

A Web-based personal and professional development tool to promote life-long learning within the construction industry

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ABSTRACT

The Department of Civil and Building Engineering at Loughborough University, in partnership with the Chartered Institute of Building, are currently collaborating on a two-year project, 'Recording Achievement in Construction' designed to encourage personal and professional development. The project, funded by the Department for Education and Employment, aims to promote a culture that will enable and support construction students and graduates to monitor, build and reflect upon their own personal development within the construction discipline.

This paper outlines the rationale for the project and explains the reasoning behind the design and development of the RAPID (Recording Achievement for Professional and Individual Development) Progress File (Loughborough University, 1999). Furthermore, this paper outlines how this tool is currently being implemented within the Higher Education community, the lessons learned to date, and offers recommendations as to how it can be most effectively integrated with existing educational structures and practices.

We conclude that the RAPID Progress File is the kind of personal and professional development tool that can assist and encourage individual learners develop a life-long perspective on the learning process.

Keywords

Recording achievement, Rapid progress file, Skills, Competencies, Professional development

Overview

In the UK the Dearing Review of Higher Education (Dearing, 1997) recommended that institutions of higher education should seek to develop a Progress File that would enable students to monitor, build and reflect upon their personal developments. In response the Department for Education and Employment (DfEE) have funded a number of development projects (DfEE, 1998) to explore a number of approaches to encourage both undergraduates and post graduate students to reflect and record their personal development during their academic and non-academic activities. As one of these funded projects, the 'Recording Achievement in Construction' project promotes these developments within higher education, and places them within the context of lifelong learning within the Construction Industry.

Rationale

The *Recording Achievement in Construction* project aims to further the ideals of developing reflective learning skills by encouraging the adoption of an on-going model of development from school, through higher education

to professional membership and beyond. By helping students and graduates recognise their competencies and achievements, in whatever context they may have been made, we aim to prepare them to meet the demands of the Chartered Institute of Building's competence based Professional Development Programme (PDP). Moreover, we seek to develop a life-long perspective towards the learning process amongst our students and graduates.

The PDP has been designed to provide a structured framework for graduates to undertake to gain competencies in specific areas. The programme is generic in nature and allows graduates to transfer between different occupation roles, if required. On completion of the programme, graduates take a *professional interview* in which they propose their continuing development plan for the next two years. Successful completion of the PDP results in corporate membership of the Chartered Institute of Building.

Our project underpins this programme by involving students in the professional development process from the time they arrive at university. It encourages them to start recording their efforts during their formal education and to continue this throughout their working life. The RAPID Progress File has been developed to offer students the opportunity to record and develop competence in a range of skills that are compatible with the competence requirements of the PDP.

We argue that by recording achievement, gathering and generating evidence of skill development and competencies, students will become accustomed to the processes of satisfying competence based assessment. Furthermore, they should also begin to recognise that learning and skill development is an iterative and continuous process.

The general structure of the RAPID Progress File

In designing a Progress File that fulfils the objectives of our project, we have sought to incorporate mechanisms that allow for both the recording of achievement and the generation of skill development. In short, the RAPID Progress File both records tangible products (qualifications, certificates, awards, and so on) and develops skill acquisition and evidence of competence through the processes of planning, evaluation and reflection.

We consider this dual track approach to be an essential feature of any recording achievement mechanism that claims to offer a means of encouraging and supporting a developmental process.

To assist this process we have identified a number of specific skills. In all there are over forty skills divided into three categories. The 'Key skills' category refers to those transferable skills, such as communication, numeracy, teamwork, that are such an integral part of existing vocational qualifications within the construction industry in the UK. 'Personal and Professional skills' refer to those skills that emphasise competence within the workplace. These include inter-personal skills and organisational management skills. The third category of skills is the 'Construction related' skills, such as surveying and project management skills, that are specifically discipline orientated.

These various skills have been chosen according to the extent to which they match and support the professional competencies of the Chartered Institute of Building's Professional Development Programme. Students are encouraged to develop these skills to appropriate levels and to generate sufficient verifiable evidence to support their claims of competence.

The skills development process

The RAPID Progress File offers a process for acquiring and developing skills and competencies to further professional, academic and personal development.

