

Bringing quality to industrial placements through the GRASP process

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Considerable progress has been made at King Alfred's College (KAC) in integrating industrial experience into the Design and Technology curriculum.

The department of Design and Technology offers three undergraduate courses all of which incorporate teacher training. These are: a 2 year Bachelor of Education (BEd) for mature students from industry; a BEd (Honours) with main subject D&T for students destined for Primary schools; and an innovative 4 year BA (Honours) which allows a choice of pathways;

1-Certificate in Education or

2-Certificate in Industrial Studies

The choice of pathway is made upon successful completion of the second year by which time all students irrespective of career choice will have undertaken two one week placements in industry or commerce supported by five one day visits to a variety of businesses.

The Comino Centre based at KAC., has, through the teaching of D&T, offered its students, not a fixed model on which to achieve, but a culture of continuing questioning and process awareness, which has led to enhanced learning and effective management of change. The *GRASP* (Getting Results and Solving Problems) project has helped considerably in reviewing our approaches to Design and Technology with a continual examination of our work and evaluation of our results.

□ The GRASP approach

Key Questions

What am I trying to achieve?	Purpose
What am I really trying to achieve?	re-statement
How will I know if I have succeeded?	Criteria
What alternative ways are there to achieve this?	Strategies
How should I control the process of getting there?	
What is my purpose — is it still valid?	Review
Why... this objective?	this way? Continually question

The central focus on intended results is a key distinction between *GRASP* and the various models of problem solving which superficially it otherwise closely resembles. This focus on results has two consequences:

1. it brings about a shift of emphasis from the burdensome notion of problem to the releasing notion of answer
2. it requires us to draw on the energy of imagination: the activity of picturing desired end results is a creative endeavour which continually weaves its way into the actual endeavour of bringing about those results

By adopting the *GRASP* approach we continually question the aims, objectives and solutions, therefore enabling a greater understanding of the problems in a more constructive light in order to achieve a more desirable result.

The *GRASP* framework has been used through King Alfred's College Comino Centre to promote the learning experience of the students, teachers and industry whilst taking part in an industrial placement. This has been achieved through applying these approaches to both setting up and undertaking these experiences. The framework which is equally applicable for long or short placements, prompts all the participants to question their motives and intents.

This process, by which the change of attitudes and behaviour is managed, has become increasingly internalised by the D&T students of KAC and this change has led to exciting opportunities for all concerned. (See B. Egan Establishing a culture of process awareness)

☐ What should be the aims and objectives of a placement?

Initially the main aim was to enable a student to 'experience' an industrial environment, with the objectives being to understand the constituent parts of a modern industry and commerce and the relationship of those parts to one another.

The earliest secondment had the students concentrating solely on work shadowing exercises, within various departments of the host company.

Evaluative feedback from the students undertaking these initial placement highlighted the problems of too much information, in too compact a time scale and difficulties in understanding the relationships. In any new situation it takes a period of time before any meaningful understanding can result.

☐ What are the prerequisites for a successful experience for the student?

Before embarking on an industrial placement, the KAC students are asked to consider their own and the course objectives for a successful placement. Some meet this challenge with scepticism as they have already worked in industry until it is made clear that the aim is to broaden their range of knowledge and awareness. The environment of school and industry are plainly different, but common ground can be found. Our students are asked to meet with the companies that they are placed with to identify and negotiate their joint objectives.

☐ What are the desired outcomes of this placement for both parties?

It is important to stress, the quality of the relationship or the partnership of the people concerned recognising one's own strengths and capitalising on them is crucial to achieving a successful outcome. The act of negotiation, clarifies the vision and defines the essential criteria for a successful placement. Once this has been established the set task is hopefully tackled with enthusiasm and determination. The

negotiating process should have committed both parties to positive action and continual review of both process and content of the set task.

Beside endeavouring to allow the student to experience 'industry' we are also aiming for the student to appreciate the nature and relevance of Design and Technology theory as studied to the everyday practical environment. As a basis for learning there is only so much that can be fully understood by instruction and the completion of the learning cycle is achieved by doing or participating in a meaningful way and is central to the courses.

