Formal Volunteering and Social Learning: Methods of promoting Education for Sustainable Development in Higher Education

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Abstract

Education for Sustainable Development (ESD) is a concept that has advanced to the forefront of higher education curriculums since the United Nations Decade of Sustainable Development began in 2005. Unfortunately universities to date have not been successful in the transition of ESD into their curriculums. This paper aims to explore how two methods of social learning: Communities of Practice and Boundary Work (Wenger, 2000) within formal volunteering can affect a student's ability to learn about ESD. Through the use of qualitative research methods in the form of semi structured interviews, focus groups and observations of the volunteering activities, reliable data on deep social learning interactions is obtained. As a result the findings of this study reveal that formal volunteering has been a successful learning experience for the students but leadership from staff members and encouragement is needed for the students to fully benefit from the experience.

Keywords

Education for Sustainable Development, Social Learning, Formal Volunteering, Higher Education, Curriculum

1. Introduction

Education for Sustainable Development (ESD) is a concept that has been widely contested for many years. Within the Bruntland Report (1987) ESD is explained as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs.' Steiner & Posch (2005) believe sustainable development consists of three dimensions: 'the protection of the natural environment, the maintenance of economic vitality, and the observance of specific social considerations.' Recent research suggests that change is needed in order to ensure future sustainability, with Arbuthnott (2009) acknowledging that 'knowledge of ecological processes and situations can influence hearts and minds, but concrete change plans are more effective at changing muscles, and it is changed actions as well as attitudes that are necessary to accomplish sustainability.' Since the United Nations Decade of ESD began in 2005 the promotion of ESD has been highlighted as a necessity and therefore more emphasis is now being placed on this within the higher education curriculum. However, 'in spite of its great promise, adult education is not yet a particularly "green" field of research and scholarship.' (Walter, 2009) Even within disciplines such as environmental science and geography, little effort has been made by higher education institutions to promote ESD into the curriculum. Jones et al, (2008) states that 'UK universities must develop the means to help graduates address the challenges and responsibilities of sustainability.' Furthermore, it is important that all disciplines engage with this initiative. This poses the question how exactly do we educate students about sustainable development?

2. Theoretical Background to the Research Problem

Formal volunteering is one of the many ways in which students are taught within universities. This type of volunteering illicits support and guidance from university staff and thus can relate directly to the university curriculum. Boyle et al (2007) suggests that volunteering could promote ESD as it 'is thought to develop social capital through group dynamics, the breaking down of barriers between staff and students, and making friends.' Within geography higher education it is important to understand that students require practical geography experience as Corney & Reid (2007) explain 'the subject matter of geography focuses on inter-relationships between people and their physical, economic and social environments, at different scales and in different places.'

Formal volunteering can occur in a number of ways but primarily through:

- Campus based formal volunteering
- Community based formal volunteering.

The university campus provides simple access for students to volunteer and learn about ESD. There are many ways in which the campus can be used as a tool for teaching. This includes:

- Campus laboratory
- Student led initiatives such as recycling on campus
- Renewable energy initiatives

- Vegetation plots as practical skills
- Waste minimisation

Brunetti et al (2003) also believes that 'campus learning can be very successful if lecturers are given resources, opportunities, and trust in their intellectual capabilities, students can participate in the sustainable development of their campus while learning critical hands on career skills and gaining experience.'

Volunteering within the community also provides students with a different type of formal learning experience. Staff or students of the university can negotiate and organise volunteering events, become further involved in their local communities and help others to become more sustainable. Community volunteering can expose students to many of the same sustainability issues they are likely to face in their future careers. If the students learn 'about their social and environmental responsibilities' (Brunetti et al, 2003) within the community this is where a classroom lecture would not necessarily give the students the experiences they require.

There are many advantages and disadvantages of using formal volunteering to promote ESD. Some scholars consider knowledge of sustainability as fundamental to the successful implementation of sustainable practices on college campuses. (Eagan & Orr,1992). Another advantage of campus based learning is that it 'provides opportunities and incentives to students, faculty and staff to engage in campus sustainability. Today's college students are tomorrow's leaders. By raising awareness of sustainability and by providing opportunities to participate in it, universities can be powerful change agents with far-reaching impact.' (Emanuel and Adams, 2011).

