

Undergraduate work placement and academic performance: Failing by doing



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***Abstract:** Universities promote vocational degrees with elements of work placement. While there is consensus on a wide range of student benefits from such programmes, it is often asserted that on return to studies after placement, there will be enhanced academic achievement. To date there has been little published research on this. A statistical investigation was undertaken of business undergraduates, some of whom undertook paid placement (one year duration) to test the impact on academic performance. No significant difference was found between those who undertook placement and those who did not. In discussion consideration was taken of motivation and transfer of learning; the architecture of placement, including placement management, contracts and academic credit, are proposed as key variables at the interface of experiential and academic learning domains. A model for optimising the benefits for stakeholders is proposed.*

***Keywords:** placement, academic achievement, learning-transfer*

The dynamic for placement

Universities in the United Kingdom, at the behest of government (Dearing, 1997, The Government's Response to "Higher Education in the Learning Society", 1998) promote the merits of vocational degree programmes that combine academic rigour with periods of placement within industry. The architecture of placement varies across programmes and universities. Insufficient attention has been paid to the effects of placement on academic performance. It is sometimes asserted that placement enhances academic achievement: as well as enhanced professional and employability skills, undergraduates who have taken, say, one year in industry, will be higher academic achievers than had they not done so. The corollary is that students who eschew placement will underperform academically. Thus there are implications for final degree classification, for employability, and for graduate labour-market value.

Placement and academic achievement

In the absence of evidence to the contrary, the claims for positive academic impacts may resolve upon marketeering - the drive to recruit students. Moreover, if such evidence exists, there is the issue of the *transmission mechanism*: it is not self-evident that work experience translates into enhanced academic performance. Quantification of the effect of placement is additionally important when one considers that it might degrade academic performance, which resolves upon the relationship between the theoretical and practical aspects of degree programmes. Parilla & Hesser (1998) found that while most (USA) sociology degrees offer

placements, academics are sceptical of the integrity of experience-based learning, and of its impact on academic achievement; but that properly structured, placement can develop analytical skills. Ryan, Toohey and Hughes (1996) note that there have been few attempts to quantify the academic impact of placement, nor acknowledgement that there might be dis-benefits, though there is general agreement that placement provides a range of benefits for students including the opportunity to:

- a) apply knowledge in a commercial environment while developing core competencies;
- b) become familiar with professional practices;
- c) raise graduate labour-market value;
- d) develop workplace maturity (Daresh, 1990; Ryan, Toohey and Hughes, 1996, Dearing, 1997).

For the universities, the benefits of placement programmes include that of a corporate image of being “connected to the real world”, with the advantages that flow from this in terms of recruitment of students and of teaching staff, of research funding and consultancy. For academics, “*work experience greatly enhances teaching as students return with improved subject knowledge, understanding and skills.*” (National Council for Work Experience, undated). While it is not the central purpose of placement programmes to enhance teaching, nor to elicit improved academic performance, if the potential exists for this secondary stream of returns then it is in the interests of stakeholders to understand the mechanisms which can lead to their optimisation.

Effective placement management

Ryan, Toohey and Hughes (1996) observe that problems emerge whenever placements are poorly structured and inappropriately supervised; consequently learning may be undermined. Turney (1988) found that student-teacher placement undermined confidence in educational theory. Engineering students did not believe that their placement helped them integrate theory and practice (Au Yeung et al, 1993). Negative outcomes from placement may arise from:

- a) weak integration of theory and practice;
- b) inappropriate placements;
- c) focusing on a narrow range of competencies rather than a deeper understanding of systems;
- d) the quality of supervision (Ryan, Toohey and Hughes, 1996).

To minimise inferior experiences and to maximise benefits, Bournier and Ellerker (1993) propose that universities focus on what is to be achieved through placement, and be aware of the learning constraints on the student during the placement, while universities and hosts need to plan and manage the placement more effectively and target:

- i. the relationship between the placement and the learning outcomes of the course as a whole;
- ii. the structure and position of the placement within a course;
- iii. understanding of the underlying processes operating within the placement environment (Bournier and Ellerker, 1993).

