

UNDERSTANDING WOMEN'S EXPERIENCES OF CONSTRUCTION EDUCATION: A NEED FOR LONGITUDINAL RESEARCH?

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Although more than 50% of successful applicants to Welsh HEIs were female, less than 1% attended built environment (BE) programmes. An increased percentage of females attending BE programmes should reflect more women at the 'coal face'. A connected study reported poor careers advice, inappropriate work experience, inadequate peer support and a general lack of knowledge of the industry. What other 'forces' are at play? What perceptions, expectations and experiences emerge during BE higher education? As a forerunner to a longitudinal study, a pilot investigation through questionnaire was employed to test opinions of female students attending BE courses in South Wales; investigating their experience of higher education to date. However, the questionnaires provided clear evidence of an inherent weakness in the method of personal information gathering; the responses generally imprecise or too brief to gain a rounded understanding and causal direction of respondents experiences. A view provided in a previous cross-sectional study, providing snapshots of participant's views not providing depth or an overall picture of the issues. This research aims to implement a longitudinal study of women's experience over the 'life' of their programmes to ascertain how participant's experiences, views and expectations change through the course of their studies. The preliminary findings and shortcomings encountered with the questionnaire are provided, and the reasons for further questioning that will employ face-to-face open-ended questioning and discussion. The final, long-term analysis will hopefully build a better understanding of female student experiences and ultimately consider possible implications for BE education.

Keywords: careers, career guidance, education, gender, longitudinal study.

INTRODUCTION

A 'Guardian' article stated women continue to select university subjects related to 'feminine' norms, that is, non-technical or engineering based themes (Davis, 2010). In fact, the Higher Education Statistics Agency (HESA) indicates women are falling back into more 'feminine' courses than ever before. Davis (2010) reiterating HESA statistics for engineering and technology degree courses of 15 per cent of female participants as opposed to 82 per cent attendance on 'subjects allied to medicine'. Similarly, with fewer than 1 in 50 females attending Welsh higher education BE

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courses (WAG, 2008) is the reason for their selection more to do with women preferring 'female' subject matter and conversely men attracted to 'male' themes? Sexton's (1976) controversial reasoning for such shortcomings of female imbalance is discrimination in education only begins to manifest itself in vocational training and higher education. This is further contended by Bagilhole (2009) comparing similar differences between learner statistics in Further Education (FE) and Higher Education (HE) institutions. In FE, females accounted for 97 per cent on 'early-year' care courses with 91 per cent on hairdressing. Males accounted for 97 per cent on engineering and 99 per cent broadly built environment related courses. HE statistics were of a similar scale; 86 per cent of engineering and technology students were male; whereas an average of 23 per cent was female on computer science and physics based courses. While the attitude toward the same students in their previous compulsory education is perceived as more egalitarian (all schoolchildren are of an equal status), within reason learning the same things, the change and segregation toward vocationally orientated learning paths are an important factor in the gender imbalance in certain workplaces (Bagilhole, 2009).

Many UK students, male and female, appear disinclined to accept that gender inequality exists, the argument provided in part due to students not hitherto experienced discrimination in the place of work (Durbin and Fleetwood, 2010). Durbin and Fleetwood (2010) contend there is an expanding belief amongst academics and industrialists that where and when an equal gender footing on educational access is provided, equilibrium of gender ratios in the workplace will be witnessed and contend:

"...women obtain educational qualifications similar, or at advanced levels, to men. Even assuming these are unequivocal gains, and there are reasons to be sceptical, they do not translate into equality in various dimensions of employment."

Notwithstanding the gender question, would the predominantly theoretical BE HE educational system and female students within it benefit from a more mixed approach of the theoretical, technological but including the pragmatic 'learn by doing' more hands-on style in work placement training? Dainty *et al.* (1999) suggested female students are provided with a sheltered, sanitised environment not reflecting the realities of industry. If there are issues currently with what seem to be the recurring gender (and cultural) imbalances why not more so, introduce students into the 'real world' of work through learning?

The aim of the pilot questionnaire was to measure the extent to which that particular form of research technique may provide the necessary (or otherwise) understanding of women's experiences in education. From that, a more suitable approach will be developed to improve on the initial findings, the intention to develop open-ended questions to aid face-to-face discussions for a longitudinal study of female student issues over the 'life' of their courses; for the next phase of the research.

