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Embedding Personal Development Planning into the Curriculum Via a Key Skills Assignment*

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The imminent introduction of Personal Development Plans and Personal Development Planning into higher education has led to confusion among academics over how best to implement such measures. There are many guidelines available on what Personal Development Plans should achieve and the activities students should be involved in. This paper provides details of an assignment designed to help students develop the skills and knowledge they need to successfully engage in Personal Development Planning and meet QAA requirements. The module has also been successful in changing student attitudes and perception of Personal Development Planning. This paper would be useful for academics seeking to design a PDP process that engages students to successfully meet PDP requirements with limited resources.

INTRODUCTION

DO STUDENTS LEAVE university with the necessary skills to participate in the world of work? This debate has long been argued in higher education circles, but as yet there has been no uniform way of addressing student skill capabilities in the higher education sector. Higher education providers have been addressing student skill needs in isolation, leading to inequality in skills provision.

To address inequality in skills provision, Lord Dearing recommended that *all* students be provided with an opportunity to engage in some form of skills development; hence the requirement to introduce Personal Development Plans (PDPs) and Personal Development Planning into higher education [1]. This paper illustrates how the School of Technology at the University of Glamorgan modified an existing skills-based module to meet Personal Development Planning requirements. The module was constructed using Biggs' [2] theory of Constructive Alignment as the theoretical base, to ensure the teaching and learning environment would support students in their endeavour to manage their own learning and meet Personal Development Planning requirements. This paper also reports on how the School of Technology overcame common problems associated with integrating Personal Development Plans, including integrating Personal Development Planning with minimal resources and disruption to the existing curriculum, developing suitable assessment procedures whilst promoting student engagement and transference of skills and knowledge. Finally, we turn our attention to how student attitudes towards skill development altered during the module.

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BACKGROUND TO PERSONAL DEVELOPMENT PLANS

Never before has it been so important for students to gain the appropriate skills for the world of work. Dramatic increases in the number of students graduating from higher education means that competition for graduate-level jobs is intense. Therefore, to secure graduate-calibre employment students must demonstrate to potential employers that they have both the qualifications and appropriate skills to perform well in employment.

To assist students in improving their personal, educational, career awareness and development, the UK government has adopted Lord Dearing's recommendations on Personal Development Plans. By the year 2006/07, all UK higher education institutes must offer all students the opportunity to participate in some form of PDP [1, 3]. There are no rigid rules for implementation, but rather a series of guidelines to ensure choice in the implementation and delivery process; thus enabling each institution to tailor PDPs to suit their cohort of students.

In line with Dearing's recommendations, PDPs involve two processes. Firstly, a transcript to record individual skills and achievements and secondly (the process this paper shall focus upon): 'a structured and supported process undertaken by an individual to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development' [3].

The primary objective for PDPs is: to improve the capacity of individuals to learn, plan and review work; and ultimately take responsibility over their learning. To meet these primary objectives, it is expected that PDPs will involve activities designed to develop the students' ability to [3]:

1. Gather information on their learning experiences and achievements.
2. Reflect on these experiences to identify new learning needs.
3. Create development plans.
4. Review progress towards goals set.

By engaging in these activities, it is anticipated that students will acquire the learning tools and skills needed to successfully transfer knowledge and take responsibility for their own personal, career and educational development.

Considerations in PDP design

Although the Quality Assurance Agency (QAA) [3] has provided guidelines on activities which PDPs are likely to involve, to ensure effectiveness there are still a few areas which need careful consideration when designing the Personal Development Planning process. Blumhof [4] highlighted a number of potential areas which, without careful consideration, could jeopardise the success of PDPs. Areas that need careful consideration include: the design of the curriculum, selection of assessment methods, maximising student engagement in tasks, and encouraging transference of the skills, capabilities and knowledge acquired.

THEORETICAL UNDERPINNINGS

How do we integrate Personal Development Planning into the curriculum? The approach recommended by the QAA [3] is to embed delivery into the curriculum. Although more problematic in terms of integration the potential benefits outweigh the negatives. Embedding into the curriculum ensures high levels of participation and signals to students the importance placed on skills development. If PDPs are offered as an additional learning activity, then participation is likely to be low as there is little motivation for students to engage [5]. This may lead to further division between student skill capabilities, with students in most need of guidance not engaging in the process; thus compromising the effectiveness of PDPs.

