

# WHAT DO THEY DO? A SURVEY OF EMPLOYMENT AND WORK SITUATION FOR "IDE" CANDIDATES

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## **ABSTRACT**

Design students are often concerned with a possible mismatch between their education and the real world reality in professional life afterwards. Industrial Design Engineering students at NTNU therefore in 2002 initiated a job-market survey amongst candidates from the IDE course. This initiative has been supported by the department and repeated biannually, latest in 2008. This paper is primarily based on the survey from 2008, The results are presented and discussed. Central issues here are: Employment, Time it took to get the first job, Type of company, Job tasks and Relevance of education. It has been difficult to find any comparable surveys, which makes this work hard to compare with other design or engineering educations. The job situation for IDE candidates is good and stable, with 35% in industry, 20% in design consultancy and 20% in IT and communication, 10% in education/research and 15% in other sectors. Candidates value the experience with projects and team work highest, when asked to evaluate the education. There is a wish for more basics in economics and management within the education.

*Keywords: Work experience, job situation, industrial design engineering, evaluation of education*

## 1 INTRODUCTION

Young people today, wish to get a good education and a meaningful job. The growing interest for various studies within design indicates great expectations towards the future of creative industries. Taking the UK as an example, the number of undergraduates studying design and creative arts-related subjects has risen from 87,170 in 1996-97 to 140,195 in 2003-04, a leap of some 53,025 students in only seven years.[1] A recent survey of the UK design industry published by The Design Council in March 2010, counts 232.000 designers in the UK, and reports low level of recruitment[2]. Looking at these figures shows that design graduates in England will have a hard time finding a job and a large number will end up working as freelancers or start their own business. In the UK, in 2009 28% of the designers are freelancers[2] and 60% of these have annual fee income less than £50.000.

This apparent mismatch between educational capacity and job opportunities for designers is concerning both students and educators, but seems to be rarely addressed in academic discourse. However, Evans and Spruce present a good discussion of the topic and explore product design student expectations of working in the design industry[3]. They find a 'disconnect' between student and industry perspectives regarding the importance of commercial awareness[3].

A number of new programs of Industrial Design Engineering (IDE) or Product Design Engineering (PDE) are lately established internationally with similar programs in many universities[4]. These programs often have started as an integration of two traditionally disparate fields – (mechanical) engineering, and industrial design – with the intention to develop 'integralists'[5] who are fluent in all areas of the product development process. These programs when first started, develop their own profile and gradually build up expectation by potential students and in industry. This is a dynamic process, where students, faculty and industry are the main stakeholders.

## 2 METHOD

The MSc. in IDE education at NTNU, Trondheim, Norway was established in 1993 and graduated the first candidates in 1997. During the years The Department of Product Design has maintained contact with almost all graduating students, thus building a good network of industry contacts as well as an opportunity for feedback on the education. Real life projects in cooperation with industry are

introduced to the students already in the second year and this network has shown extremely valuable for finding appropriate projects which suit the goals of the education

The first work survey was initiated by a group of students in 2002 and then repeated biannually with backup from the department. In 2008 the survey was posted by e-mail to 137 of a total of 146 candidates graduated in the period from 1997 to 2000. Of these, 108 persons or 79% responded to the survey. The response rate was 68% in 2006, 83% in 2004 and 80% in 2002, with respectively 68, 69 and 38 responses. The questionnaires have been developed by the students, and thus reflecting in an implicit way their view of the education and ideas of professional practice. The questions have evolved from the beginning, but the structure and underlying concerns are still the same. Opportunities for job, what kind of jobs and tasks, and the relevance of education. The survey of 2008 was run in an electronic form using the survey system QuestBack[6]. The system presents the result in an anonymous form and provides functions for presentation and analysis of the data, included basic statistics. The survey was comprehensive with 36 questions which gives a great number of possibilities for analysis.

### 3 THE SURVEY

The following account presents findings from the survey in 2008, based on a report in Norwegian which can be downloaded from NTNU's website[7]. Of the 106 respondents 60 were female and 66 male, but difference between genders is not elaborated here. Several topics addressed in the initial report are omitted in this account. This includes: international exchange, cooperation with other professions, geographic distribution and perceived industrial awareness of the IDE education.