Students engage in an on-going cycle of activities. This begins with a skills audit based on self-assessment of their competence in the skills outlined above. Students are encouraged to audit a broad and comprehensive range of skills, though they are not expected to assess each skill prior to engaging in the next stage of the process.

Following this initial self-audit, students are encouraged to identify their strengths and weaknesses as revealed by the audit. They are encouraged to consider which skills they need to develop and which skills require more relevant evidence of competence. Students are directed to seek skill development opportunities that are available to them, whether in their academic programme or not.

Once an opportunity has been identified students are advised to form 'action plans' before engaging in skills development activities. This is considered important in developing the proactive approach we seek to develop within our students. Moreover, the formation of a plan assists students in monitoring and reflecting upon the activity being undertaken.

On completion of the activity, students are encouraged to review, reflect upon and evaluate their actions. We consider this to be an important stage in the cycle of activities as it can help reveal to students what is and what is not effective practice.

This whole process should generate evidence that would be documented and fed back into the skills assessment stage allowing for the cycle of activities to be continuously repeated.

Supporting Students

As students use the RAPID Progress File as a development tool that they can access at any time, it is critical that there is clear and concise support and advice relating to its best use.

Guidance material is therefore included to lead students through the various stages involved in using the Progress File. In addition, as the processes involved (self-assessment, action planning, and reflection) require independent action on the part of students, exemplars are provided to inform them of best practice.

At Loughborough, students undertook an induction programme to prepare them in the use of the Progress File and the processes involved. In addition to this personal tutors were briefed on how to support students in the use of the Progress File. As students become more confident in the use of the Progress File and the processes therein, we expect the level of staff involvement to be reduced, though we would encourage continued and regular monitoring of progress.

By graduation we would expect students to have developed sufficient confidence for them to engage in the use of the RAPID Progress File on a totally independent basis.

Developing a Web-based tool

The Web-based RAPID Progress File has been developed to maximise the processes described above. It has been developed on a PC-based Caldera OpenLinux server, using CGI scripts written in Perl. These scripts use the Perl module DBI to access a mSQL database.

The choice of using the Web as the medium for recording achievement is based on the advantages that such an approach offers compared to a more traditional paper based format. These advantages include greater flexibility and accessibility, the potential for more interactivity, and the provision of an environment that can foster user motivation.

In addition, through being a platform independent medium, the Web offers a degree of portability that cannot be offered by a PC or Mac based system on a local network. Any registered user of the RAPID system can access their record at any time from anywhere in the world (provided that they have an Internet connection).

The Web also allows for the creation of an attractive and user responsive medium. This is illustrated in Figure 1 (the interface to the recording section) and Figure 2 (the interface to the skills development function).

Implementing the RAPID Progress File

The RAPID Progress File has so far been piloted at Loughborough University, Liverpool John Moores University, South Bank University, and at HBG Construction, a major employer organisation within the construction industry, from February 1999. The process of introducing students to this personal and professional development tool followed a similar pattern in each institution.

