunteering can have for students in helping to develop their employability skills, particular when avenues such as part time work (in a discipline related field) and placement and internships are fiercely competitive.

The engagement of students within volunteering overall is not specifically recorded nor the effect of this on skills development. However, volunteering has been recognised as enhancing the student experience and aiding the development of employability skills with £27 million invested by HEFCE and the Home Office into the Higher Education Active Community Fund (HEACF) in 2002. This fund merged with the Teaching Quality Enhancement Funding (TQEF) in 2006 but with the intention to support the growth of volunteering opportunities within HEIs.

In the literature estimated student volunteering rates range from 15%[1] to 63%[2] with conservative rates are based on questions about 'volunteering' and/or charity work, while the higher rate refers to students 'helping out' (Holdsworth 2011). The data is wide ranging due to the term volunteering and how this is defined and applied although a definition commonly applied is

> *[...] an activity that involved spending unpaid time doing something that aims to benefit the environment or individuals or groups (Compact 2009).*

Student volunteering can be separated into activities associated with students' courses or future careers and those activities that are unrelated. Roughly one-third of volunteering activities were course or career related compared to two-thirds that were unrelated. Study or career related volunteering was more common among medical and social science students, and among non-traditional students (i.e. mature students from less advantaged backgrounds and studying at lower tariff HEIs).

In Holdsworth's (2011) research looking at students that volunteer, she identified that volunteering rates were highest among students studying medicine/dentistry and social sciences, whilst the were lowest for those in the broad subject grouping of physical sciences (including maths, computing and

engineering), architecture and planning and some arts programmes. She also found that students at higher ranking universities (ranked by entry tariff points) reported higher volunteering rates than those at other universities. Students at middle ranking universities reported lowest volunteering rates.

Exploring the types of students themselves, she found that volunteering rates were higher among some minority groups: ethnic minority students, students with a disability, and those with caring responsibilities. While gender and socio-economic background were associated with variation in volunteering rates, the differences were small. The higher rates of volunteering among students from minority ethnic groups appears to be associated with both religious identity and the fact that these students were more likely to get involved in other forms of student extracurricular activities.

Methods

This methodology is based on action research which comprised three cycles of assessment, intervention/action and evaluation. The first cycle involved investigating the range of volunteering opportunities locally (within and outside of the university), relating to health disciplines. This was in partnership with the main researcher (a lecturer) and a year 1 student group (BSc Biomedical Sciences, n=96). The exploration was through desktop research within the community in north London and locally to the university. This also led to developing links with organisations with one in particular taking prominence. Further cycles looked at levels 4, 5 and 6 students' perception of employability and employability skills. The data yielded both qualitative and quantitative data.

In addition biomedical employers' from local hospitals providing placements to students were asked about perceptions of volunteering and its relevance professionally. Ethical approval was first obtained from the local Ethics Committee and full confidentiality and anonymity was maintained. The primary tool employed was that of self-completion (online and in person) questionnaires were used to explore students (levels 4, 5 and 6) (n=234) and employers perceptions (n=8).

This involved a series of statements about employability with Likert scale responses. There were three further open ended questions asking about career aspirations, how students evidence their employability and perceptions of engagement with volunteering work. Employers were sent a self-completion questionnaire using open and closed questions asking about their perceptions of volunteering in general, volunteering they might consider as relevant to biomedical science students or when recruiting, and the skills students might develop which would be of use. Employers were also asked if they engaged in any volunteering and why.

Finally students engaging with one specific volunteering activity (n=4) were asked to complete diaries or reflections of their experiences of volunteering and the skills and insights they developed. The volunteering activity involved biomedical students establishing contacts with the Anthony Nolan Trust in order to establish a society at the university to raise awareness and get involved in activities. Students had to undergo training from the Trust and follow the Trusts guidelines. These students held fundraising and awareness raising events within the HEI and outside in the local community.

Findings and Discussion

Unpacking 'employability'

The questionnaire data presents a variety of perceptions which are quite similar across Levels 4, 5 and 6.

Item/Question	Percentage Agree		
Employability is…	**Level 4 (n=101)**	**Level 5 (n=96)**	**Level 6 (n=37)**
Graduates getting jobs	62%	53%	69%
The responsibility of students	72%	75%	66.7%
About citizenship	26%	32%	25%
The job of university	37%	55%	55%
The involvement of many people in the curriculum (services such as careers, students etc)	68%	70%	77%
Extracurricular activity	45%	60%	44%

Table 1. Responses to the statements 'I think employability is…..'