#### 3.1 Employment

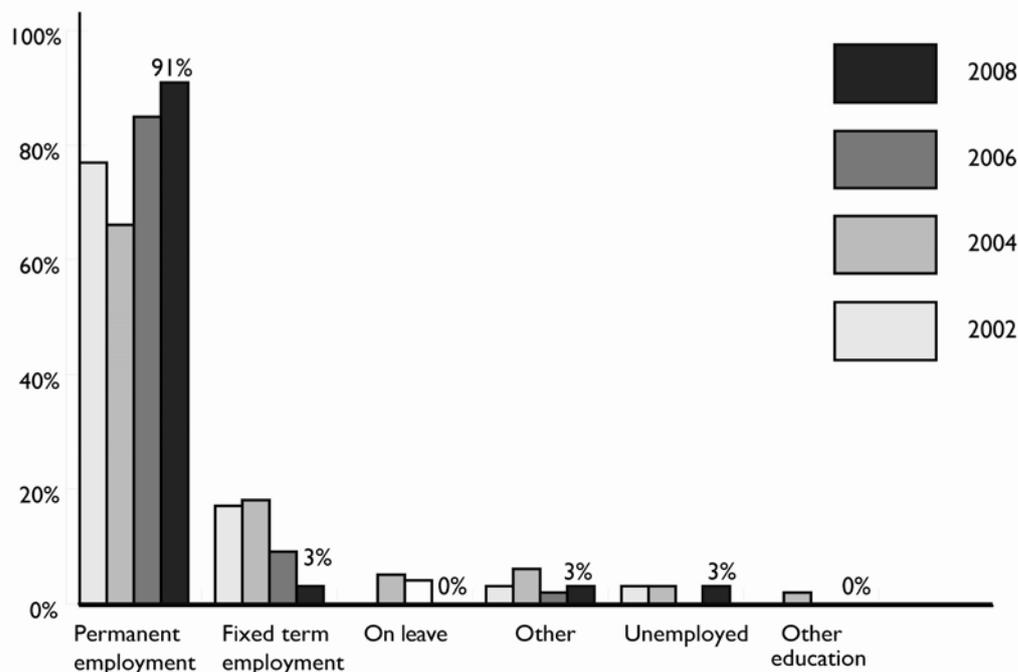


Figure 1. What is your current situation of employment?

Figure 1. shows a large majority of the candidates in permanent employment, which has been increasing up to 2008. Level and development of salaries for IDE candidates is comparable to the average given by Tekna - The Norwegian Society of Graduate Technical and Scientific Professionals[8].

### 3.2 Entering the job market

Several questions in the survey address the issues of how the candidates got their first job and how long time it took. It should be noted that practically all the MSc. thesis projects are carried out in cooperation with a company or an external part. This lead directly to a permanent or a fixed term employment for 18% of the candidates while 46% say that they found a job related to the topic they worked on in their theses.