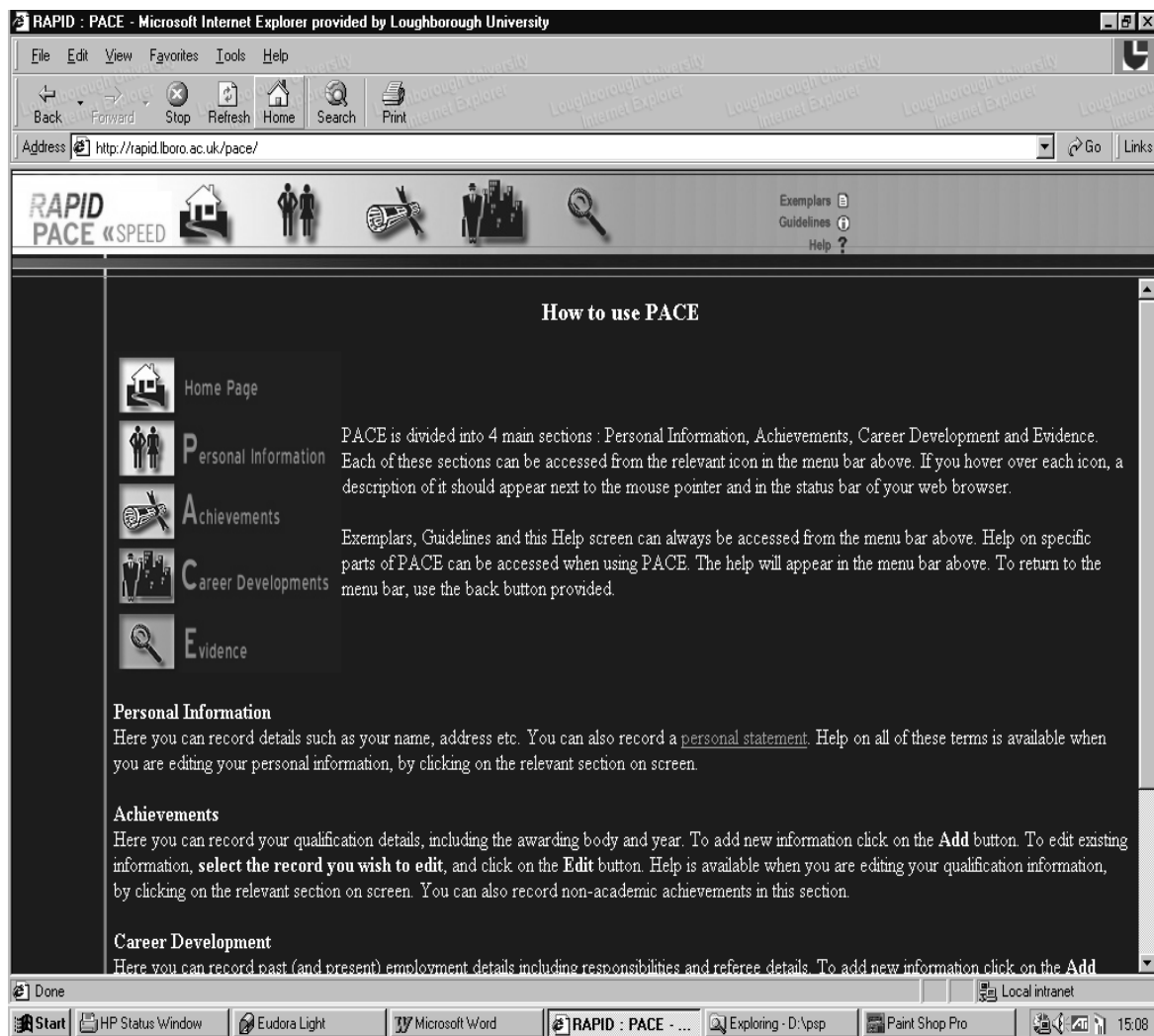


Figure 1. The interface to the recording section

Prior to using the Web-based version, students undertook a programme of induction. This programme concentrated on the main features of the recording and skills development processes. Students were given simple paper based tasks to familiarise themselves with these processes.

On completion of the induction programme students were encouraged to use the Web-based version of the Progress File. After a number of weeks tutors and students completed questionnaires and were interviewed to evaluate both the Progress File itself, and the processes involved.

Initial Evaluation

The initial evaluation results reveal that for some students, the processes that they were asked to engage in, such as planning and reflection, were unfamiliar and therefore rather difficult. Moreover, some students showed an initial reluctance to involve themselves in the activities involved. Nevertheless, the majority opinion was favourable with many recognising the opportunities offered to record and store personal details and evidence of competence.

The Web-based version of the RAPID Progress File was highly commended for the ease and speed of entering and editing data. Most students favoured this medium over a more traditional paper based medium. The students offered suggestions on revisions to the appearance and navigation within the Website.