Since October 1991 the secondments have been centred upon 'tasks' jointly negotiated by the company and the college. This has resulted in positive benefits for all concerned;

■ Company

The company gains by the student undertaking a 'task' that perhaps due to other priorities has always been placed on one side but is still relevant and worthwhile and benefits from a fresh approach and additional manpower.

■ Student

The student gains from a 'hands on' experience of solving problems in a designerly way and will still achieve the original learning objectives of understanding the constituent parts of a company but through the need to resolve the Task and therefore inherently their relationships.

■ College

The Design and Technology department and college gain from the constructive and purposeful activity undertaken and the fostering of good relationships with the host company on which to build in the future.

☐ How will we know when we have succeeded?

In the first instance by completion of the Task successfully, all students are required to present their proposals to the company on the last day for their evaluation, and secondly students are required to keep a diary and log during the placement and report back both verbally to the peer group and through a written report. The company reports through a proforma (see appendix 1) on the general individual performance of each student supported by more specific comments relating to the jointly negotiated aims and objectives.

The examples below give an insight into the gains from adopting the *GRASP* approach to industrial placements

■ British Rail South Western Division

To illustrate the above points, during the last academic year a group of 4th year B Ed students were seconded on placement as part of their industrial awareness programme. One student was Richard, and BR was the industry identified for his placement. Richard, who had originally been a carpenter prior to joining college, was given the task of investigating aspects of the internal communication system within the south western division of BR. This task negotiated with BR was seen as a valuable investigation for an outsider to undertake, as he would not come to the project with any preconceived

ideas or prejudices. The process described led to a one week placement and culminated with a written report which was presented to BR and later to his peer group a college 2 weeks after the secondment.

Richard having undertaken the task negotiated with BR, could relate the experience as relevant to the classroom — the need for information to be passed on quickly and accurately is essential not only in industry but also in schools.

■ County Windows Winchester

Two students Melanie and Joe were placed with the Sales Director of this company who specialise in the manufacture and fitting of Double Glazing of a high quality. Three possible tasks were negotiated with the company all possible within the one week duration of the placement. Prior to actual start the students were interviewed by the Sales Director enabling an insight of the opportunity and personalities to be assessed by both parties. This is an important aspect to achieving a successful and rewarding experience for both the company and the student.

The main task undertaken was in the area of market research and customer feedback. Melanie and Joe undertook to approach other companies in the same product area for evaluation of their approaches. They also investigated standard forms of market research which resulted in a new questionnaire. The result is more accurate and pertinent information and greater ease for the client to supply this.

‘This placement was interesting from the point of seeing a Company structure, and as a design placement. We were asked to design a questionnaire for the company which may not be the same as designing a car, but all the same processes are involved’

Joe. 2nd Year BA student industrial placement report

Another example of GRASP in action, was the setting up of Tricia’s secondment with BR.

□ What were the joint objectives — where they realistic

It was established that Tricia wanted the opportunity to go into the world of work and increase her own knowledge and credibility in the field of education and industrial links. Also she wanted to investigate BR’s curriculum materials, other management structures and appraisal systems. BR were interested in a report on why there were so few women in the SW region of BR, in spite of an equal opportunities policy since 1952. They were looking for recommendations as to how they could recruit more women into the industry.

BR employed Tricia for a week and paid for her supply teacher. Her next contact after initial negotiation with BR was the Teacher Placement Service. The advisory teacher, BR and Tricia, discussed their joint aims and objectives and how they could achieve them.

What process would she use to achieve their joint objectives? When and how could she review her work?

Eventually, it was decided that her report should be entitled ‘Is BR a good employer for females? — An outsider’s viewpoint’.

During the actual week’s secondment, the TPS adviser debriefed Tricia and reviewed what she had achieved, what she still had to do, how she was to do it and the benefits she felt she had gained. This was very valuable, for so often one becomes involved in the task and forgets to step back to evaluate. This process was again repeated after the secondment had ended.