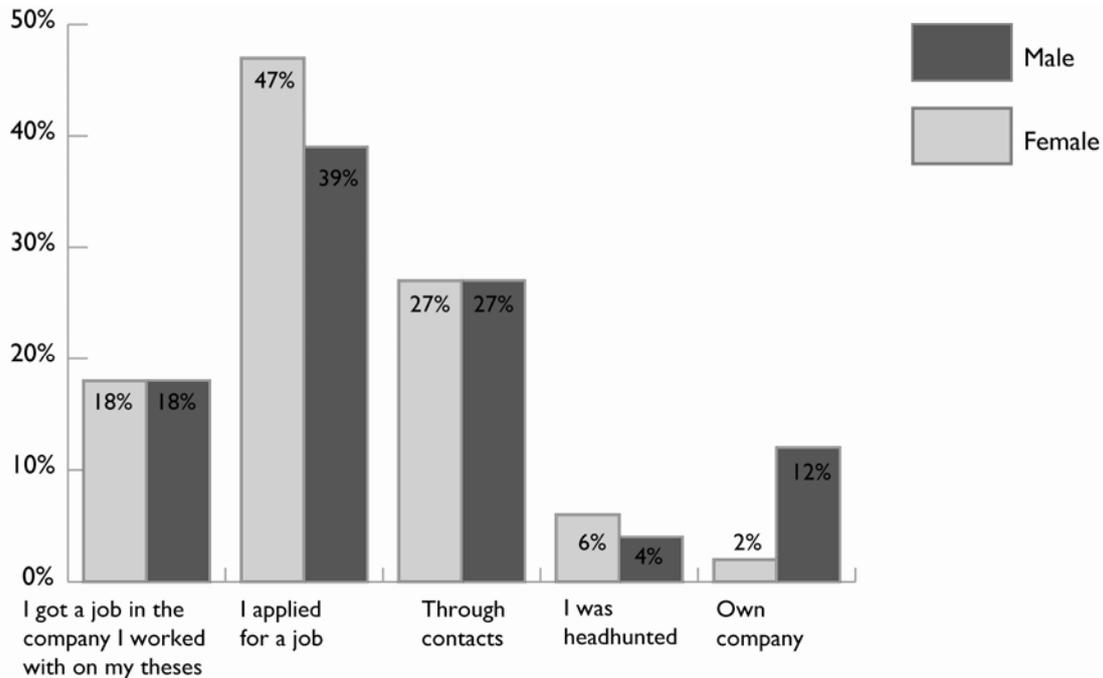


Figure 2. How did you get your first job?

There is notable difference between men and women, when it comes to starting an own company, while the data are otherwise similar. Figure 2. refers to the first job, but generally 10% of the respondents report to have started an own company. Personal contacts seem to be important for entering the job market.

### 3.3 The job

The job market is primarily Norwegian, with only 4% of the candidates working abroad. See Figure 3. The dominating sector is Industry and offshore. Offshore, in this case refers to companies developing and supplying products and technology for the Norwegian oil industry. This sector being the largest is a recent development as the survey from 2006 reports this sector only as 24% and consultancy whole 35%. The rest of the sectors have been stable.

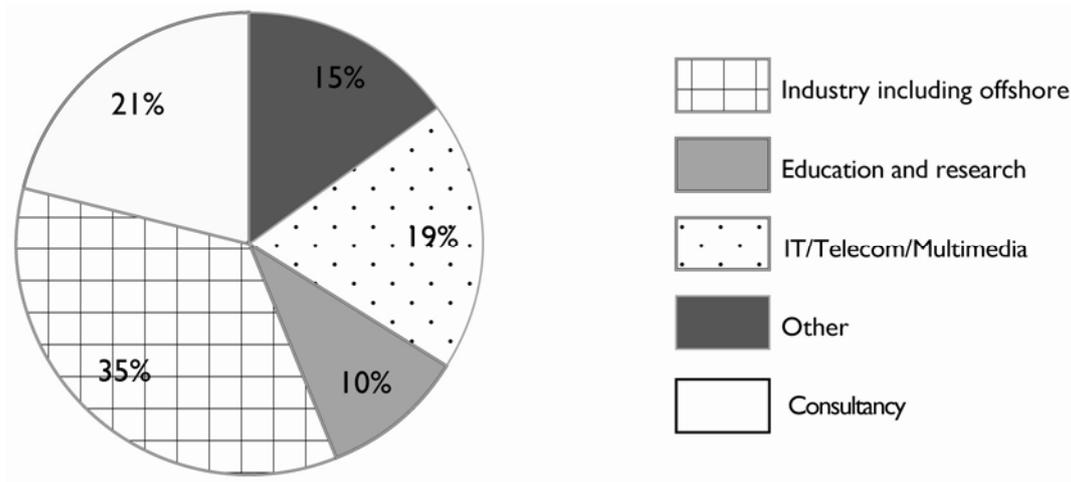


Figure 3. In which sector do you work?

The sector “Other” warrants an explanation as it is here we observe new sectors of employment. The main categories here are Marketing (6%), Municipal and governmental services(4%) other education (3%) and no reply (2%). The IT/Telecom/Media sector is also a diverse group, but many candidates in this sector work as usability specialists in development of internet services.