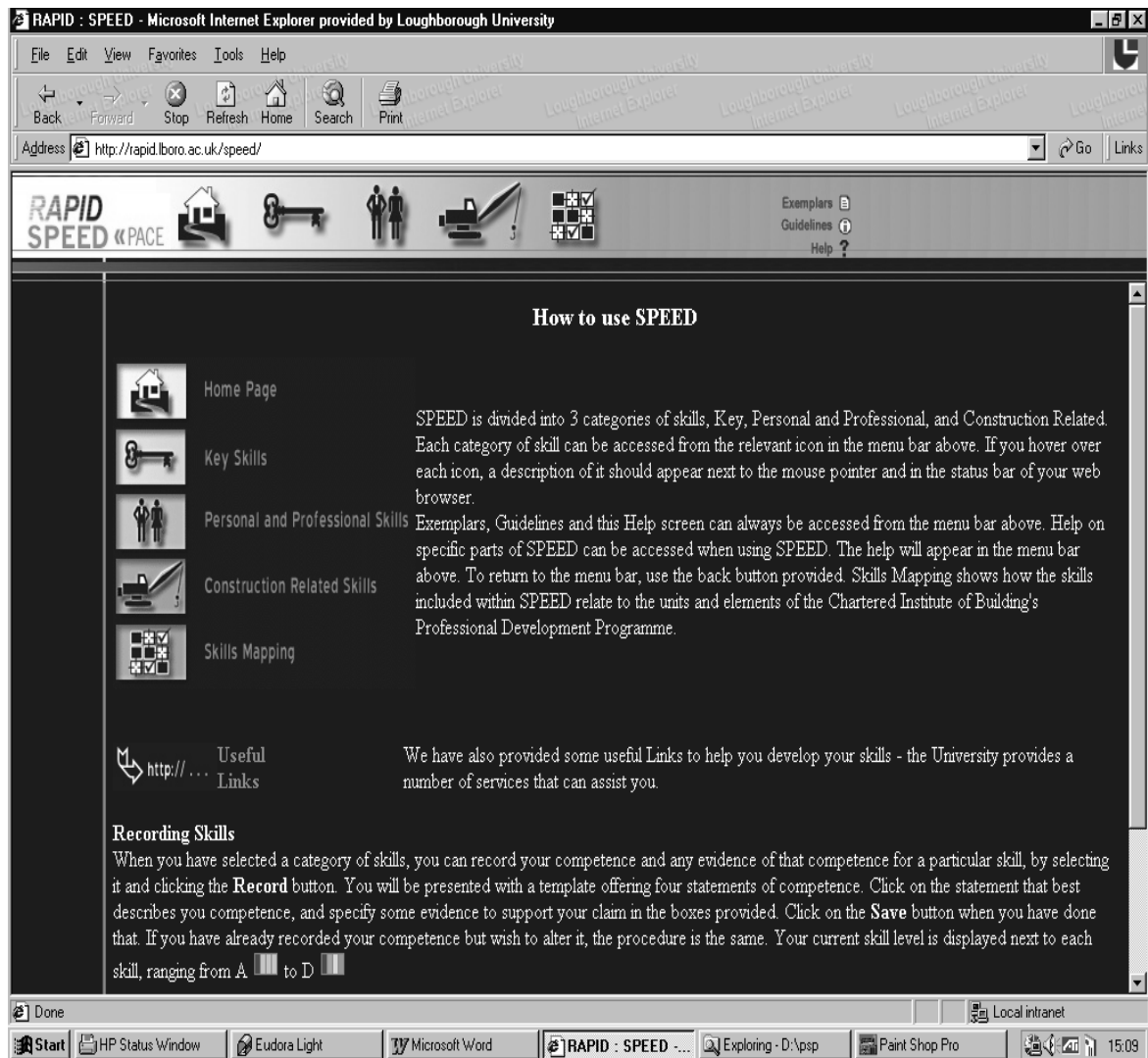


Figure 2. The interface to the skills development function

Primary Issues

The main issues arising from this initial pilot stage centre around motivation, both of the user and those who support students within academic institutions, and on practical systems of induction and support for students.

Most students viewed recording achievement and skill development as a secondary and peripheral activity compared to their degree programme. Those students who had had some experience of working in industry were much more receptive and appreciative of the opportunities offered by the RAPID Progress File as a mechanism for supporting independent learning and promoting personal and professional development than those who had not.

