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3 Stakeholder involvement for programme development

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Abstract

In the current Higher Educational landscape in Ireland, it is crucial for universities and institutes to identify an individual identity or ethos for each of their programmes and to act effectively to both foster this identity in its current students and promote it to prospective students. Almost every programme in DIT’s College of Engineering and Built Environment (CEBE) is in competition with similar programmes in other institutes or universities and differentiation of DIT’s offering is an important goal. This report describes the development of a framework for the identification of guiding principles for individual undergraduate programmes across the College. In addition, a pilot study was performed on a specific programme in the CEBE, the Product Design Level 8 programme, for which the initial phases of this framework were implemented and draft mission and vision statements were generated. The process of generating these statements was described and generic recommendations were made for the implementation of this process on other programmes..

Key words: *ethos, mission statements, multidisciplinary, programme development, stakeholders*

Project Outline

Background and Overview

The Higher Education Strategy Group presented a report in 2011 that states that more emphasis should be placed on the development of students’ generic skills within Higher Education, “especially those required for the workplace and for active citizenship” (p. 58). Leathwood and Phillips (2000) identified the drive in the Higher Education sector for quality assurance, accountability for outcomes and capability of graduates. Combined, these observations suggest that a holistic approach to formulating a philosophy for individual programmes is required in the College of Engineering and Built Environment and indeed within DIT in general. This project proposed the development of a framework for identification of guiding principles for individual undergraduate programmes across the College.

The primary aim of the project was to generate a structure to harness feedback from the various stakeholders of an undergraduate programme to formulate a philosophy for the programme’s future development. These stakeholders would include staff, graduates and representatives of various organisations in the field, both in industry and academia. The first task in the project was to identify a method of capturing the ethos of a programme in a manner which can be accessible to all stakeholders, from prospective and current students, to staff, to graduates and external parties.

Mission and Vision

I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth

(John Fitzgerald Kennedy, 25th May 1961, cited in Gilruth, 1975; ch. 2.1)

The statement above is widely credited with giving focus and meaning to the US space programme and paving the way for the efforts which culminated in Apollo 11 commander Neil Armstrong stepping off the Lunar Module’s ladder and onto the Moon’s surface on 20 July 1969. It is considered an excellent example of an effective mission statement.

In the corporate world, the aims and objectives of companies or individual business units are commonly communicated using the mission statement. Mission statements have also, however, been employed in academia (University of Central Florida 2005; Virginia Tech 2013) and in not-for profit ventures (Hofstrand 2009). Furthermore, Searight and Searight (2011) stress the importance of individual undergraduates developing their own mission statements.

A good mission statement aims to define a task clearly and concisely and inspire subsequent efforts. Radtke (1998) asserts that an effective mission statement should address three questions:

- What are the opportunities or needs that we seek to address? (purpose of the programme)
- What are we doing to address these needs? (activities of the programme)
- What principles or beliefs guide this work? (values the programme should instil in staff / students)

Perkins (2008) observes that a mission statement should perform a number of tasks. It should send a message clearly and concisely, inspire, drive transformation, differentiate one's market position, pull the organisation into the future, enable trade-offs (establish priorities) and guide daily behaviour. Jenkinson (2012) in his online post to UK SEO Agency offers a useful distinction between mission statements, which define "what's wrong with the world and how you intend to fix it" and vision statements which define "how the world looks after you've fixed it".

It was determined that the key output of this project would be vision and mission statements for the programme in question, generated by a combination of internal and external stakeholders. Lloyd-Jones et al. (1998) demonstrate the potential that exists to use multidisciplinary groups to plan curricula in an educational environment. The stakeholders to be consulted in the development of these are shown in Figure 3.1.