Consequently, the goal is to improve on the information gathered from the pilot questionnaire, eventually to gain a better understanding of the issues of female BE education. Whereas Thurairajah *et al.* (2007) previously obtained information relating to women's educational experiences via a comprehensive literature review, it is intended in the long-term to adopt the qualitative longitudinal study to view those experiences through the 'gender lens'.

AIM OF THE PILOT

In preparation for a longitudinal study, and to formulate the combination of questions to be posed in that study, a preliminary pilot questionnaire was employed to provide some indication of suitable questions and hopefully provide an indication of the possible responses presented. The questions were loosely based on a previous connected broad, qualitative study into women's opinions and experiences of construction (Murphy and Ren, 2010). Former questions were adapted and others added from the continuing research of progressive and widening literature of gender, equality and educational topics. Although the questionnaire method of gaining participant's views was initially utilised and consequently the shortcomings realised, the subsequent research will be better prepared for the forthcoming face-to-face interviews to be implemented in the near future, to aid a better understanding of women's experiences.

The pilot posed questions pertaining to:

- Background – personal circumstances and previous job if applicable;
- Career choice – why they chose or changed career;
- What they were studying and why, and how they found the course;
- Perceived level of support from tutors, institution and peers;
- The perception of peers and peer support amongst their cohort; and,
- Their course and learning aspirations, career and personal objectives.

Although responses to most questions were provided by participants they varied in accuracy of response, some misunderstanding the purpose of the question. Also a number of answers provided were too brief to gain a feel for issues being alluded to by the respondent. The Achilles' heel of relying on a cross-sectional analysis in a qualitative research project as opposed to longitudinal, face-to face enquiry where further probing can determine the true meaning of responses and experiences.

CAREERS ADVICE, EDUCATION AND ENRICHMENT

Careers Advice

The suggestion is discriminatory practice when applying for courses is more prevalent than is admitted, regardless of a prospective candidates' personal choice of course to attend. The broad-spectrum gender imbalance of 'traditional' male-female courses suggests 'other forces' are at work (Eardley and Manvell, 2006); US statistics mirrored UK course disparities for similar learning content. Of greater concern according Eardley and Manvell's research is the evidence of latent sexual harassment by teachers and councillors in the process of providing advice, perpetuating the stereotypical views of male-female work/employment gender roles; the stereotyping of girls' and boys' jobs reported by Murphy and Ren (2010). The fact those prospective student's futures may well be influenced by teachers, careers advisors, parents, peers and industry perspectives is a factor that has been discussed on numerous occasions (Lu and Sexton, 2010; Murphy and Ren; 2010, O'Donnell, 2008) but the influences on the early careers of female graduates undoubtedly must also be considered. Previous suggestions already indicate a critical need for a more robust and accountable form of careers advice, especially the advice provided by 'professional' careers advisors and counsellors along with a sufficient system of mentoring (Atwal *et al.*, 2007).

Industry Deterrent

Van der Klink and Mulder (1995) discussed the external and internal sectors of the labour market; the internal comprising of the human resourcing of an organisation emphasising the careers, learning and development of the workforce; and the external drawing attention to school leavers and out of work and women looking for employment. The external sector, especially young women about to leave school may not decide to join a particular course because of the perception of a sector of employment, particularly as O'Donnell (2008) describes, the gender segregation of certain industries and sectors predominantly relating to non-traditional predominantly male dominated environments. O'Donnell implies much of the problem is related to poor promotion and ineffective collaboration between those organisations appointed to inspire prospective employees into working in those non-traditional sectors. Murray (2003), and Dainty and Bagilhole (2005) confirmed the image of the construction industry as a deterrent to many considering a career in the sector. It has been said many times, the construction and engineering industries must improve on its characteristically negative image. Furthermore, Murray and Langford (2003) criticised the stop-go policies of construction investment deterring school-leavers and graduates from entering the industry. All necessary to counter the need to attract people to the industry particularly reflecting the gender imbalance, as Greed (1991) crucially suggested "At a time of 'man' power shortages, we must do all we can to enable, and not deter, women to participate fully...".