However, formal volunteering has disadvantages as Valkanos and Fragoulis (2007) explain 'planning educational activities through experiential learning is a laborious process that requires particular attention in order not only to make activities effective, but also to provide learners with strong and useful experiences.' This time and dedication is often difficult as lecturers and students have either their own work or studies to complete and organising volunteering opportunities may be unrealistic. When planning if the campus is going to be used within classes Dahle and Neumayer (2001) demonstrate that the lecturer needs to think carefully as 'the greening of a college or university can also be costly before it is cost effective.'   Students who are involved in formal volunteering may experience the stress of having to complete formal assessments and part time jobs which mean that time constraints could inhibit their learning about ESD in this mannerism.

Formal volunteering as a method of promoting ESD within higher education can provide the opportunity for social learning to occur. Social learning within Higher Education has also been a topic widely researched and according to Gale (1996) social learning occurs in any situation in which agents learn by observing the behaviour of others. Social learning is considered important as it provides students with the ability to learn from others and enhance their knowledge of ESD. Wenger (2000) explores the effects of social learning on adult learners. Within this model there is a focus on many areas of social learning for example identity, mutual engagement and shared repertoire. However within higher education more emphasis has been placed on the following two aspects of Wengers' model.

- Communities of Practice – these are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly. The members are bound together by what they believe to be a community. 'The development of communities of practice is in part shaped by the material conditions and discursive contexts in which teachers and learners are placed.' (Avis et al, 2002)

- Boundary Processes – this is important as communities are brought together which leads to opportunities for learning. Wenger (2000) describes the boundaries of communities of practice as being fluid and 'they arise from different enterprises; different ways of engaging with one another.' Also at boundaries competence and experience tend to diverge and this is where learning is maximised. The use of boundary objects such as processes and boundary interactions are also of value.

These two stages of the model are important for learning about ESD as Hodgkinson-Williams et al (2008) explains 'learning does not happen in a void, but occurs within a social environment which not only brings with it the history, tradition and 'wisdom' of the social environment or particular society, but also provides the students with a resource of other students, each with their own knowledge, experience and expertise.'

Although considerable research has been conducted regarding formal volunteering and social learning, there has been slight research examining how the two link. Also, how formal volunteering and social learning can impact upon a student's ability to be educated on sustainable development has also had little attention. Francis (2011) reiterates this by stating that 'young adult volunteering is relatively under-researched, studies that focus on sub-groups such as university students are decidedly rare.'

In order to determine the extent to which social learning occurred through formal volunteering and if it has impacted ESD, the following questions need to be addressed by this research:

- What communities of practice have been established or currently existed?
- How do boundaries affect social learning and ESD?
- How does formal volunteering affect the student's ability to learn about ESD

3.0   Methodology

The data was collected through qualitative data collection throughout one academic semester. The data was collected overtly with the researcher gaining a rapport with staff and students over the course the semester. The rationale for using qualitative data collection methods stems from Wenger's model of social learning which suggests that 'socially defined competence is always in interplay with our experience. It is in this interplay that learning takes place.' (Wenger, 2000) Therefore qualitative data collection is more appropriate that quantitative, statistical data collection as it is only with deep social

interaction and observation that the extent of social learning in formal volunteering can be established.

The data was collected through:

- Observations,
    - A research diary, observations of tasks, events and formal exercises in order to observe social interactions and determine if Wengers' (2000) model was apparent.
- Interviews
    - With staff, students and community members before, during and after the volunteering experience in order to gain in depth information about the relationships, interactions and knowledge on ESD.
- Focus Groups
    - With students at various points throughout the semester to determine social learning within the students group work.

Further to this, qualitative methods of data collection were also used as it provided more in-depth information about the thoughts and perceptions of the staff, community members and most importantly the students. This method of data collection was also appropriate as there were only a small number of participants involved and the perceptions of those involved were key to this research.

In order to collect the data 30 students were involved in either individual interviews or the focus groups along with 4 staff members and 10 community members. The students came from an Environmental Science discipline and the formal volunteering that they were completing was within the realms of environmental issues.

Research ethics was also adhered to and although the research did not involve any vulnerable participants rigorous efforts were made to adhere to the code of practice for research as presented by the university.