The question of motivation highlights the need not only to develop mechanisms that support individual and life-long learning but also a change in the culture of educational provision. Where the message so clearly emphasises the importance of “qualifications”, should we be surprised that students adopt and exhibit an instrumental approach to the learning process?

One clear message that emerged from the evaluation process was that students would be much more inclined to use a personal and professional development tool if there were some intrinsic reward or credit for doing so. While this might contradict the philosophy of individual learning, it may provide a means by which students could be initially encouraged to engage in the process.

A secondary motivational issue concerns staff within academic institutions. Some staff are likely to perceive a changed focus away from the curriculum towards more individualised learning focused on the student as a threat to their subject discipline and existing practices. Moreover, the demands upon staff in terms of teaching commitment, administration and research activity are already considerable.

More directly, tutors who support students in the use of a mechanism like the RAPID Progress File need to be committed to the process and convinced of its merits. This signals a need for both appropriate staff development and effective promotion of the benefits of encouraging and enabling individual learning amongst students.

Another major issue concerns the nature and extent of induction and support for students. The findings of our evaluation show that students appreciate considerable support and guidance from staff who are committed and enthusiastic. During the initial stage, we found that students prefer a structured approach to one that gives them free access and little direction. Moreover, students appear to prefer a brief, focused induction to one that is spread out over a period of time.

While in the long run wishing to foster more independent and individualised use of the RAPID Progress File, it is important to recognise that in the short term considerable support, guidance and encouragement is needed to induct students in the processes of individual learning.

Recommendations

The RAPID Progress File to date has been piloted in a small number of institutions. Although these institutions are diverse, care must be exercised in drawing conclusions that are too definite or making recommendations that are too constraining. Nevertheless, we believe that important lessons have already been learnt and that certain suggestions are warranted.

Our first recommendation is that the processes of recording achievement and developing skills need to be integrated into existing academic practice. We believe that only by embedding these processes will they be perceived, by both staff and students, as valid and central to the learning process. At Loughborough, we shall include the use of the RAPID Progress File, within an existing taught module in the second semester of the 1999-2000 academic year.

Secondly, we believe that students will come to value the RAPID Progress File and the processes it encourages if it can be shown to be directly relevant and beneficial to their career development. Where university courses include periods of industrial training, we strongly recommend that the RAPID Progress File is used to support existing mechanisms for planning, recording and reporting on this industrial experience. At Loughborough, the period of industrial training - which is recognised by the awarding of a 'Diploma in Industrial Studies' - is now focused on the competence framework of the Chartered Institute of Building's PDP. Moreover, the specifications for the award make direct reference to the use of the RAPID Progress File, and students are encouraged to use it to assist them in the planning and recording of their activities, and at the reporting stage.

Our third recommendation is that students should receive some reward or credit as recognition of their use of the RAPID Progress File. At Loughborough, credit will be given within the module that RAPID forms part of.

Our final recommendation concerns the need to develop and sustain communication with staff. Only by engaging tutors in the process will students come to recognise that recording achievement and developing skill are critical activities in the learning process. At Loughborough, staff development courses will be provided to assist this process.

Although these recommendations appear to take the focus away from individual learning, we believe that students will not engage themselves fully in the process unless they are confident in the use of the mechanism provided.

Future development

The RAPID Progress File is currently being refined in response to the evaluation of the first pilot stage. In the 1999-2000 academic year, the revised RAPID Progress File will be further piloted in a range of academic institutions and employer organisations. Our pilot partners will be encouraged to adapt RAPID to meet their

particular needs. We fully expect that this multi contextual testing of the RAPID Progress File will enable us to present a Progress File that meets the future learning needs of professionals in the construction industry.

Moreover, the Chartered Institute of Building intends to adopt the RAPID Progress File at the end of the funding period for our project and to promote its use across all accredited higher education institutions.

We are also engaged in developing a more generic version of RAPID for use as a campus-wide skill development programme at Loughborough. We intend that the benefits of encouraging more proactive, individualised learning should be made available to the whole student body at our university.

The culture of life-long learning has yet to be fully recognised and accepted within the higher education community. We believe that with the right mechanisms and tools individual learners will adopt a life-long perspective to their learning. The RAPID Progress File, we argue, enables and encourages such a perspective.

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