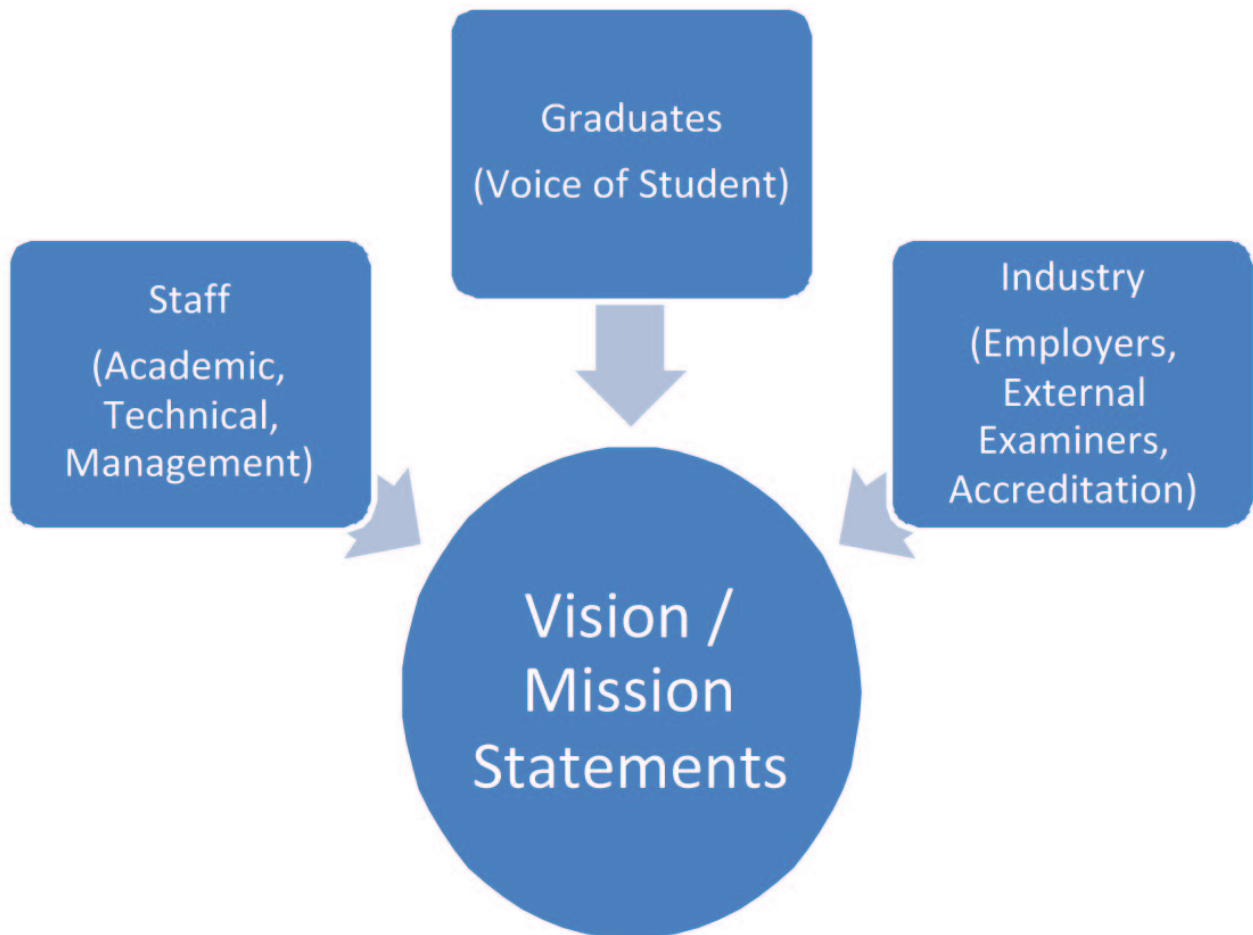


Figure 3.1: Stakeholders in programme development

Proposed Structure for Programme Development

An overall structure for stakeholder-centred programme development was developed (see Figure 3.2). This structure consists of the development of draft mission and vision statements on the basis of staff inputs, followed by evaluation of these statements by the various external stakeholders. The reasoning behind the order of these phases is that initial staff consultation can, at reasonably low cost, yield draft statements which act as a starting point for consultation with external stakeholders. Reasonably recent but not new graduates were chosen for focus groups. New graduates may not have experienced a suitably wide range of design scenarios in their post-graduation experience. For graduates who graduated some years ago, their views of the DIT programme may be out-dated by changes which have taken place since they graduated. In the case of the Product Design programme, this threshold was taken to be four years, as significant changes to the programme have taken place in the intervening period. When considering a longer-established programme, which is not changing to the same extent from year to year (for example Mechanical Engineering), it may be possible to expand this time period.

The methodology chosen for contacting external experts was interviews, whether in person or by telephone. Time and logistical pressures were thought to rule out the running of a group workshop with these individuals, and it was also felt that more candid feedback on graduates may be forthcoming in a one-on-one setting.

The final stage of the process is to feed back the modified mission and vision statements to the staff group, and to work with this group to develop action items which will facilitate the programme in aligning itself more appropriately to the statements.