Models of placement

The forms that the extended (one year) placement may take are many on a spectrum between two extremes, which, for the purposes of this paper, can be represented thus:

- a) *laissez-faire* model: the student is given an indication of what he /she is expected to derive from placement; may include guidance on the compilation of a log book or diary; tasks given to the student in the work environment is at discretion of the host;

- b) *formal-structure* model: the *whole placement environment*, from initial information sessions, preparation of the CV, instruction and practice in interview techniques, through to the interview and selection by the host firm and the work experience itself, is systematically controlled to achieve pre-determined outcomes. This model will include some or all of the following:
- i. appraisal of performance in the workplace by host and university;
 - ii. a formal tri-partite *learning contract*;
 - iii. assessment for academic credit;
 - iv. post-placement activities such as seminars and de-briefing sessions.

Placement and academic performance: a statistical investigation

Method

A statistical analysis was made of exam data relating to two cohorts of business undergraduates drawn from the same population. One of the cohorts (*Experimental Group*) undertook, by choice, paid one year work placement on completion of academic Year Two; the placement lay towards the *laissez-faire* model. The other cohort (*Control Group*) proceeded by choice to academic Year Three, and subsequently undertook Ordinary Finals. *Experimental Group* on return from placement proceeded to academic Year Three and subsequently took Ordinary Finals. *Experimental Group* comprised 27 students taking 8 modules each from a bank of 37 in Year Two, and from a bank of 34 in Year Three. *Control Group* comprised 64 students drawn from the same (calendar) base-year (Year Two) drawing upon the same banks of modules in years Two and Three. Mean module scores (percentages) were used as a measure of academic performance. Comparison was made of the respective Finals results of the groups to determine whether there was any significant difference in performance. It was found that there was no significant difference in academic performance between those who had undertaken placement and those who had not.

Statistical tests and results

To determine that the cohorts were drawn from the same population in the base year, an *F-test for variance* was undertaken. Module mean scores were 55.78899083 and 54.20392157 for *Experimental* and *Control* groups respectively; variances were 75.89997041 and 83.47110443 respectively. $F = 1.099751475$; $F = 1.212983491^*$ ($p^* < .05$.) Having determined the homogeneity of the two cohorts in the base year, to test for differences in academic performance in finals that could be attributed to the independent variable, placement, a *t-test* was undertaken. Mean module scores were 55.31192661 and 55.07058824 for *Experimental* and *Control* groups respectively; $t = 0.349832937$; $t = 1.648293164^*$ ($p^* < .05$.) There was no statistically significant difference in finals between those students who undertook placement and those who did not, undermining the argument that placement will enhance performance on return to studies. In tandem with base year homogeneity of the cohorts, the results lend little support for the argument, sometimes advanced by supporters of the enhancement hypothesis, that those taking placement are self-selecting: that in choosing placement they have indicated their superior judgement and can be expected to perform better upon return to studies.

Discussion

Placement and failure to learn.

The results do not mean that the placement students failed to learn from their experience: they are suggestive of a failure to exploit to the full the learning potential of the placement with respect to those attributes that are commonly valued and evaluated by academics within the exam-based system of higher education. The reasons for what might better be termed “missed learning opportunities” may be many, including issues of motivation, the nature of

the processes of learning transfer, and the architecture - including management - of the placement. Thus the results might be best understood as reflecting that the placement tended towards the *laissez-faire* model, with few design features likely to promote academic gains. It is possible too that “other factors” affecting academic performance, not captured by the statistical tests and beyond the scope of this study, were disproportionately experienced by the placement cohort (family illness, bereavement, income problems etc.)

Motivation and placement

Motivation enters with the decision to undertake placement: the student aspires to the benefits commonly associated with placement, including, perhaps, the belief that it will enhance academic performance upon return – the placement seen as the difference between achieving the Bachelor Award with or without Distinction. It is conceivable, given the complex nature of motivation that the observed failure to enhance academic attainment reflects some diminution of academic motivation brought about by, or during, the period of placement: was there a loss of focus, a change in values? To go some way to understanding these issues one needs to look at motivation in more detail.

Motivation in the workplace

Low motivation in the workplace tends to be associated with feelings of having little or no control over the environment (Rosen, 1991). Workers tend to be motivated and productive if:

- a) encouraged to participate in decisions about working practices;
- b) given problems to solve;
- c) taught more than one skill;
- d) given individual responsibility (Rosen, 1991).

The placement student is a transient in the workplace, in suspension between two distinctively different worlds with distinctively different value and reward systems, which is perhaps manifested in de-motivation on return to studies and a loss of *learning transfer* unless the placement is designed to counter this and elicit positive learning transfer.