However, embedding PDPs to ensure high levels of participation does not necessarily translate into high levels of student engagement. Therefore teaching and learning activities, including assessment, must promote student engagement, so that tasks and activities are not only performed for academic credit.

Constructive Alignment

Biggs' [2] theory of Constructive Alignment is designed to support students reach specified learning objectives by aligning learning and teaching tasks, and assessment, with learning objectives (Fig. 1). To achieve Constructive Alignment learning objectives must be made and communicated to students. For students to attain these objectives, learning tasks, activities and assessment methods must help students develop the skills needed to meet the learning objectives.

Given the intrinsic nature of Personal Development Planning, genuine development can only occur within the student (although a supportive teaching and learning environment is also necessary). To maximise learning experiences, students must engage with the subject material, and teaching and learning environments must also promote this engagement. Following theoretical principles, one method to encourage student engagement would be to promote 'deep' learning [6]. The teaching and learning environment can encourage deep learning by allowing students a level of control over their learning. By transferring control over the content of study to the student, we can promote an intrinsic interest in the material being studied and encourage students to take ownership of the PDP process. If students have an intrinsic interest in the subject material, they are more likely to try to understand 'how' and 'what' they learn. Developing greater understanding of learner identity/behaviour can help students develop, adapt and apply their skills to new situations, thus encouraging the transference of knowledge.

Although learning tasks play a vital role in helping meet specified learning objectives, students will always look towards assessment criteria to maximise academic performance. Following Constructive Alignment principles, assessment is linked to learning objectives and tasks (see Fig. 1), measuring how well students meet these learning outcomes.

BACKGROUND TO THE MODULE

The School of Technology has always taken skills development seriously and offers all Mechanical Engineering undergraduates an opportunity to develop key skills in the core module 'Engineer in Society'. Engineer in Society is a compulsory level two, 10-credit undergraduate module lasting one academic year, and incorporates aspects of key skills (70% of module assessment), sustainability and health and safety (30% module assessment). The module is delivered via a two-hour weekly tutorial session to approximately 35 students, and has been successfully running for two academic years.

Initially the Engineer in Society module was designed to deliver key skills guidance. However, with the arrival of PDPs and restricted resources allocated to the process, the most effective means of delivering Personal Development Planning was to adapt the existing skills-based module. By adapting the existing skills-based module, negative