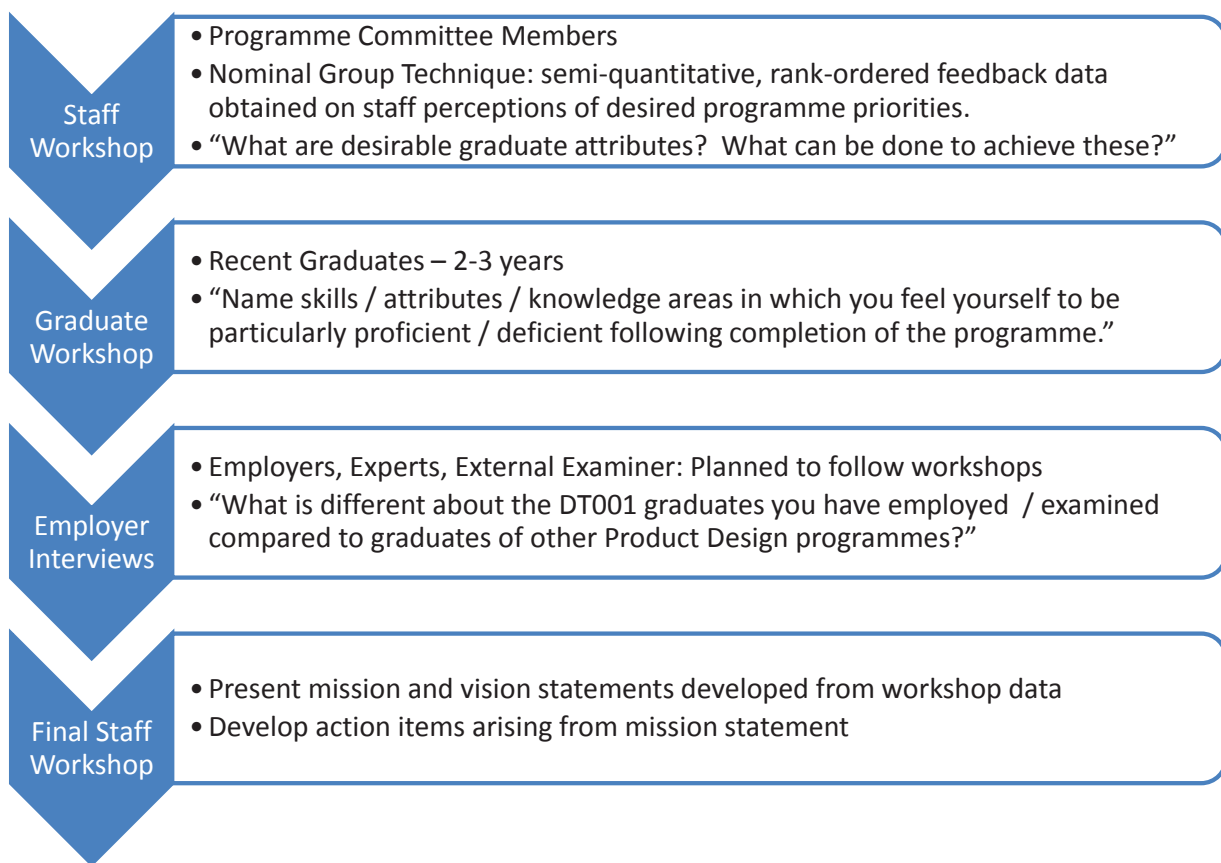


Figure 3.2: Proposed programme development structure

Pilot Study

DT001 Product Design programme

The programme chosen to act as a pilot study in applying the initial phases of this framework was the Product Design programme in DIT. It is an appropriate choice for several reasons. Much attention has been given recently, both in DIT and in the HE sector in general, to the importance of undergraduate engineering programmes producing graduates who are comfortable operating at a high level in innovative organisations, working in a wide range of environments and in crossdisciplinary teams. DIT’s Product Design programme is an example of this type of multidisciplinary programme. Since its inception in 2005, it has been extremely successful, with students winning national and international awards, and graduates moving on to successful careers in a variety of roles and sectors. Initially, this was the only Irish programme to address the intersection of Design Engineering and Industrial Design in this way. In the intervening time, however, several competing programmes have emerged in other institutes and universities. In a recent examination board meeting, an external examiner on the programme raised the issue of the programme’s unique identity and the need to establish, foster and focus upon this, both in terms of student recruitment and also as a guiding principle for the programme’s future development. Differentiation of the DIT offering has thus become a key aim for the programme.