From these findings students appeared to take ownership of their employability acknowledging it as their responsibility, although they did see it as involving many within the curriculum, demonstrating the strong ties of curriculum and employability as demonstrated in literature (HEA 2012). For the majority of these students, across all levels, they felt employability was about getting a job, although it is clear to see from the figures that not all agreed. In Harvey's work (2003) he suggested that employability was not merely 'getting a job'. He proposed, 'employability is more than about developing attributes, techniques or experience just to enable a student to get a job, or to progress within a current career. It is about learning and the emphasis is less on 'employ' and more on 'ability'. In essence, the emphasis is on developing critical, reflective abilities, with a view to empowering and enhancing the learner' (2003: 3).

Level 4 (n=101)	Level 5 (n=96)	Level 6 (n=37)
Covering key skills	Skills through volunteering	Learning about the world of work
Gaining skills and experience through routes such as volunteering	Covering key skills	Getting a work placement
Learning about the world of work	Getting a work placement	Creating a learning environment which enhances students' skills

Table 2. Three highest ranking aspects related to employability

Table 2 shows the three highest ranking aspects of employability identified from students across levels 4, 5 and 6 with similar themes across all. Clearly key skills were considered on importance, less so in the final year, when these competencies may have been considered to be 'gained', learning about the world of work and having some element of hand on practical experiences. Only in the final level of undergraduate study did students highlight the interplay between the curriculum design and learning environment and their employability skills.

Of particular concern, raised in these findings was the ways in which students evidences their employability skills, as outlined in Table 3. From the responses gained the majority felt these were evidences through their qualifications, whilst CBI (2009) literature shoes that employers are looking for students to articulate competencies beyond their degree.

Level 4 (n=101)	Level 5 (n=96)	Level 6 (n=37)
No response 30%	No response 30%	No response 48%
Education, qualification and certificates (20%)	Education, qualification and certificate (22%)	Showing interpersonal skills (10%)
Extra curricular work (eg. Volunteering, charity work) (17%)	References from employers/academics (12%)	At the interview/application form (10%)
Showing interpersonal skills (10%)	Curriculum vitae (10%)	Education, qualification and certificate (8%)

Table 3. Responses when asked about how they evidence their employability the main responses

Volunteering engagement	Level 4(n=101)	Level 5 (n=96)	Level 6 (n=37)
YES	34%	26%	34%
Reasons for volunteering	Altruism/'to give back' 10%	Feel the need to help (4%)	Altruisms/help others (10%)
	Skills and experience it offers (10%)	Gain wider experiences (3%)	Gain skills (5%)
	Personal reasons (ie build confidence)	Employability skills (3%)	
Where	Local organisations Large national charities GP/local hospitals	Local organisation School	Charity shops Caner day centres Local hospitals

Table 4. Students experiences, motivations and place of volunteering

When considering why individuals volunteer Clary and Synder (1999) offer the following typology:

Function	Motivation
Values function	the person is volunteering in order to express or act on important values, such as humanitarianism and helping the less fortunate
Understanding function	the volunteer is seeking to learn more about the world and/or exercise skills that are often unused.
Enhancement function	the individual is seeking to grow and develop psychologically through involvement in volunteering.
Career function	the volunteer has the goal of gaining career-related experience through volunteering.
Social function	volunteering allows the person to strengthen one's social relationships
Protective function	the individual uses volunteering to reduce negative feelings, such as guilt, or to address personal problems

Considering our student responses the most common reason was one of altruism identified in aspects such as values function. Surprisingly, 'employability skills' featuring relatively low although students did see and added bonus of skills development identifying with aspects of the enhancement and career functions but where primarily motivated by giving back and helping others, as expressed by these students:

'*I do this because I was to make a difference and help people who cannot help themselves*' (student OT)

'*Personally, volunteering enhances my confidence, my motivation to pursue my career within the health profession and enables me to aid people who are unable to help themselves*' (student TJ)

This is a similar to the story Holdsworth's (2011) findings as she found the most common reason given was "volunteering to help someone or their community", with more than two-thirds of students agreeing with this statement. Employment-related reasons were more important for students from non-traditional backgrounds. Younger students, those studying physical sciences, and men were more likely to agree that meeting people was a reason for getting involved.

Benefits of volunteering

Four students completed diaries which varied in level of reflection and detail. The key issues which emerged were recognising key achievements, approaching problems, personal gains and emotional investment. Positive effects evident: personal gains, altruisms, and community engagement, problem identification and solving demonstrating resilience and in some instances creativity.

Other benefits identifies included:

- Learning new skills
- Building confidence and self esteem
- Establishing new friendships
- Making personal networks
- Feelings of worth (contributing to society)
- Developing a better understanding of themselves
- Enriching other peoples lives.

Many of the skills expressed are reflective of many skills identified in the employability profile on the UCAS site (biomedical science).