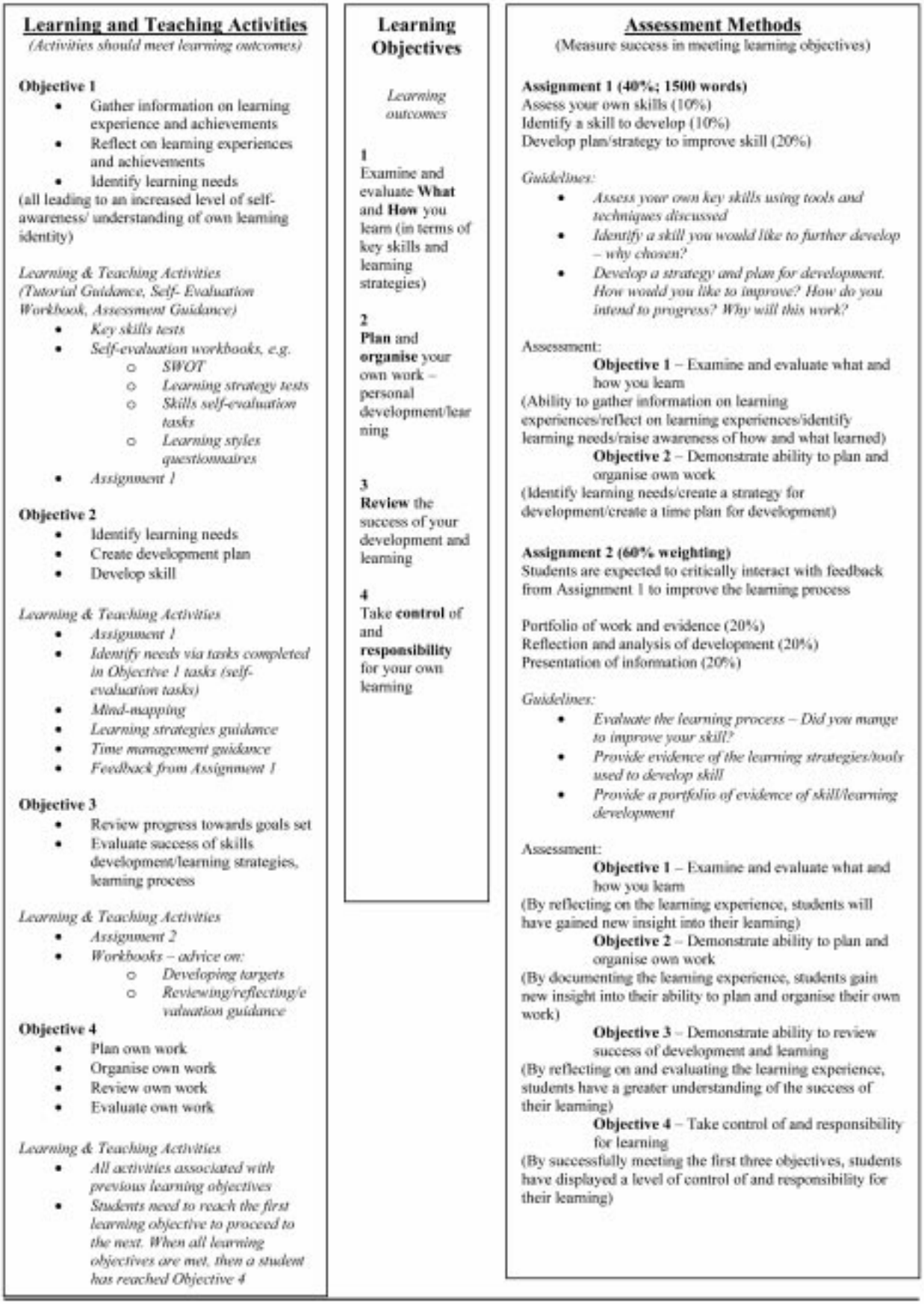

Fig. 1. Engineer in Society (constructive alignment).

side-effects associated with embedding PDPs into the curriculum—such as changes to the curriculum and the need for additional resources—were removed, whilst benefits such as compulsory participation were maintained.

Setting learning objectives and tasks for the module

Deciding upon learning objectives for the module was relatively easy due to guidelines offered by the QAA on what Personal Development Planning should achieve. The QAA primary objectives became the learning objectives for the module. If students achieved the module learning objectives then simultaneously QAA objectives would also be met. The four learning objectives students aimed to achieve were (Fig. 1): to be able to examine and evaluate *what* and *how* to learn; to be able to *plan* and o*rganise* work; to be able to r*eview* the success of development and learning; and finally to be able to take c*ontrol* and r*esponsibility* of learning [3].

The learning tasks recommended by the QAA to help students meet primary/learning objectives were: *gathering information* on learning experiences and achievements; *reflecting* upon these experiences; i*dentifying* new learning needs; *creating plans* for development; and *reviewing* progress towards set goals [3]. These tasks then became the learning and teaching tasks for the module.

Developing the first stage of the assignment

To assess a student's ability to perform learning tasks and thus attain learning objectives, two coursework assignments were set (Fig. 1). Firstly, students were required to write a 1500-word report, accounting for 40% of the final grade. The report detailed the student's initial skills/learning assessments in order to identify a skill in need of further development.

To aid understand of learning strengths and weaknesses, students were advised to write a personal profile detailing their current skills levels and to state whether these levels met their expectations. To complete this profile, the first two weeks of the teaching programme focused on activities to help identify learning strengths and weaknesses; self-evaluation workbooks were also distributed. Workbooks gave structured guides detailing simple self-evaluation techniques, such as SWOT analysis, and included self-assessment tests to identify current skills levels and learning behaviour. Due to the subjective nature of workbooks, basic maths and communication tests (non-assessed) were also taken, to provide an objective view on key skill levels. Further activities were included in the workbook, so that, regardless of learning style, all students would find suitable methods of self-evaluation. To foster student confidence, tutorial guidance at this stage was intensive.

In completing the self-evaluation phase, students developed a greater depth of understanding about *what* and *how* they learn (Learning Objective 1: LO 1). Using this new information, students were required to identify a learning need and create a strategy to improve this skill, focusing on the ability to *plan* and *organise* work (LO 2). Students were not penalised for selecting a skill which had not been identified as their weakest (provided justification could be given for the final selection), as the ethos of the module was to encourage personal development. It was deemed important that students enjoyed the learning experience in order to continue furthering their own development on completion of the module (possibly tackling more problematic areas of learning when confidence in self-directed learning had increased).