Staff Workshop - Vision and mission statement generation

In this pilot study, the staff consultation phase was completed and draft mission and vision statements were generated (Figure 3.3). The Nominal Group Technique (NGT) was employed for the staff workshop. NGT is a weighted ranking method which enables a group to generate and prioritize a large number of issues within a structure that gives everyone an equal voice. It has been found to be useful in situations where individual ideas need to be elicited and ranked, but where group consensus is required. In this situation, using NGT neutralizes the domination of the loudest person, or the person with the most authority over the decision-making process. It has been used previously for curriculum evaluation (Dobbie et al. 2004). The NGT process consists of seven distinct steps:

1. Presentation of evaluation questions to the group
2. Silent idea generation phase
3. Round-robin feedback phase
4. Discussion/item clarification
5. Voting & ranking phase
6. Group data gathering
7. Suggestions for action items arising from the strengths / weaknesses

Part 1: Vision and mission statement

Participants were asked to write five desirable attributes of a product design graduate. They were given five broad themes for their contributions: technical, creative, business, social and miscellaneous. The first three of these reflect the three broad subject areas covered in the programme, the last two reflect generic graduate attributes which could be applied to other programmes (see Figure 3.4). In the next stage of the analysis, the attributes defined by the participants were gathered under common headings. This resulted in 21 overall headings of graduate attributes. The participants were then asked to give points ranking from 5 to 1 to what they felt were the most important of the vision statement items. These points were added for each item, giving a ranking of the various attributes (see Table 3.1).

Part 2: Action items

Participants were then asked to choose one vision or mission statement item from each of the five themes. For these items, they were required to state how the programme currently addresses this graduate attribute, and make a suggestion as to how the programme could address it in future. This resulted in 63 suggestions for action items addressing 19 of the 21 vision items.



Figure 3.3: Staff workshop participants

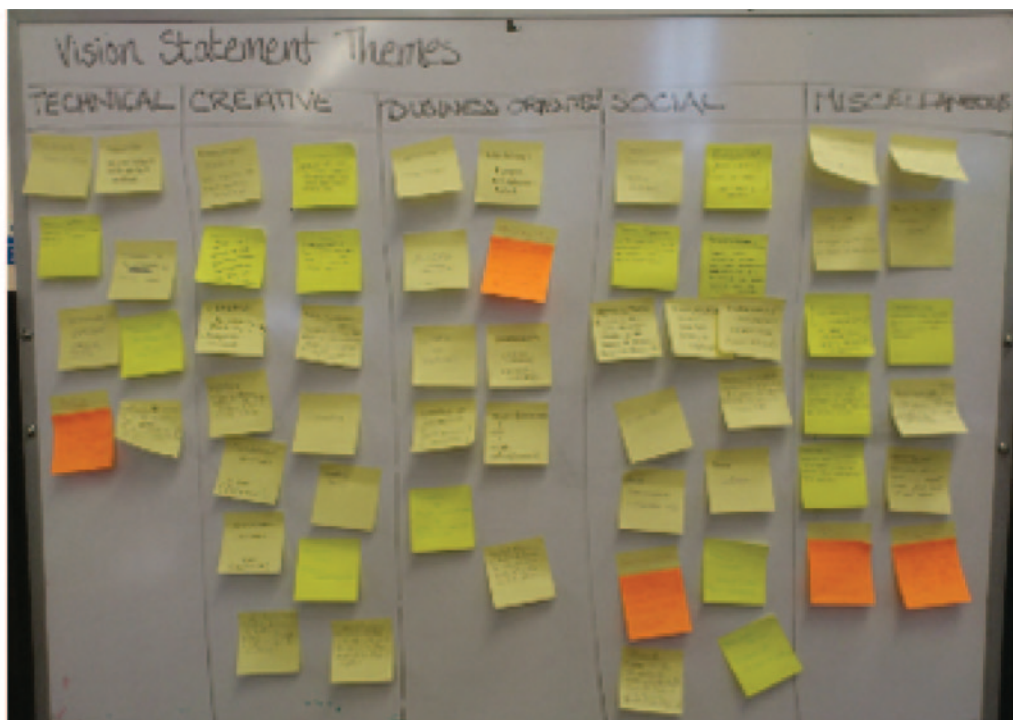


Figure 3.4: Contributions to vision statement themes

Results

Ranked attributes

Rank	Theme	Attribute	Importance
1	Technical	Technical knowledge	37
2	Creative	Imaginative and creative	34
3	Technical	Practical skills	14
4	Technical	Integrated approach	11
5	Miscellaneous	Motivated and visionary	9
6	Miscellaneous	Presentation skills	8
7	Creative	Problem solving	7
8	Miscellaneous	Logical	7
9	Miscellaneous	External experience	7
10	Creative	Look at big picture	6
11	Creative	Resourceful	5
12	Social	Flexible	5
13	Miscellaneous	Communication skills	5
14	Business	Entrepreneurial	4
15	Social	Team player	4
16	Business	Current and relevant knowledge	3
17	Business	Commercial nous	3
18	Business	Business plan drafting	2
19	Social	Interested and reflective	2
20	Social	Ethically aware and responsible	2
21	Social	Research ability	2

Table 3.1: Graduate attributes ranked by importance

DT001 Vision and mission statements

Figure 3.5 shows the vision and mission statements generated for the DT001 Product Design programme. Text items which are drawn directly from the list of mission and vision items generated in the workshop are shown in bold.