Recognising achievements

'*Anthony Nolan is fundamentally about finding bone marrow matches for cancer patients. As a biomedical science student, it would be useful to get some more experience and knowledge in the field. It's also useful to put onto my cv as extra-curricular activities help to make an individual to stand out from the masses of graduates that compete for jobs…' (student CA)*

'The AGM really did bring home how important the work we were now involved in was. It also drove home the massive success that some Marrow groups have had, one group raised £20,000 in a year.' (student CA)

Approaching and overcoming problems

Challenges emerged: not all students were as engaged which lead to some tensions. Organisation structures and processes were fraught at times but did not deter them from their task.

'We went to our union and asked them for the forms to create a society. Our first problem was that the form stated that we needed a minimum of 15 members to form the society and there were only 3 of us at the time. We also had to fill the positions of president, secretary and treasurer. The three of us were a bit hesitant in choosing our positions; I chose to be the treasurer as I thought that I would be able to manage handling money and that I would not do a good job of being president.' (student CA)

'..the Fresher's fair was full of hitches, room booking, our supplies did not arrive and people seemed confused ..it seemed like it would be a disaster but somehow it turned out fine we even managed to sign of loads of donors…' (students OF)

'organising an event is difficult – getting a room booking is awful no-one gets back to you … filling in risk assessments is worse! '(students OF)

'there have been difficulties – some people think I am not really suitable to be in this committee role there have been a few moans along the way I am not sure I am up to it but I do like doing it…' (student OT)

Personal gains and growth

'…it is a self-satisfying experience that anyone would enjoy! (Student TJ)

'Marrow has allowed us to talk to people who we wouldn't normally talk to. Our course is quite segmented and everyone has their own friendship groups and they do their own things, we don't do things together. Marrow is one place where we have been able to come together which has worked out well.' (student CA)

'Since joining Marrow I have been required to speak in public which I would normally run away from but it's something which is important and could be seen as a transferable skill for the workplace.' (student CA)

'it was really difficult talking to new people and then having to talk to strangers but I do feel better about doing it now I guess my confidence has grown …' (student OT)

'I have made friends – this is a really positive part I might not have talked to these people before if it wasn't for this group' (student OF)

Persuading and motivating others

'…At the end of the meeting three of us continued to talk and decided that if we were going to set up a Marrow Society, it was now or never!' (student CA)

'We were given the opportunity to introduce ourselves to the new biomedical science students. This took place before their opening lecture, in a lecture theatre. We were dressed up in our Marrow apparel and looked the part, but I was quite nervous, I do not find public speaking easy, but I wanted to do it, so I just made sure I wasn't the first to speak.' (student CA)

Students avidly undertook the challenge and from the earliest stages demonstrated enthusiasm and independence. The one project which was developed (Marrow) provided an opportunity for them to create a unique identity within the university and as they were setting this up from nothing could set their own expectations and targets. Many benefits identified by students spoke of gaining confidence in presenting themselves in different event, overcoming barriers and 'thinking on their feet'. What was noted is that these students formed social cohesion and independence fairly quickly and became a self sustaining group, no longer required the academic for guidance but instead took direction form the parent company (Anthony Nolan Trust). Although there was no mention of their studies in their diaries however this was an issue frequently discussed at meetings and also at 'clinic' events. They felt confident in their subjects as helping them understand the aims of the charitable organisation.

In terms of dissemination event the students involved in the Marrow project have had several routes of dissemination including a Head teachers event (for North west London), one school visit for year 12/13 to introduce the charity and also to recruit potential donors, conference presentations and a short article published in the university wide Teaching Fellows newsletter. The benefits of these activities have also been acknowledged by senior management with the Dean of School presented this as an example of active community engagement to the university governors.

Employers Perceptions

20   employers provided their feedback with all recognising the value of practical experience in the discipline are for career prospects. All had extremely positive views on volunteering with all employers stating discipline related volunteering activities helped to develop students employability

skills, all considered whether candidates had additional volunteering activities when employing an individual and all felt students should be encouraged to undertake discipline related volunteering activities

However, although employers were favourable towards volunteering they indicated this was a consideration to distinguish between and not the same as specific work experience. Therefore there appeared to be an implicit favouring (when considering employment) for candidate that possessed placements and volunteering, rather than volunteering alone. This is perhaps not surprising when we consider the results from CBI (2009:14) Future Fit report whereby when asked what three things universities should prioritise in relation to undergraduates, over three quarters of employers chose 'improving their employability skills', suggesting this should be a key priority for universities. The next highest ranking priority was 'work with employers to provide more work experience placements' (60%) suggesting that universities approaching business to discuss work placements for students might be pushing at an open door. The third highest choice was to 'raise the quality of graduates' with just under a half thinking this was an issue (46%), which indicates that employers still have concerns about the quality of the technical content of some degree subjects.