The formulation of a plan for skill development was largely in the control of the individual. Tutorial guidance was given and self-evaluation workbooks detailed possible strategies for development, and information on developing achievable targets. It was essential for students to create development plans, to assist in the reviewing and reflection stage of the learning experience. Without a plan for development, how could students know what they wanted to achieve? And when they had met their goals?

Assessment procedures measured the students' success in achieving the set tasks (and thus attaining the learning objectives). Assessment of skills levels accounts for 10% of the final grade; identification of, and justification for selection of; a skill for development accounted for another 10%; with the strategy for development accounting for 20%. Assessment criteria rewarded 'deep' learning and critical interaction with self-assessment information, as students were required to interact with their new-found knowledge to solve learning problems, rather than merely quoting self-assessment results.

On completion of the first assignment, students were asked to present a brief non-assessed presentation to fellow classmates outlining information included in the first assignment. Classmates then commented on self-evaluation, skill selection and development strategies (for example, commenting on the viability of certain strategies). This provided students with an insight into how others planned to progress, possibly highlighting further strategies that could be explored, but also demonstrating the individual nature of personal development. Tutor feedback was also received prior to actual skills development, to encourage reflection and critical interaction with feedback. Critically interacting with feedback was invaluable in the learning process, as it enabled modification of learner behaviour; a practice often neglected by students. Further guidance given through feedback was invaluable, as students only take control over their learning when they feel confident to do so. Therefore, by confirming the viability of a student's development plans or suggesting areas where difficulty may occur reassurance was given to increase learner confidence.

Developing the second stage of the assignment

The second part of the assignment focused on the actual development of skills and reflective practices, accounting for 60% of the final grade. Students were required to provide a portfolio of evidence detailing how their chosen skill was developed, and reflecting on and analysing their experiences to discover which strategies of development worked and which failed. Again, clear guidelines were given to encourage 'deep' learning, with guidance questions offered to encourage reflection. Guidance questions included: Have you improved your skills levels? By how much and how can you tell? What strategies worked and what didn't? What would you do differently next time? Using these reflective questions and the development portfolio, students could digest and reflect on their learning experience, encouraging students to *review* the degree of development (LO 3).

To encourage learner autonomy during the skills development stage, learning activities were controlled by the individual learner, and developing skills using real-life situations was actively encouraged. Placing skills development into the context of everyday life and learning from experience was critical to the success of the module, as it reinforced the importance of continued personal development and the effects on everyday life.

'Deep' learning was also encouraged, by allowing students a level of freedom in what and how they studied, not only encouraging 'deep' learning but raising student awareness in *what* and *how* they learn (LO 1). By contextualising experiences and encouraging 'deep' learning, transference of knowledge was also encouraged [7]. Tutorial guidance at this stage was offered on an individual basis and peer discussion and support was actively promoted

Assessment for the second part of the assignment was broken down into three sections: portfolio of evidence, reflection and analysis, and presentation of information; each section accounting for 20% (Fig. 1). Assessment focused on the learning process and the tools used, rather than on the outcome of the process; i.e. the ability to perform learning tasks to meet learning objectives rather than success of skill development. By assessing the learning process rather than the outcome, students were not penalised for honest assessment and reflection but were rewarded for the ability to perform learning tasks and reflect upon experiences. Therefore, reflective practices were not compromised to meet assessment requirements. Further reflection was encouraged via a student questionnaire, which was completed at the end of the module.

STUDENT FEEDBACK

At the end of the module, once the second part of the assignment had been submitted, students were asked to complete a short questionnaire to promote further reflection and provide information to course tutors on the student experience. The questionnaire was distributed to all 35 level-two undergraduates participating in the module, only one student did not respond.

To promote individual reflection and understanding of the learning experience, open-ended questions were asked to provide information on: the student's learning intention, the area of learning they performed best and worst in, the most difficult aspect of the module and, finally, the most important thing learned during the module. These areas were chosen to establish student engagement, the usefulness of teaching activities, the benefits of the module, and areas for further development.