Transfer of learning

Transfer of learning is the influence of one act of learning upon another; that is, the extent to which learning from engaging in one task or cognitive process, impacts upon the performance of another task or cognitive process (Holding, 1991). In terms of the results reported, one could say that the transfer of learning from placement to the academic domain has been neutral at best. In positing a relationship between placement and academic achievement, one is implying that there are aspects of learning that are transferable across these distinctive domains. The placement officer “sells” the undergraduate to the organisation on the basis that the undergraduate is well-equipped to contribute to the firm’s goals, because of the academic qualities embedded in the student. But this relationship is asymmetrical: the host does not undertake to return a student who will be better equipped for academic achievement; and yet, it is precisely this which underlies the expectation that placement will enhance academic performance. This assumption is based upon a confused notion of the nature of the processes underpinning learning transfer, and ignores that the effect can be *positive* or *negative*. *Positive learning transfer* most often occurs when two tasks have elements with degrees of similarity such as in sports where athletic skills and techniques can be brought to bear across activities: e.g. the sprinter who moves to football (Taylor et al, 1982). In terms of intellectual tasks, one would anticipate broadly positive transfer across fields when the student has acquired “core” study skills. *Negative transfer* becomes salient when two tasks are superficially similar but require different responses: learning a new language when one has already proficiency in

another with a shared root, such as Spanish and French (Taylor et al, 1982). In addition to this characterisation of the scope for positive or negative transfers based upon what might be termed *mapping across domains*, the direction and sign of learning transfer may be contingent upon the model of learning being used.

Models of learning and learning transfer

It is analytically convenient to distinguish between what are broadly termed *behavioural theories of learning*, and *cognitive theories*. The former can be characterised as stressing *stimulus-response* relationships: learning is the outcome of a chain of such relationships leading to the acquisition of habits (Taylor et al, 1982). *Cognitive theories of learning* focus upon *central processes* and *cognitive structures*. To what extent can academic learning and experiential learning be characterised as falling into one or other of these models, and if so, to what degree might there be tension between these modes? Can the reported absence of evidence of positive transfer from placement to academic performance be explained by differences in the modes or processes of learning? Formal training and skill acquisition in the workplace, tends to emphasise the role of *behavioural* objectives (Mager, 1962). Training begins with the identification of objectives and instructional intent; and if behaviourally-oriented, has three essential elements:

- a) the observable behaviour that the learner must perform to demonstrate mastery of the objective;
- b) the stimulus conditions under which the behaviour should be observed (the workplace etc.);
- c) the criteria of success that define competent performance (Mager, 1962).

However, it is not always the case that training and learning in the workplace are “behaviourally driven”, and cognitive structures also have a role, especially at higher levels of task performance; thus the analysis of a task by learning mode can be integrated into training design specification (Gagné, 1985). If one conceives of qualitatively different outcomes from formal academic programmes as distinct from say, practical situations in the workplace, then one has to reflect upon the configuration of the complete learning environment: if the cognitive processes are different, then the design and expected outcomes vary accordingly, thus the potential importance in structuring and managing placement.

Deep and surface learning: academic and experiential learning

Marton and Säljö (1984) categorised students in the academic domain as either *deep learners* or *surface learners*. *Deep learning* involves relating existing knowledge to new knowledge, and the active cognitive process of comparing, contrasting and testing. The *deep learner* examines theoretical ideas in the light of his or her experience; evidence is gathered, organised and structured into a form that renders coherence to the information and to its relationships and cognitive consequences. The *surface-learner* focuses upon the surface features of the problem; each problem, *in extremis*, is novel. Even where the component parts of the problem are linked, the surface-learner tends not to relate these to each other, focusing instead on the unrelated parts. However, the division proposed by Marton and Säljö does not mean that surface learning is always a less effective mode: many tasks in the experiential learning domain do not require the deep approach - for example, administratively repetitive or system-determined responses – and these may be thought of as characterising this domain. In the academic domain, while in principle the deep approach is the ideal upon which all other learning may be constructed, the competent learner will draw from both modes as appropriate for the task. If the key task is perceived to be passing exams, and past experience has reinforced the efficacy of late cramming, then even the brightest student would be “leaving a club in the locker” if he or she eschewed such a principle.