Financing Education

Obtaining relevant and structured further or higher vocational education can be a challenge in more ways than one and difficult for many students particularly those from low income families, single parents and dual career couples balancing family lives and work commitment with learning. Two Department for Education and Skills (DfES) reports from 2003 and 2005 discussed by Gerrard and Roberts (2006) highlight a large proportion of the students in both years classed as mature students, the DfES (2003) pointing out that as mature students they would likely be parents too. The 2005 report confirmed 60 per cent of the full time and 90 per cent part time HE student intake were classed as mature with the greatest proportion of them women. Gerrard and Roberts provided harrowing accounts of single mothers, some on benefits providing for their children and struggling to cope. Feeling guilty for not providing enough financially and suffering with bouts of depression. Whereas younger students would invariably have parents to rely on in hard times, as mature students did not present them with that luxury. One respondent in their survey confessed her children lent her money out of their bank accounts to buy food for the week. Lowe and Gayle (2007) also expressed their concerns for the wellbeing of mature female students with families; the same concerns previously articulated by Edwards' (1993) revealing anxious views of women's emotional, practical and financial burdens. The current changes made by the UK Government in respect of university tuition fees will certainly exacerbate the situation with fewer students from lower-waged families and parents able to take part in higher education.

Evans (2009) provides accounts of the experiences, pressures and concerns of young women whom Evans termed as working-class girls. The old-formed values and norms of middle-class parents providing their children with an eventual university education, along with the Governmental-educational inspirational changes required to alleviate those norms is particularly of currency. Added to that is the debate of monetary

barriers to include the so called working-class people into the higher educational levels of learning. The current state of the economy and funding changes will surely fuel the debate. Evans seems to provide us with some evidence of an altruistic leaning towards family by the respondents as far as monetary values are concerned. This is opposed as Evans (2009) states, to the materialistic and self-centred goals with a desire to help their families, contrasting Skeggs' (2004) picture of a chaotic and disordered lifestyle. If the eventual, or as in some cases the existing, mother of a household can aspire to (and inspire her children to) a more informed way of life through higher education is that not a better situation for them than to fall into the trap of the 'sticky floor' (Rainbird, 2007) of low waged, uninspiring occupations with little prospect of betterment?

Gendered Education

Thurairajah *et al.* (2007) highlighted the perception of female students that science and mathematics subjects are male orientated; further gendered education themes with some resonance including research emanating from New Zealand (Airini *et al.*, 2010) reporting the gender ratio of female students outnumbering male students by 26 per cent, the imbalance recognized in American research (Glass and Minnotte, 2010) also indicate reverse deficiencies of female teaching staff; the vast majority, male staff. The argument stemming from the disparity are female students will be replete of the educational role models to encourage and further advance the learning of professionals and arguably improve the equality-recruitment process. The need for such role models, particularly those that have risen through the ranks is echoed in most sectors and industries. Considering previous discussion in this work, it is almost inevitable that female students will be taught or supervised by male staff, particularly in the sectors that are predominantly male centred. As Phillips and Pugh (2005) confirm, this may work more than satisfactorily well, but occasions may dictate female supervisors would be more suited. Regardless of gender, it can be claimed that both young men and women need successful, resourceful, educated people to aspire to, particularly those who provide inspiration through experience, patience and through teaching and learning ability.

Career Enrichment

Inevitably, most women result in providing for families and crucially young children, many of those women albeit well qualified, end up in part-time employment. Others leave school and progress into the previously mentioned stereotypical, predominantly service sector jobs. With that, a lack of training opportunities and genuine career ladders are similarly experienced by the female workforce providing little opportunity to progress in their working lives and remaining on the sticky floor (Rainbird, 2007) of low-skilled, low-paid jobs. Tomlinson *et al.* (2005) suggested the view of improving female wage earning levels to possibly encourage them to enter into non-traditional, male-dominated job roles through suitable training programmes but would that be considered positive discrimination? On a negative note, Rainbird reveals feedback from participants in her research; a number of females enthusiastically looking for career enrichment, employed by a local authority that turned them down when applying for particular courses and deemed the programmes were not connected to their employment. Furthermore, Rainbird (2007) and more recently Wilton and Purcell (2010) reported on the inadequacy of employers' involvement in providing assistance for women with family commitments; particularly women with an aspiration for further career and professional development.