Engagement in the module

The first question students were invited to respond to was 'What was your main goal for this module?' This question was asked in order to identify learning intentions, as a crude indicator of 'deep' or 'surface' learning. As questions were open-ended all responses were highly individualised, so some responses were included in more than one category. The majority of students indicated intrinsically motivated goals that signified 'deep' learning intentions. The majority of students (62%) stated that their main goal was to improve their key skills/way they learn, whilst 17% of students wanted to change their attitude and behaviour towards the way they work. A typical student's response being '[my main goal for this module is] to see a change in the way I work with respect to confidence and assertiveness'.

We can be assured that a student stating skill development as their main goal had intrinsically rather than extrinsically motivated goals, as assessment focused on the learning process rather than the outcome of the process. Students were not penalised for unsuccessful skill development, therefore wanting to succeed at skill development meant motivation must have been internal to the student and not linked to assessment. Further intrinsically motivated goals included understanding learner behaviour (5% of the cohort), the ability to plan and organise work (2%) and take responsibility for one's own learning (2%). Extrinsically motivated goals were minimal, with only 5% of the cohort stating that their main goal was to get good grades.

As students were given a high degree of freedom over skills selection (to promote intrinsic interest, engagement, 'deep' learning and ownership of the project), students were asked why they had selected a particular skill for development. It was anticipated that a small number of students would have selected a skill based on ease of development or other forms of weak reasoning. However, reponses showed high levels of reasoning skills and this may be attributable to the first assignment and subsequent presentation, encouraging students to understand the value of skills development, especially when given the opportunity to develop their skills and gain academic credit for doing so.

The most frequent response to skill selection was

that the skill was most important to the individual learner (41%). A typical student response being: 'I examined the circumstances (studying abroad) and consequently chose my English communications skill'. The second most cited reason was to select the weakest skill (35%), with teaching and learning activities such as key skill tests and workbooks featuring heavily in student responses: '[I decided on my skill to develop] from undertaking all the exercises in the [self-evaluation] booklet and identifying my weakest [skill]'. Further reasons included the importance of a skill in future careers (9%) and degree courses (6%): 'I have chosen the most interesting [skill], as well as the skill that heavily influences my further career'; '[I have chosen the skill] which I felt would benefit me and my engineering course'. These responses demonstrate that students were managing their own education and career development. The remaining 9% of the cohort did not respond to the question.

Meeting the learning objectives

From the question 'What did you perform best in?', it was established that teaching and learning activities were a useful means of meeting learning objectives. Fourteen per cent of students thought that they had performed best in 'gathering information on learning experiences' (and evaluating learning strengths and weaknesses). For many students, this had been the first time they had evaluated themselves as a learner. One student stated: 'I had thought about my own skills and how to assess them for the first time during the assignment'. Guidance on how to evaluate skills levels had therefore been invaluable to the cohort, aiding understanding of the learning experience and effectively identifying areas in need of further development, thus contributing to the attainment of LO 1—understanding *what* and *how* to learn.

No student selected identifying learning needs, the second learning activity, as the aspect they performed best in. However, from the question 'How did you decide which skill to develop?' (analysed in the previous section) we can appreciate that students performed this learning and teaching activity well, demonstrating levels of planning for further development (contributing to attainment of LO 2).

The highest number of responses for the aspect of the module performed best was the creation of development plans (22%). Questionnaire responses demonstrated that students were engaged with the development-planning aspect of the module and could identify benefits from planning work. For example, one student stated:

'[I performed best in] developing a strategy which allowed me to have a structural approach to the work, although the structure needed to be amended.' This student demonstrated the ability to plan work (LO 2), review the success of plans (LO 3), and make necessary amendments (LO 4). Another student stated: '[I performed best in] my strategy plan. I had planned it well and had a range of different ways to improve rather than just one.' This student displayed the ability to plan and organise work (LO 3) and examine how he/she learned by trying out various strategies for development (LO 1).

In terms of reviewing progress and analysing strategies, 11% of students stated that this is where they performed best (LO 1&3), whilst 8% of the cohort stated they had performed best in evaluating and reflecting on the learning experience. Evaluation and reflection was not limited to the internal perceptions of students; rather, students began looking for ways to improve reflection and gain more objective views in evaluating their development: '[I performed best in] . . . evaluate the improvements I had made based on my opinions and the opinions of other people.' The remainder of students felt they had performed best in aspects associated with writing the assignment, in their level of creativity in the assignment and in delivering the assignment presentation.

The most important thing I learned was . . .