In order to analyse the data, thematic interpretation of the data was used. Categories were developed and imported as nodes on Nvivo 9 through which analysis and interpretation could occur. The results of the research have been split into the following areas:

- Student communities of practice
- Boundary work
- ESD and social learning

Wengers' (2000) research on social learning helped establish the analysis of the data as it provided two prominent themes of social learning which also had to be explored within this educational setting. The third theme of 'ESD and Social Learning' could establish if and how ESD links to social learning within higher education and give an overall analysis of the main aims of the research.

The data was coded at these various nodes and used to further analyse and interpret the data into subthemes and from this the analysis and findings were recognised.

3. Results

The study revealed that there were many different aspects of social learning present throughout the formal volunteering opportunities and that it can affect ESD in a number of ways.

4.1 Student Communities of Practice

As previously mentioned a community of practice has the potential to encourage learning about ESD as students collaborate with each other and work together to help either their university or local community. In the beginning of the volunteer sessions a member of staff stated:

'We came up with these sessions as a way of bringing the students together more. This campus does not have many after hour activities for the students and from talking to the students they really want more from their student experience.'

The staff members believed volunteering to be a beneficial experience for the students and encouraged them as was observed: 'this is a wonderful opportunity for you all to take part in something very worthwhile, I hope you will do it, this experience will look very good on your CV and you will have the support of ourselves and each other along the way.' As degrees within this discipline are often practical in nature, staff and students are constantly exploring ways to improve performance and employability of the students. One student within a focus group reiterated:

'The only reason I attended these sessions was to put it on my CV. I was only going to go to a couple but I liked the activities that we were doing and the people were great to be around so I kept going back.'

According to Zhao & Kuh (2004) 'it is important to link students through ongoing social interactions affording by being with the same students for an extended period of time.' This proved beneficial to some students as it changed their perceptions of volunteering and social learning. Another example of how communities of practice were evident is described by one student:

'I went to the first volunteering meeting on my own, no one from my class was going but I went anyway. The staff was really encouraging and helpful and I met a lot of new people who are there every week. I'm glad I decided to do this I have learnt so much.'

This indicates that if students want to partake in new activities and communities of practice to widen their spectrum of knowledge and skills. During the volunteering sessions various members of the group took supplementary responsibility for the learning process for example through the organisation of sessions. Pemberton et al (2007) believe that 'leaderless communities seldom service as groups fragment and momentum is lost.' This did not take place within volunteering sessions as one student claimed:

'The staff did not spend time with us as the weeks went on, we had to take control of everything ourselves, it was great though as we helped each other, had a committee and there were some students who organised the rest of us and it worked well, we learnt how to work together which is something you can't learn in a lecture.'

There was an element of trust between the students and this can facilitate social learning since 'without trust, members of a community of practice may be reluctant to share knowledge' (Roberts, 2006). This occasion for self directed learning encouraged the students to learn within their community of practice. They were enjoying the responsibility of creating their own learning experiences and this is where deep learning can prosper on campus but within a less formal environment that students are usually aware of.

However, there were times throughout the community aspect of the volunteering experience that the various student groups did not work together as well as they previously did. One student criticised:

'I did not enjoy today as much as I thought I would. Everyone acted differently than they did at university. No one was willing to talk and we all had different jobs to do. I noticed some people paired off but I was on my own most of the time and I actually felt awkward.'

Amin & Roberts (2008), state that 'Wenger was keen to stress that not all forms of joint work could be labelled as communities of practice.' This is the apparent with this variety of volunteering. The students were separate and distance, splitting off into their groups of friends instead of working together as a team. The community leader suggested that:

'The students are out of their comfort zone here. I have given them tasks to do that they may never have done before and there is an element of being scared or apprehensive. I think this stops them having fun, especially at the start, maybe if they were here longer it would be different.'

The lack of connectedness could be determined by different surroundings and social learning experiences. Guildberg & Mackness (2009) propose that in some learning communities students struggle to be socially compatible and 'they are unable to establish effective connections and may find themselves isolated from the community.' Lipson-Lawrence (2002) also emphasises that 'a group of individuals with a common goal does not automatically constitute a community. Communities develop over time and with intention.' Students may not exert control over their learning if they are in large groups or they fail to identify with the rest of their peers. Further to this moving students from their comfort zone, out of the campus and into the public eye may also play a part in this negative experience. Elkjaer (2004) reiterates this point and suggests that in order to 'enhance this type of learning; individuals need to see themselves as parts of an entire system.'