DT001 B.Sc. Product Design

Vision Statement

Product design is a process which aims to create improved solutions to old, new and predicted problems. The development of successful products requires designers who can firstly work to understand an identified problem, and can then **imagine, develop and communicate** many diverse solutions before selecting one which is most appropriate. Designers also build prototypes in order to **test, evaluate and improve** their designs. Effective product design involves the **integration of creative design thinking, technical skills and engineering knowledge, appropriate business practices and ethical and social considerations.**

Mission Statement

The DIT Product Design programme uses an **integrated approach** to teach mechanical, electronic, manufacturing and materials **engineering principles, creative thinking practices and entrepreneurial skills.** This **multidisciplinary** education fosters the development of **motivated, visionary** graduates who can apply **problem solving techniques** in a wide range of fields. The programme provides students with the **contemporary academic knowledge and relevant practical skills** that are needed to become leaders in the field of product design.

Strategies

- The programme is centred in **three separate Colleges** within DIT: the College of Engineering and Built Environment, the College of Applied Arts and Tourism, and the College of Business. This means that students divide their time between design studios, lecture theatres, computer and prototyping laboratories and meeting rooms. This rich environment produces **resourceful, flexible** graduates who understand the importance of products having **value to the user and society** as well as being **appropriate from materials, production and business standpoints.**
- From the outset of the programme, students are given open-ended briefs. These projects drive the development of their **critical thinking** skills, their ability to **look at the big picture** and their use of **logical** work processes to produce **creative solutions.**
- **Team** projects which focus on design for the community ensure that **ethical awareness** is engendered in the student, and that the programme produces **engaged and reflective** designers.
- Projects in which students are required to formulate **business plans** alongside developing their product ensure that **commercial considerations** remain a key factor in their **design thinking.**
- Regular design critiques and presentation sessions ensure that student's verbal and written **communication skills** are of the highest order.

Figure 3.5: Product Design vision and mission statements

Discussion and Recommendations

The structure described in this report aims to suggest a more integrated approach to the development of undergraduate engineering programmes. It is anticipated that identifying and developing each individual programme's guiding principles (in the form of mission and vision statements) and aligning these to pedagogical best practice and instant feedback from industry will greatly improve the student experience and equip graduates of the College to progress seamlessly from academia to the industry environment. Through staff and students being aware of the key attributes to be attained by graduates of the programme, a holistic approach to engineering pedagogy will be promoted, one in which the long-term aims of the student are emphasised alongside the teaching of individual modules.

The core recommendation from this project is to encourage programmes in the College of Engineering and Built Environment to identify, foster and promote their own unique identity for the purposes of graduate employability, student and staff morale and student recruitment. The results will be a core philosophy or ethos which will be used to guide both the pedagogical development of the programme and also efforts to promote the programme to prospective students.

On this last point, a key issue which has been raised in the College's student recruitment efforts is the perceived lack of clarity in the marketing of existing programmes to prospective students. A by-product of this project will be the identification of the specific attributes to be promoted in recruitment efforts. A proposal would be to survey first year students on what encouraged them to choose the DIT programme over other options and to compare these results to the outcomes of the graduate/employer surveys to assess recent CAO applicants' perception of the programme.

Conclusion and Future Work

Future work on the Product Design pilot study includes the execution of the subsequent steps described in the suggested structure to evaluate the draft statements. The second step in the structure, focus groups of graduates, is largely complete but due to space constraints will not be described here. When the pilot study process is completed, the aim is to generate documentation of the framework (questionnaires, focus group methodologies, etc.) so that this approach may be replicated in programmes across the College. For any individual programme, once the initial categories and stakeholder groups have been identified, a similar process would be pursued. While the Product Design programme will be the first implementation of this programme, the framework developed will be equally applicable to a wide range of other programmes within the College, from Architecture to Electronic Engineering, which have similar aims and operate in a similar environment.

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