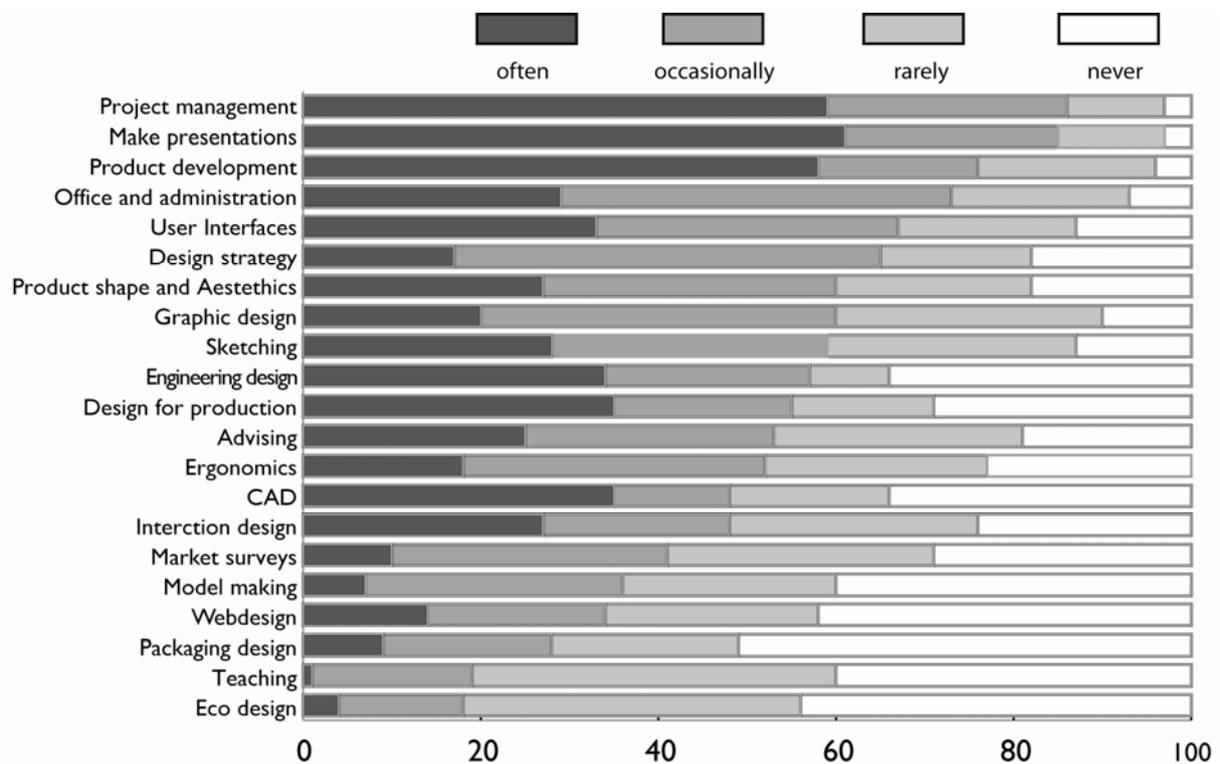


Figure 4. Which are your main tasks?

Most candidates will have to: manage projects, make visual presentations and work with product-development. Naturally, there are variations between sectors, but further analysis shows that these three tasks are among the top four, apart from research and education, where product development is long way down the list. One should note here that the categories are defined in the questionnaire and can be said to reflect the real world as it is observed by the students. For example Ecodesign is a topic in the curriculum, while the term seems to be little known in industrial context.