4.2   Boundary Work

Boundary work was evident over the course of the semester. A number of different approaches were used for example staff-student, student-student and student-community. Firstly, it is important to consider the staff-student boundary work that took place. On the first day of formal volunteering, both staff and students met on campus to discuss

opportunities and ventures that could happen. Observations of this meeting suggested that:

'there was an awkwardness on behalf of the staff and students, it was a formal meeting but the students did not have to be there and the staff were completing something different and out of their comfort zone.'

The staff wanted to be involved as one explained:

' the students need our support, we cannot give them the experience they need within a classroom, so by giving them help and getting some community members in to talk to them we can keep the volunteering in line with the curriculum.'

Another commented:

'This gives students more control of what they are learning, they still have us to fall back on but the onus is on them to be responsible and learn the skills that will compliment the work we are doing with them.'

Darwen & Rannard, (2011) comprehend this by stating that 'one of the key advantages of managing student volunteering provision within a university, as opposed to referring students to external infrastructure organisations such as local volunteer centres, is the potential to link volunteering opportunities to relevant subject areas or other activities across the university.' This suggests that there was negotiability between the boundaries and that there was a bridging and merging of communities. This provides students with opportunities to learn from experts about ESD.

The staff and student boundaries have been crossed considerably during volunteering and boundary work is occurring. During a focus group one student commented:

'The staff are easier to talk to when they are out of the lecture rooms, they are not as formal, I feel like they are more helpful than before and i'm learning more from them as they explain things better and more one to one.'

Another student stated that:

'I have never talked to other people in the community, well not like this, I feel like I am doing good but also learning new things and the people helping us are so informative and have so much to tell us that it makes me want to do more volunteering.'

During the sessions it is evident that some of the students are embracing boundary work and that social learning is occurring within this realm. There are many boundaries that volunteering opens the students up to and therefore there is maximum chance that learning about ESD can occur. The students through this boundary learning can share resources, ideas and beliefs to gain more expertise in this area.

Nevertheless, not all boundary work has been successful as some members of staff struggled to become involved in the formal volunteering sessions. Another staff member explained why there were barriers:

'some staff members are better at talking to the students than others, some really get involved and aren't afraid to be themselves, sometimes it's difficult to break down the barriers with students.'

To an extent it is obvious that the staff and students are afraid to break down the formal education barrier that is required for social learning to occur. In other cases lack of knowledge and nervousness has also led the students to withdraw from their activities. Observations illustrated that:

'some of the students found it difficult to talk to those within the community who were teaching them new skills, perhaps they did not understand what they were being told to do, there were a group of students who twenty minutes into the project left and went home.'

These barriers to learning may be determined by the student's inability to identify with each other of the activities they are doing. Alternatively, the incapacity to fully engage in the community of practice means students are discouraged from learning about ESD.

4.3　ESD and Social Learning

Communities of practice and boundary work can shape how students learn. A member of staff explained the importance of students learning about ESD and how this formal volunteering experience in their belief could form their knowledge:

'Sustainability is one of the things we try to reiterate in every exercise because it is a key theme in life.'

Every volunteering experience was based around ESD but did this encourage deep learning? Volunteering exercises over the semester included litter picks, bat surveys, tree identifications, and community regeneration projects. The students, who were a component of a large group were provided with various sustainability issues and scenarios that they would face in their prospective work places. One student commented on the experience:

'I really enjoy the practical work, like on the beach it's great to be able to do these things and work together.'

One member of staff repeats this by saying:

'It's good for them to see what's done in the real world.'

Social learning through volunteering has proved to initiate learning on ESD and as Hodgkinson – Williams et al (2008) explains it 'provides the students with a resource of other students, each with their own knowledge, experience and expertise, with who to share ideas, negotiate meaning and work towards shared understandings.'

One member of the community explained that:

'there was a huge different in the students a couple of weeks into the activities, they seemed to be really happy and teamwork was definitely happening which to be fair was

not really there in the beginning. They were given tasks and worked it out together quickly and efficiently.'