To develop an understanding of the module from the student's perspective, the question 'What was the most important thing you learned?' was asked. This was asked to determine whether students had gained an appreciation of Personal Development Planning and what factors of learning had been significant to them. The majority of students (68%) stated that the most important thing that they had learned was about their learner identity and ability to improve their learning behaviour (including developing skills):

'I have learned about myself and my limitations as a student, from this I can build up my skills.' The remainder of students identified the importance of skill development (6%), the ability to assess strengths and weaknesses (6%), ability to plan and develop strategies (8%), reflection and evaluation (3%). The remainder of students either did not respond to the question (8%) or responses were too learner specific to categorise (6%).

One of the most interesting points revealed from student responses was the level of new-found confidence that students had gained from the module: '[The most important thing I learned was] the importance of key skills . . . improve my confidence in my ability to work independently.' Another student wrote:

'I <u>am</u> able to improve my skills—I know exactly what my strengths and weaknesses are.' It is this new-found confidence that may encourage students to develop further, taking the newly acquired skills and knowledge learned during the module to truly engage in Personal Development Planning.

Areas for further development

To understand where students encountered most difficulty, the cohort was asked what they found to be the most difficult part of the module. This question was asked to discover common areas of

difficulty, so that improvements could be made to the module in the next academic year. The majority of students stated that actual skill development was the hardest part of the module (14%): '[The hardest part of the module was] being able to reorganise the way I work, as this has become the norm to me for several years.' A further 10% stated that taking responsibility for their learning has been the hardest part of the module. The remaining responses were skill assessment and selection (6%), reviewing progress (2%), developing structures and strategies (4%) and evaluating and reflecting on performance (2%).

Responses to the final question, 'What did you do least well in the module?', highlighted a possible explanation for the number of students who identified skill development and taking responsibility for learning as the most difficult aspect of the module. On analysing responses, it was revealed that a large number of students had time management difficulties (23%), although these were often disguised as other difficulties. For example, one student stated that she performed least well in 'continuous monitoring [of skill development]; it is very hard to continuously monitor whilst having so much coursework in other modules to fulfill.' Although students may have had a large workload, the response still suggests that time management had been an issue rather than the skill of continuous monitoring. These responses are a cause for concern, as time management is an essential skill necessary for controlling one's own learning, and therefore a degree of additional guidance in time management will be included in next year's module.

DISCUSSION AND CONCLUSION

Evidence provided by student questionnaire responses shows that the module was successful in helping students acquire the necessary learning tools and knowledge to manage their own personal development. Designing the module around Biggs' theory of constructive alignment made the module design relatively easy, due to guidelines offered by the QAA. Following these guidelines and aligning tasks and assessment proved successful in helping students achieve the learning objectives, ensuring that PDPs met QAA requirements [3].

Student reaction to the module has been overwhelmingly positive, with students embracing the opportunity to gain a deeper understanding of their individual learning identity/behaviour. The majority of students displayed 'deep' levels of learning (95%) and the application of skills development in real-life situations helped students to transfer personal development to outside of the classroom. The underlying explanations for why the module was so well received by students requires further investigation and will be investigated in the next academic year. Those involved in the design and implementation of the module offer the following anecdotal explanations as to why the module may have been so successful among students

Lecturer enthusiasm

The level of engagement in skills development has almost certainly been affected by the tutor. The tutor selected to teach the module genuinely believes in the benefits of Personal Development Plans and this enthusiasm must, to some extent, have been transferred to the class. The module was offered as a practical module to learn about one's own learning processes, using real-life situations so that students could see and understand the importance of skills development without large volumes of additional paper-based academic work. By using real-life situations, students could see first hand the benefits of skills development and so be further encouraged to develop.

Raise awareness of learning weaknesses/potential to develop

Students often lack the ability to self-evaluate their learning skills and so are often unaware of potential areas for development. Engineer in Society helped students develop self-evaluation techniques, so each individual could identify learning weaknesses and opportunities to develop. To these students, the Engineer in Society module became a module of self-discovery, one student stating:

'Initially my ultimate goal was to try and get a good mark in the module. I was not really concerned with developing the key skills, as I had all the skills I needed. However, during the course of the programme I discovered that I have a lot of skills to develop for both my career and self-development.' This student explains that, prior to the module, he thought he possessed an acceptable level of skills, but on self-evaluation it became clear that further development work would be beneficial. As each student evaluated his/her own skill levels, the need to develop skills became clear in the student's own mind, providing a level of motivation that would not be present if the tutor were to identify the student's learning weaknesses and select which skills to develop.