Learning and placement

In placement, the learning environment is radically different from that of the university: the primary function of the workplace is not teaching or learning; it is the operation of the business. Even to the extent that formal training is given in the workplace, the trainer may be one whose primary role is *not* that of teacher. Furthermore, the attitude of the student in the workplace may differ from that in the university, and may be a function of the nature of the workplace and the operational processes of working, as well as the nature of the tasks that have to be learned and effectively managed by the student (Ashcroft and Foreman-Peck, 1994). How the placement student achieves competency in the workplace may differ significantly from that in university: the workplace tutor may be untrained as a tutor; the student may not be given time to reflect upon and to discuss expected outcomes.

Learning contracts and placement management

Based upon Kolb (1984) and developed by Knowles (1986), at the core of the learning contract is that competencies developed in the workplace, need not be inferior to deep learning if supplemented by strategies which encourage reflection and self-knowledge. Deep learning can be engendered by contracts since at the core of *any* contract are well-established psychological drivers which, if effectively linked to placement, should produce positive learning transfer on return to studies (Latham and Saari, 1979, Rousseau, 1995). The placement, properly designed and managed from conception to completion and built upon transparent and consensual contractual obligations for those involved, may facilitate improved academic achievement on return to studies (Bourner and Ellerker, 1993).

Issues of policy

If academic performance is affected by placement then clearly there are some fundamental issues of policy which have implications for the main constituencies engaged in the placement process: the undergraduates, the universities and the employers. Moreover, there are issues of transparency in that if there are significant differences in academic achievement as between placement and non-placement students, then this information should be readily available so that informed choices can be made. In particular, where matters of degree classifications are concerned, it would be obviously in the students' interests to know the extent to which placement is expected to improve academic performance. On the basis that placement is not primarily structured (or *sold*) on its academic merits, one would not suggest that it should be discontinued on academic grounds alone if enhanced academic performance fails to materialise; and anyway the other benefits associated with placement are likely to outweigh the lack of any significant academic gains. However, given that universities have a mission to promote academic excellence, there is a need to examine the learning mechanisms and potentialities of placement and its relationship to academic tasks, with a view to structuring the placement to optimise any potential academic benefits (though not at the expense of the other assumed benefits). There is a need for more research on the benefits (and costs) of the placement. Moreover, without any clear indication of the benefits, or research on the different outcomes between the various models of placement in currency, there is no rigorous basis for preferring one over another.

Academic credit for placement

The dilemma confronting universities as they strive to be "more relevant", is the eternal one of the relationship between academic standards and values, and those of the world outside the universities. One route that should be considered within the context of the placement architecture, is that of giving full academic credit for placement (Danks and King, 1986). This would have the merit (assuming no compromising of academic standards) of reinforcing the values taught in the classroom or lab, while marrying them to the expectations of the

commercial world. This raises the problem of how to evaluate placement within the framework of conventional measures of academic achievement, as well as whether this in turn would impact upon academic performance on return to university. Full academic credit for placement will require a radical rethink as to the goals and structures of the placement (Benett, 1989), including consideration of:

- a) what learning outcomes can be best achieved through the placement;
- b) the extent to which a formal curriculum for the placement will be required;
- c) the use of learning contracts;
- d) the duration and structure of the placement;
- e) the use of co-curriculum activities such as seminars and presentations on workplace experiences (Benett, 1989).

Conclusion

There is a lack of an empirical basis for the preference of one type of placement model over the other. Additionally, there seems to be a lack of clarity as to the expected learning outcomes of the placement experience. Research is required to look into the relationship between placement architecture and academic performance. The results reported above would indicate that the *laissez-faire* approach will not exploit the academic potential of placement, and this represents an opportunity cost for the student and the universities. One way of imposing a coherent and logical structure on the theory and practice of placement within higher education will be to move towards full academic credit for placement. Apart from imposing a discipline upon the student in the placement, it would serve to impose a much needed discipline on those universities who approach placement in an unscientific way. It is proposed that:

- a) there is a qualitative difference in the learning processes of the academic domain and that of the workplace;
- b) this difference can be narrowed by the design and implementation of tri-partite learning contracts involving the undergraduate, the host organisation, and the university;
- c) full academic assessment and credit for workplace learning should be embedded in the placement architecture in the context of the *formal-structure* model.

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