Teamwork is vital in order to achieve sustainability and learning these skills will assist students as they will be able to learn from each other, their experiences and their beliefs. One student comprehends that this experience has enlightened the students to ESD than anything they had completed to date:

'My degree so far is very heavily based on environmental work, but we have seen very little of the environment. I am able to relate my theory to practical work now and everything that we have done helps me work towards the rest of my degree as well. Not only that the rest of the students come from the same background as me but maybe older or younger, slightly different degrees, but they have all been able to talk of their experiences and we are definitely going to do more volunteering together.'

This conveys that the students reconstructed and redefined their identity through social learning and self directed learning. However, these social learning experiences within formal volunteering did not always add to ESD. Some students were unable to continue volunteering for example one student said:

'I went for the first few weeks but I didn't really fit in, even though there were not that many of us, when we were doing activities some of us were left on our own. The lecturers tried to include us but I didn't need to be there, so I didn't stay.'

Some student's in spite of have common interests with others did not become part of the community of practice and not only did they not learn about ESD they possibly were discouraged from participating in volunteering again. Other students withdrew from the volunteering sessions as they did not enjoy volunteering within the community and there were inadequate campus based sessions for them. One student said:

'when we go out to do litter picks for example, the atmosphere changes, everyone is conscious of doing well encase there is perspective jobs out there, we don't talk as much and it's not as nice as doing activities on campus.'

4. Conclusions

Sherren (2008) states that all that may be required to educate for a sustainable development 'is an education that develops critical thinking skills, broad and integrated contextual knowledge and the desire and capacity to apply that knowledge.' If this is the case then formal volunteering is a viable way in which higher education institutions can provide ways of increasing student's skills for ESD. The findings of this study reveal that formal volunteering has been a successful learning experience for the students but leadership from staff members and encouragement is needed for the students to fully benefit from the experience. The study set out to determine if communities of practice have been established or currently existed, if boundaries affect social learning and ESD as well as considering if formal volunteering is an effective teaching tool in enhancing Education for Sustainable Development?

Furthermore the following conclusions can be drawn from this research into formal volunteering. Social learning principally occurred between the staff and students and the student community of practice rather than between the students and the community members. This may have been due to entering lack of knowledge on behalf of the students and nervousness of allowing newcomers to enter their community of practice. On the other hand, according to Wenger this is where most of the social learning experience happens and the fact it hasn't in this case suggests that social learning was not at its maximum potential. Boundary learning occurred mainly between staff and students. This was considered to be very successful overall as staff members opened up to the students more so than they would have within a lecture environment. The students benefited from this experience and learnt more about ESD from the encouragement and help of the staff members. The students gained valuable practical skills on ESD that they would not have gained within normal university degree programmes. These skills were in line with the academic work that they were completing and spending time with peers that were within the same disciple enabled the students to learn from each other, identify and contribute to the Community of Practice.

However, there were instances throughout the volunteering sessions that social learning was not prominent. Community volunteering appeared to be less successful than campus based volunteering. This may have been due to new surroundings, new people entering the community or lack of support. The students also failed to interact with members of the community as well as they did with the staff members. In some instances members did not even partake within the student community of practice this could be due to anxiety or finding it difficult to get their thoughts across or if there was conflict within the group.

Overall, formal volunteering has proved to be a successful addition to the higher education curriculum. Providing students with social learning skills and ESD tasks merges two important aspects of learning and for the student's future careers. It could be recommended to higher education institutions to further implement formal volunteering to promote ESD but to ensure that more community volunteering is incorporated into the activities and that all students are encouraged to partake socially. Further to these staff members who want to use formal volunteering to promote ESD need to be heavily involved in the facilitation of the volunteering experience and apply the activities more heavily towards the formal curriculum.

Further research could be completed in the following areas:

- It would be beneficial to establish if this research would be the same if formal volunteering was a compulsory component of the students degree process. Within every degree program students could benefit from this type of volunteering experience, could universities provide this for their students?
- Research on how the student perceptions changed due to formal volunteering and how it affected their formal academic work would also be of benefit to consider whether formal volunteering should be introduced into the curriculum.
- Also, could formal volunteering on ESD specifically be open for all students regardless of their disciplines such as nursing, to enable the students to learn about ESD and implement it into daily life? Would this type of learning encourage active participation in something considered out of their remit? Matarazzo-Neuberger

(2010) explained that ESD should be 'interdisciplinary: as much a matter of concern to the humanities as to the sciences.'