Provide opportunity/motivation

The majority of students were aware of learning weakness and opportunities but chose not to develop these skills, for a plethora of reasons. Reasons such as a lack of: opportunity, time, self-motivation, confidence, and understanding of how to develop. The Engineer in Society module was presented to these students as a good 'catch up' opportunity to develop known weaknesses in order to improve academic work and increase employability. By presenting the module in this way, students were less likely to see the module as additional work and more as an opportunity to gain accreditation for developing skills that have been of concern to the individual.

As demonstrated by this student: 'I should have developed my IT skills years ago; for a small moment of effort I have achieved more confidence and increased my level of competence in the use of Word and Excel, which will provide me with much benefit.' Now this student has developed a perceived weakness and recognised the benefits of doing so, he/she may be encouraged to develop other areas of weakness.

Formalised learning

Making learning plans and recording learning helped students to evolve explicit goals, sub-goals and strategies to be used to develop skills. Although this was unlikely to affect whether a student enjoyed and engaged in the module, recording and formalising learning in this way appeared to have an effect on student time management skills and self-motivation. As the skill development stage was largely in the control of the learner, following strategies and targets enabled students to progress with confidence whilst developing as an autonomous learner. During the development stage, students recorded everyday activities that contributed to skills development, so that, by the end of the module, reflection could occur to evaluate levels of improvement and associated benefits. As we do not reflect on our learning very often, it is difficult to estimate how much has been learned, but by using records of their development students could see for themselves the benefits of this development, and this may have had a positive effect on student engagement.

Furthermore, tutors believed that the feedback students received during the module was essential to their development, ensuring students had the confidence to proceed to the next phase of learning. Feedback was given at four separate stages.

Stage 1. Student presentation prior to assignment 1: detailing self-evaluation results, skill selected for development, strategies for development. Tutor and peer feedback given, so modification of strategies could occur before actual development.

Stage 2. Assignment 1: as above, plus incorporation of presentation feedback. Tutor feedback given.

Stage 3. Assignment 2: detailing actual development phase, reflection and evaluation of skill development/learning experience. Tutor feedback given.

Stage 4. Questionnaire results: questionnaire analysing key skill knowledge, expected and actual levels of difficulty in topics, and deep or surface learning tendencies. Results distributed at end of module.

Hawthorn Effect

Another possible explanation for student engagement in skills development could be attributed to the Hawthorn Effect [8]. Students on the module were aware that their skills development was being researched. As students were aware that they were involved in a research project, this may have had a direct result on levels of engagement.

Experiences in this module suggest that PDPs will be invaluable to students if delivered appropriately. Prior to this module, many students did not possess the learning tools or confidence to manage their own development. Now that the learning tools had been acquired and the benefits of self-improvement had been appreciated by individuals, many students indicated that they will continue with personal development.

The assignment and assessment methods developed for the Engineer in Society module could be applied to any skills-based module, thus successfully ensuring that students participate in Personal Development Planning.

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REFERENCES

1. National Inquiry into Higher Education (Dearing Report), *Higher Education and the Learning Society*, HMSO, London (1997).
2. J. Biggs, *Teaching for Quality Learning at University*, SRHE and Open University Press, Buckingham (1999).
3. Quality Assurance Agency, Universities UK, Universities Scotland, SCOP, LTSN (no date), *Guidelines for HE Progress Files*. Available online at http://www.qaa.ac.uk/crntwork/progfileHE/contents.htm (accessed 1 October 2004).
4. J. R. Blumhof, *Personal Development Planning: The New Skills Agenda*, Workshop for the University of Glamorgan, Pontypridd, Learning and Teaching Support Network (LTSN) (February 2004).
5. P. Coates, The 16–19 core skills initiative, *Curriculum Journal*, **2**(1) (1991), pp. 43–53.
6. F. Marton and R. Saljo, On qualitative differences in learning—I: Outcome and process, *British Journal of Educational Psychology*, **46** (1976), pp. 4–11.
7. M. Hammond and R. Collins, *Self-Directed Learning*: *Critical Practice*, Kogan Page, London (1991).
8. SixSigma (no date), *Hawthorn Effect*. Available online at: http://www.isixsigma.com/dictionary/Hawthorn_Effect-557.htm (accessed 4 May 2005).

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