### 3.4 Relevance of the education

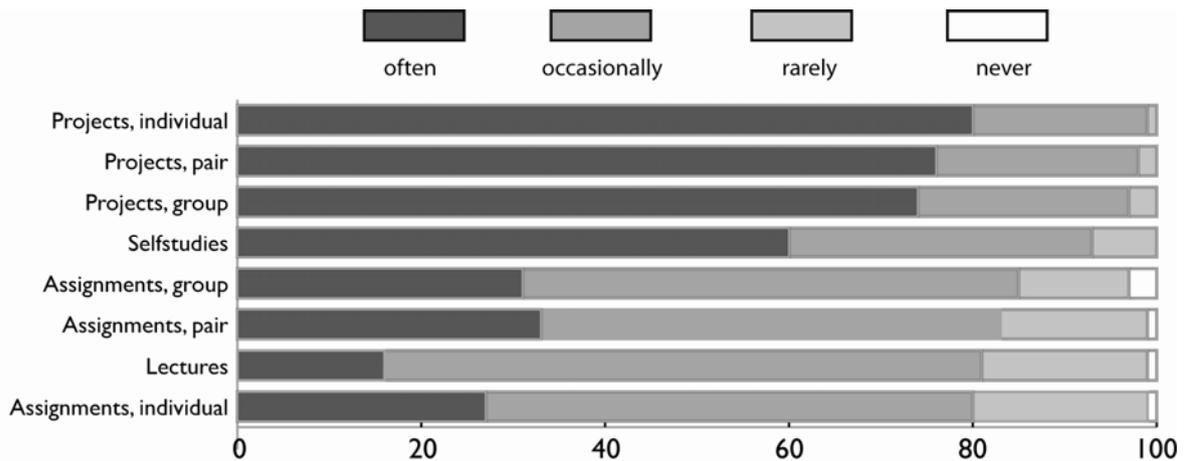


Figure 5. Relevance of different learning methods.

Project-work is the most valued method for preparing students for their professional life, with little difference between individual and group projects. This is further confirmed in Figure 6. where experience with group and team work is the most valued memory from the school days.

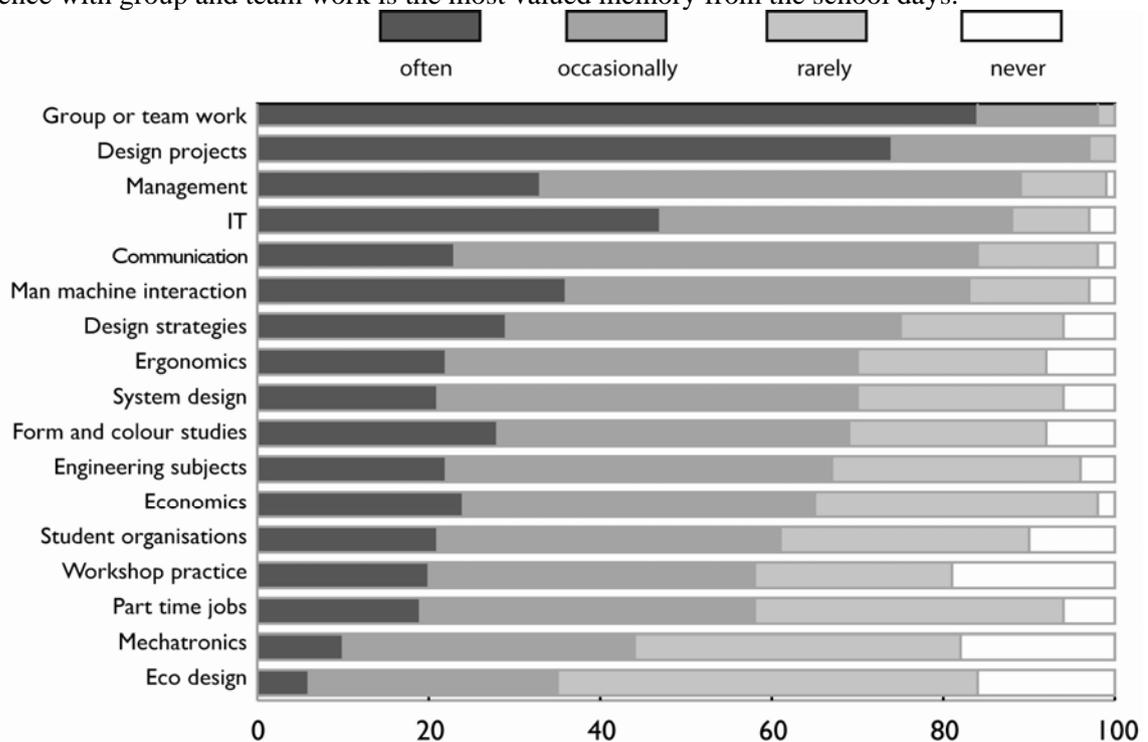


Figure 6. Relevance of educational topics and experience.