References

Amin, A., & Roberts, J. (2008) Knowing in Action: Beyond communities of practice, Research Policy, 37, 353-369

Arbuthnott, K. (2009) Education for sustainable development beyond attitude change, International Journal of Sustainability in Higher Education, 10:2, 152-163

Avis, J. Bathmaker, A., & Parsons, J. (2002) Communities of practice and the construction of learners in post-compulsory education and training, Journal of Vocational Education and Training, 54:1, 27-50

Boyle, A., Maguire, S., Martin, A., Milsom, S., Nash, R., Rawlingson, S., Turner, A., Wurthmann, S., Conchie, S. (2007) Fieldwork is Good: the Student Perception and the Affective Domain, of Geography in Higher Education, 31:2, 299-317

Brunetti, A., Petrell, R., Sawada, B. (2003) SEEDing Sustainability, Team project-based learning enhances awareness of sustainability at the University of British Columbia, Canada, International Journal of Sustainability in Higher Education, Vol1 , no 3 pp 210-217

Bruntland, G (1987) Our Common Future: The world Commission on Environment and Development. Oxford: Oxford University Press.

Corney, G., & Reid, A. (2007) Student teacher's learning about subject matter and pedagogy in education for sustainable development, Environmental Education Research, 13:1, 33-54

Dahle M, Neumayer, E (2001)Overcoming barriers to campus greening, A survey among higher educational institutions in London, UK, International Journal of Sustainability in Higher Education, Vol. 2 No. 2, pp. 139-160

Darwen, J., & Rannard, A. (2011) Student volunteering in England : a critical moment, Education & Training, 53:2, 177-189

Eagan, D.J. and Orr, D. (1992) The campus environmental responsibility, Jossey-Bass, San Francisco, CA

Emanuel, R., & Adams, J. (2011) College students' perceptions of campus sustainability, international journal of sustainability in higher education, vol 12, no 1, pp 79-92

Francis, J. (2011) The functions and norms that drive university student volunteering, International Journal of Non-profit and Voluntary Sector Marketing, 16, 1-12

Gale, D. (1996) What have we learned from social learning? European Economic Review, 40, 617-628

Guldberg, K., & Mackness, J. (2009) Foundations of communities of practice: enablers and barriers to participation, Journal of Computer Assisted Learning, 25, 528-538

Hodgkinson – Williams, C., Slay, H., Sieborger, I. (2008) Developing Communities of Practice within and outside higher education institutions, British Journal of Educational Technology, 39:3, 433-442

Jones, P., Trier, C., & Richards, J. (2008) Embedding Education for Sustainable Development in higher education: A case study examining common challenges and opportunities for undergraduate programmes, International Journal of Educational Research, 47, 341-350

Lipson-Lawrence, R., (2002) A small circle of friends: Cohort Groups as Learning Communities, New Directions for Adult and Continuing Education, 95, 83-92

Matarazzo-Neuberger, W. Filho, Y (2010) The Methodist University Sustainable Program, Using Earth Charter to Mainstream Sustainability, Sage publications, Vol 4(2):271-278

Pemberton, J., Mavin, S., Stalker, B. (2007) Scratching beneath the surface of communities of (mal) practice, The Learning Organisation : The International Journal of Knowledge and Organisational Learning Management, 14:1, 62-73

Roberts, J. (2006) Limits to Communities of Practice, Journal of Management Studies, 43:3, 623-639

Sherren, K. (2008) A history of the future of higher education for sustainable development, Environmental Education Research, 14:3, 238-256

Steiner, Gerald., Posch, Alfred. "Higher education for sustainability by means of transdisciplinary case studies: an innovative approach for solving complex, real-world problems," Journal of Cleaner Production, Volume 14, (2006):877-890

Valkanos, E., Fragoulis, I. (2007) Experiential learning – its place in in-house education and training", Development and Learning in Organizations, 21:5, 21-23

Walter, P. (2009) Philosophies of Adult Environmental Education, Adult Education Quarterly, 60:1, 3-25

Wenger, Etienne. (2000) Communities of Practice and Social Learning Systems, Journal of Organization, Volume 7, (2000):225-246

Zhao, C M., & Kuh, G. (2004) Adding Value: Learning Communities and Student Engagement, Research in Higher Education, 45:2, 115-137