Although our results show that employers within this sample do value the employability skills developed from volunteering, volunteering was seen as an alternative route to developing health and science related skills when placements were not available. All employers valued the 'theory into action' elements of volunteering and placements, helping students to see how theory is brought to life in practice.

More recent data collected and discussed by the Biosciences Subject Centre (Escalate and HEA 2006) fits the same pattern of employer response. One managing director of a science recruitment company was able to give a science employer's perspective. She said that the three main requirements employers look for are:
- A good degree in a relevant subject
- Practical work experience
- Transferable skills

Further data from Blackford et al (2006) split the skills and qualities for biosciences most in demand into five main categories:
[1] Self-reliance skills [self-promotion, self-awareness, networking];
[2] People skills [team-working, communication, leadership];
[3] General skills [problem-solving, entrepreneurial, numeracy, commitment];
[4] Specialist skills [specific occupational skills, technical skills] and
[5] Commercial awareness.

Data from students from this research demonstrate that volunteering has helped to develop all five strands of these skills and qualities, particularly the Marrow project in which students took ownerships and control of the Students Union Society.

Conclusions

When considering what has been learned from this project thus far a number of things can be identified. Although students recognised the onus is on themselves to develop their employability skills they also did see the importance of the support from the university and, particularly at Level 6, the curriculum design was seem as important to help to develop these skills. Although students could articulate what employability skills consisted of when asked how and where they could provide evidence of these students had difficulties. This suggests that HEIs need to provide students with more opportunities to develop these practical skills within their discipline. With placements at a premium, and some students not keen on prolonging their time at university due to additional financial costs, greater links between HEIs and organisations to provide volunteering opportunities may be vital, particularly with employs viewing voluntary work in their discipline are favourable.

The students within this research showed that they volunteered for a variety of reasons although mainly altruism was the primary motivating factor above with developing employability skills, networking opportunities and gaining in self confidences seen as additional benefits. What the research fails to tell us so far is 'difference' in what is gained from volunteering to what is gained form a formal structured work placement and how the two can be bridged. What is know is that with employability increasing in focus HEI will have to consider additional routes to practice based work alongside that of the placement.

References

Anderson, J. & Mitchelle, H. (2006) Employability for Students. Briston: HEA and Escalate. Available at:
http://www.cumbria.ac.uk/Public/Education/Documents/Research/ESCalateDocuments/EmployabilityForStudents.pdf [Last accessed 9 April 2013]

Blackford, S. Burdass, D. & Assinder, S. (2006) Student Employability – whose job is it?. *Centre for Bioscience Bulletin 17, Spring 2006* pp6-7 (from Education Committee, Bioscience Federation)

CBI and Universities UK (2009) *Future Fit: Preparing Graduates for the World of Work.* Available at: http://www.universitiesuk.ac.uk/Publications/Documents/FutureFit.PDF [Last accessed 15 February 2013]

Compact (2009) *An Introduction to the Compact*. Commission for the Compact: London.

Clary, G & Snyder, M. (1999) The Functional Approach to Volunteers' Motivations
[Online]   Available   at:
ttp://generosityresearch.nd.edu/assets/13636/clary_snyder_volunteer_function_inventory_scale.pdf [Last accessed 26th March 2013]

Harvey,   L.   (2003)   *Transitions   to   Work*.   York: LTSN   [Online]   Available   at:
www.ltsn.ac.uk/genericcentre/ (Last accessed 12 December 2012).

High Fliers Research (2012) *The Graduate Market in 2012.* [Online]. Available: http://www.highfliers.co.uk%2Fdownload%2FGMReport12.pdf&ei=oK_tUPGiEPHB0gWVt4GICA&usg =AFQjCNFVXvWRNZ23WhsjExm4XisgPiRSjg&bvm=bv.1357316858,d.d2k [01/09, 2013].

Holdsworth, C. (2011) Win, win, win? A Critical Perspective on Student Volunteering. Economic and Social Research Council, Institute for Volunteering Research and Birkbeck, University of London Policy Seminar Thursday 17th March 2011. Available at: http://www.esrc.ac.uk/_images/Prof%20%20C%20Holdsworth%20%20Summary_tcm8-15079.pdf [Accessed 3 April 2013].

NHS Careers (2012).Biomedical Science.http://www.nhscareers.nhs.uk/explore-by-career/healthcare-science/careers-in-healthcare-science/careers-in-life-sciences/biomedical-scientists/degree-in-biomedical-sciences/ [Accessed 20 March 2013]

Pegg, A., Waldock, J., Hendy-Isaac, S. & Lawton, R. (2012) *Pedagogy for employability.* York: HEA. Available at: http://www.heacademy.ac.uk/assets/documents/employability/pedagogy_for_employability_updat e_2012.pdf [Last Accessed 7 February 2013]