Such cases in the public sector would be tested under the Equality Act (Equality Duty) but what of the private sector? Especially SMEs with a minimal budget allocated for training. As Grugulis (2007) states, the cost of developing staff would be in response to whatever economic climate and labour market conditions are present at the time. Companies working in the private sector have to compete within economic market constraints and determine if they have the luxury of being able to afford to train employees. Although the argument may be ‘the link with training and performance’ is a perceived benefit providing the correct training is made available.

PILOT QUESTIONNAIRE RESPONSES

The age range of the participants was between 19 and 35, either joining their course straight from school or from previous job roles for example as pastry chef, administrators and an occupational therapy assessor. The current positions included a variation of full-time students, working for contractors of varying descriptions, local authority or housing associations. One was self-employed. They chose those positions to change careers for more of a challenge; indicating an interest in the built environment or because the job was available at the time; for better money; through promotion; and one because of redundancy through pregnancy in a previous occupation.

The courses ranged from HNC/HND in building related studies, real estate programmes and quantity surveying degrees. Generally the purpose for taking the courses unsurprisingly was to further their careers, to further their knowledge and simply having an interest in construction. The participants found course information through a number of means, from friends or colleagues already on courses; by research and online sources; through employers; and open days and prospectuses.

Those who were employed all felt they were encouraged by their employer; some did not provide an answer although the question was not applicable to all. Similarly most responses as to institutional support (university/college etc.) were positive; as with lecturer support. Although one stated she felt she was put under pressure, some again, did not provide a response. Most thought they would pass their courses with some hard work; some were unsure; one stated difficulty as Welsh was her first language; some stating they would be capable of a pass. Opinions of course content ranged from relevant, very interesting, applicable and varied. One thought the course was varied but minimal, providing no detail.

Opinions on peers and class members also varied; a number were concerned that the younger element did not care, the elder members more focussed. A number said their groups were friendly; although outnumbered by male peers in the class. One was particularly concerned as she felt intimidated due to the number of males in the class and felt she could not speak out. She realised that it was typical of the industry. Some did not provide answers or had not formed opinions. Most did not perceive tensions amongst the groups but in some cases cliques had formed; stress due to workload was a factor with some. Peer support was evident in most classes, particularly with mature groups. Some did not provide a response.

Most of the responses indicated ambition for their future prospects wanting to better themselves; move higher in their organisations; prove to others that they can achieve; to provide for families and eventually be financially stable. One did say she felt she would find it difficult to achieve due to the gender imbalance. All wanted to

successfully complete their current courses; more than half eventually wishing to achieve either an honours or masters degree.

Their ultimate career goals varied widely; one wanted to take over the family business; some simply wanted a professional qualification or become project managers. Many did not provide a response but just wanted to develop or progress in their careers. Some just wanted to gain more knowledge of the industry one stating self-fulfilment as a response.

Replies reflecting negative experiences in their courses again varied, although half did not provide a response. Of the replies provided most expressed concerns relating to course workload with exams and assignments seemingly creating log-jams. These were particularly for those working full-time or with families. One mentioned the age-gap and gender ratio amongst the group as a problem.

A number of questions arose from the responses in this snapshot, too many to posit here. Would the respondents consider their choices the correct ones in weeks, months or next year; possibly idealistic reasons for taking on their courses and positions? Would they consider what they imagined as an interesting, perhaps well paid challenge, what they thought it would be? What of employer and institutional support, what changes would occur to their original perceptions? Would they consider to have bettered themselves for taking on what they did? Family interactions may change, would they still want to take over the family business as they originally did? Do they consider themselves self-fulfilled? This is not meant to indicate negative changes for their future prospects, positive occurrences may happen upon them too. The issue is a cross-sectional analysis is not providing a fuller picture of the respondent's experiences, a shortcoming of the method of research.

Efficacy of the pilot questionnaire

Although responses were provided for most of the questions by most of the participants, a number of issues were encountered with the pilot questionnaire. The main problem was the snapshot nature of the analysis, it is only at a single point in time, difficult to establish causal direction (Bryman, 2008). An issue described as a limitation of cross-sectional research (Lingard and Francis, 2007). It is difficult to ascertain how female experiences and perceptions change over time. How do the male/female classroom experiences differ? If they do, what are the differences? Some of the responses indicated the lack of vision as to where they wanted to be as a career goal, would those visions become clearer through the course of their learning; would classroom interaction have a bearing on those decisions?