The design projects, a string of 10 modules spanning from the first to the last semester are also highly appreciated. The 10 project modules including the final thesis cover 1/3 of the curriculum and include several of the other topics in Figure 6; amongst others design strategies, system design and mechatronics. Engineering subjects include the basics in mathematics, physics, mechanics and materials science more than 20 % of the curriculum.

### 3.5 Improvements of the education

The last question in the survey asked for suggestions to improve the IDE education at NTNU. The comments point in different directions. Most clear is the wish for more focus on commercialization an economy, which is mentioned by approximately 15% of the respondents. More focus on design, with practicing designers as tutors comes second, followed by recommendation of more profound technical knowledge and integration of the engineering topics into the project work.

### 3.6. The current situation

A new survey was presented in April 2010, where the number of respondents falls to under 50% due to technical problems with contacting the alumni. Because of the lower response and limited time we have not included the results from the new survey. The results however confirm the general picture of the job market. The division between sectors (Figure 3.) and common tasks (Figure 4.) are practically identical to the 2008 survey. The most notable difference is the increase in fixed term employment from 3% in 2008 to 9% in 2010, which reflects the generally tighter job market.

#### 4 CONCLUDING REMARKS

- The survey questionnaire and the results outline a professional identity shared by the students and candidates. This is characterized by design and product development attitude, while the mechanical engineering and sciences traits are less visible. The basic engineering subjects have seemingly a low relevance.
- Several comments in the survey suggest development of the education towards product realization and commercialization.
- The surveys have been a valuable input to the education and motivated the students, but there is a potential to utilize the results better for development of the curriculum.
- Perhaps the time has come to initiate a major revision of the curriculum similar to the revolution of the IDE curriculum at TU Delft in 2007. 'The school aimed for a radical revision of its bachelor curriculum in order to overcome some long-lasting weaknesses of former programs, in particular, the lack of utilization of engineering science and behavioral science in design projects' [9]. A competency directed curriculum, with better integration of topics and more clearly defined learning outcomes for the design projects.

#### REFERENCES

- [1] UK Higher Education Statistics Agency, 2008. Retrieved from <http://www.designcouncil.org.uk/>
- [2] The Design Council, *Design Industry Research 2010*, <http://www.designcouncil.org.uk/our-work/Insight/Research/Design-Industry-Research-2010/>
- [3] Evans M. and Spruce J., "Life after the Party: Student Experiences and Graduate Expectations", *In Proceedings of EPDE08*, 2008, Barcelona Spain, pp. 761-766.
- [4] de Vere, I., Melles, G. and Kapoor, A.(2010) 'Product design engineering - a global education trend in multidisciplinary training for creative product design', *European Journal of Engineering Education*, 35: 1, pp.33-43,
- [5] Eekels, J., 1987. Guidelines for engineering teachers concerning educating the engineer for innovation and entrepreneurial activity. *European Journal of Engineering Education*, 12, 259–270.
- [6] Questback, Product Information. <http://www.questback.com/Product/QuestBack/> ,2010.
- [7] Leonardo, IDE student organisation; *Arbeidsmarkedsundersøkelsen 2008*, (In Norwegian) [http://www.ivt.ntnu.no/docs/design/2008\\_arbeidsmarkedsundersk\\_leonardo.pdf](http://www.ivt.ntnu.no/docs/design/2008_arbeidsmarkedsundersk_leonardo.pdf)
- [8] [http://www.tekna.no/ikbViewer/Content/791590/2009\\_Tekna\\_Salary\\_open-to-non-members.pdf](http://www.tekna.no/ikbViewer/Content/791590/2009_Tekna_Salary_open-to-non-members.pdf)
- [9] Roozenburg N, van Breemen E. and Mooy S., A Competency-directed Curriculum for Industrial Design Engineering, *In Proceedings of EPDE08*, 2008, Barcelona Spain, pp. 423-428.