During the stay with BR, Tricia was invited to a two day management course entitled ‘Partnership for Progress’. The management consultant talked about school experiences, influencing the type of worker/employer you become. He was questioned on how recently he had been into schools and then invited into Tricia’s school to see pupils of just eleven and twelve working on their own mini-enterprise projects, linking with local firms, taking the initiative, setting their own goals and their own criteria for success.

Another outcome of Tricia’s secondment was the invitation by BBC radio to help make a programme on Teacher Secondment to be transmitted during Women’s Hour.

By using the GRASP philosophy of questioning, seeking the criteria for success and continually reviewing her progress both BR and Tricia achieved their goals.

Two important aspects arose from evaluation of the experiences to date. Firstly there is a need for a mentor to be assigned within the company to discuss the Task at a working level. Secondly, experience has revealed that pairs or groups of students in an unfamiliar environment achieve more. Through providing each other with moral support and problem sharing enabling them to settle in very quickly which is important in a short placement.

■ Argos plc

In recent and very successful placement for first year undergraduate students with ARGOS Plc students were placed in three groups of six students at different locations to solve the same task of rearrangement of the stock room but with very different restrictions within which to resolve the problem due to the nature of the environments. Working in teams and adopting the GRASP framework for positive action (Appendix 2) the students were able to identify possible areas for improvement and presented these finding to the store managers at the end of the week for evaluation. Also inherent within the task was the need to understand the methodology and philosophy of the company.

■ Company feedback

‘The teams learnt to deal with real situations and this necessitated finding out by asking questions and evaluation of the answers given. In particular they developed peoples skills (involving tact and diplomacy interviewing, praising, gaining critical acceptance) time and team management coupled with presentation skills to achieve the particular design targets set.

The end result of the project was assisted the three stores concerned in advancing their individual stock-room layouts either through direct take up of many of the students ideas or through re-energising enthusiasm to improve themselves. Freshness of uninhibited outside ideas gives credence to Voltaire’s perception that there is

no problem that can withstand the onslaught of continued thought!

The exercise was beneficial to all parties and I would anticipate that future projects could be arranged in future years with similar success. All too often have I seen theory loose its way or even break down when trying to adapt or cross over to a realistic business situation but with these projects that risk is reduced.'

Nigel Arnold Area Sales Manager

Two students who had been in Industrial Placement at Whitbreads were faced with a last minute hitch. When they arrived at their place of work, the manager had been taken ill and was unable to help with their secondment. However, the placement turned out to be successful for the students and the company concerned because objectives had already been jointly negotiated and strategies for success formulated. GRASP had given the students a framework to make their placement a positive experience.

□ Conclusions

It can be seen from the above that we not only expose students to the *GRASP* model but also draw on this ourselves to demonstrate the wide variety of contexts in which it is applicable. To transfer learnt skills across contexts in which it is applicable. To transfer learnt skills across contexts if valuable. Transferability is so frequently a problem and we often fail to utilise what has been learnt in one situation when operating in another.

It is a basic position of the *GRASP* project that transfer will not automatically occur to an adequate extent and strategies must be adopted to address this aim implicitly. The examples above illustrate ways of applying this to the nature of industrial contacts and placements.

The *GRASP* principles of using process to solve problems and get results applied to the establishment and operation of industrial placement has enabled greater understanding of the aims and objectives for companies, students and tutors with substantial benefits achieved in:

1. Student learning and independence
2. Design and Technology awareness and understanding, both in the students and within the companies involved
3. Improving industry/education relationships

We hope that this has demonstrated in some way an effective approach to industrial placements for students and tutors. We hope also that this illustration of the ways in which we underpin our work with the *GRASP* model will prove of value and that others will find useful the description of the process we have adopted.

□ Appendix 1

REPORT ON EXTENDED INDUSTRIAL PLACEMENT

Name of Student Date of Experience

Name of Company

Name of Company Supervisor

Nature of work done

day	1
	2
	3
	4
	5

This form is designed to help assess the knowledge, skills and attitudes which the student has demonstrated while placed with the company. You should aim to be as objective as possible when completing the sections. Please also complete the checklist of competencies and space is available at the bottom of the overall comments on the student's progress. Do not forget to fill in the recommendation for pass/pass.