One area requiring clarification for the research was the question of work experience and if the courses assisted in their experiences in work. Did industry experience over time make a difference in the classroom, if so, how? Only one participant provided evidence of working towards a foundation degree, an area of particular interest especially the site-based element of the qualification. Of specific concern was if the respondents perceived issues in their courses and how they would prefer to learn; by practical means or a more theoretical style. Do they differ between female and male students? This is to be given more focus in interviews and focus groups.

The question of perception of peers provided answers, too brief to gain a level of understanding of group interactions, how do the perceptions of peers alter over time? Do the perceptions differ between the female and male counterparts? How would their original and changing perceptions of the industry affect their interactions with male

students and industry staff? On the whole, peer support was evidenced; a suggestion was this depended on the age of the respondent and the age range in the groups what of the gender differences?

CONCLUSIONS

The apparently low numbers of women on the participant's courses was all too clear; (although accurate figures were not asked for) further adding to the 'feminine' norms argument and Sexton's (1976) gender manifestation in post-compulsory education. Although the pilot study was produced from a relatively small sample only two recognised or alluded to the gender imbalance of her group confirming the view of Durbin and Fleetwood (2010); but would more views of a similar nature have been provided in face-to-face discussions allowing for further dialogue between questioner and questioned?

A particular area of focus was how the respondents arrived at their courses and careers, especially focussing on the advice provided leading up to their current positions. The testing of Eardley and Manvell's (2006) assertion of latent harassment in advice provided by teachers and careers advisors was weak; although the question of how they had chosen their career paths was included, the responses to the means of gaining information for their careers provided imprecise responses. The question evidently misunderstood. The wish to progress in their careers was apparent but in some cases lacking clarity of career paths or personal objectives was evident; the goal of better earning potential also mentioned.

Where applicable, the encouragement provided by employers was made very apparent; all of those employed stated employers supported them to succeed but again answers were too brief to garner a clear view of how encouragement was presented. This initially seems to argue against Wilton and Purcell's (2010) and Rainbird's (2007) assertion of lack of employer support, although only two suggested they had families to look after assuming support would be required from their employers. The cost of developing staff (Grugulis, 2007) not seemingly an issue with participant employers. Issues relating to difficulties arising from funding tensions or possible loss of earnings because of attending courses were not alluded to by participants but the questionnaire was again apparently not clear; only one confirmed the wish to better herself in monetary terms but the answer did not fully convey the reasoning behind the answer. The financial burdens of Edwards' (1993) revelations apparently not in evidence in today's female students.

Dainty and Bagilhole's (2005) negative image of the industry did not appear to present a problem to the respondents although the apparent lack of females on the courses was all too clear and may have reflected negative perceptions. All confirmed the gender imbalance amongst their peer groups; one specifically indicating apprehension in 'speaking out' in lessons due to the overwhelming feeling of what seemed suppression of her views. Or was it purely down to a lack of self-confidence? The lack of opportunity to re-question participants on their views provided unclear and imprecise responses to the intention of the enquiry. The subject of encouragement and support afforded by lecturers on the whole provided positive responses; most stated a straightforward yes, few expanded on the type of support given. The gender make-up of lecturing staff at each of their institutions was unclear but anecdotal and researched evidence indicates the majority are male. As this is preliminary to a longitudinal research project, the adoption of the questionnaire approach acting as a 'test' for a wider study, fundamental lessons were learned. Although it may be a less

time consuming method of data collection it falls down on two major counts, the interviewer is invariably not present and the questions have to be fairly straightforward to understand (Becker and Bryman, 2004) providing responses lacking depth; and it is difficult to establish the causal direction from the responses (Bryman, 2008). The cross-sectional research method principally a snapshot of an experience strengthening the argument for a broader, longitudinal picture of participant's personal experiences supports the need for more open-ended, long-term qualitative discussion for clear, categorical responses. The ultimate aim is to ascertain a better understanding of women's experiences in built environment education.

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