1. General matters such as appearance, manner, and punctuality
2. Willingness to involve him/herself in the work of the firm
3. Relationships with colleagues
4. Major strengths and weaknesses, willingness to accept advice/criticism and to co-operate

□ Appendix 2

GETTING RESULTS

A FRAMEWORK FOR POSITIVE ACTION

THE BASIS FOR ACTION	THE QUESTION FLOW
1. DESCRIBE THE CURRENT SITUATION <ul style="list-style-type: none"> start where you are take time to get to know where that is use "outsiders" to help recognise what could be better 	1a. What is important? 1b. What are the circumstances? 1c. Who are the main characters and why are they important? 1d. What are the prevailing values? 1e. What are my feelings about the circumstances? 1f. What is the organisational setting?
REVIEW	IS A VISION EMERGING?
2. DESCRIBE YOUR DESIRED RESULT <ul style="list-style-type: none"> "brain storm" possibilities - use "lateral thinking" clarify the "vision" - describe where you want to be and what you wish to do define the essential criteria for success be open minded - again use outside help be specific - try to quantify, state time frame clarify your vision - again! 	2a. What are you trying to achieve? 2b. Why? 2c. Could it be even better? 2d. Is it realistic to try and achieve now? 2e. Will it ever be realistic? If so, when? 2f. Does it meet your criteria? 2g. Are there other options which more closely meet your criteria? Are you sure?
REVIEW	IS YOUR VISION CHANGING?
3. FORMULATE YOUR STRATEGY <ul style="list-style-type: none"> more "brain storming" identify/create the opportunities take small steps ("one bite of the elephant") identify the strategies you want to adopt look at your own strengths - value them! establish the criteria for success 	3a. What resources do I have - or can obtain? 3b. How can I best use them? 3c. What obstacles have to be overcome? 3d. How am I going to try and do so? 3e. When is the optimum time to try and do so? 3f. What are the possible consequences of doing so? 3g. Do advantages outweigh the costs of doing so? 3h. So what are you going to do about it?
REVIEW	IS YOUR VISION CHANGING?
4. IMPLEMENTATION <ul style="list-style-type: none"> take your decision with determination and enthusiasm communicate your decision where necessary educate, negotiate, ignore or simply force others commit yourself to positive action 	4a. Have you communicated your decision? 4b. Do others understand your motives? 4c. Are others committed to your decision?
REVIEW	IS YOUR VISION CHANGING?
5. CONTROLLING THE PROCESS <ul style="list-style-type: none"> set control standards (time frames or other systems of measurement) monitor against standards and measure deviations take actions to reduce deviations and ensure control 	5a. What is starting to happen? 5b. Why? 5c. How do you know? 5d. Is it the result you want? 5e. If not - what do you need to do?
REVIEW	IS YOUR VISION CHANGING?
6. DESCRIBE THE CURRENT SITUATION !!	6a. What is now important? 6b. 6c. WHAT IS YOUR NEW VISION?
REVIEW	

REMEMBER

1. IN THE QUESTIONS I.E. THE ANSWER!
2. GETTING RESULTS IS ABOUT DESIGNING A BETTER FUTURE!
3. GETTING RESULTS IS ABOUT PROGRESSIVE IMPROVEMENT!

SO

WHAT ARE YOU GOING TO DO ABOUT IT?

□ Appendix 3

■ ATTITUDES

Poor Excellent

1 2 3 4 5 6

Interest in the work of the placement

Interest in the projects undertaken

Awareness of the complexities of the firm

Awareness of problem areas

Understanding of the implications of Design decisions

Understanding of the manufacturing processes

■ SKILLS

Quality of organisation

Quality of management

Quality of work undertaken

Quality of ideas

Quality of application

Quality of communication

Ability to handle problems

Ability to express him/herself

Ability to make decisions

Further comments:

Recommendation for PASS/FAIL