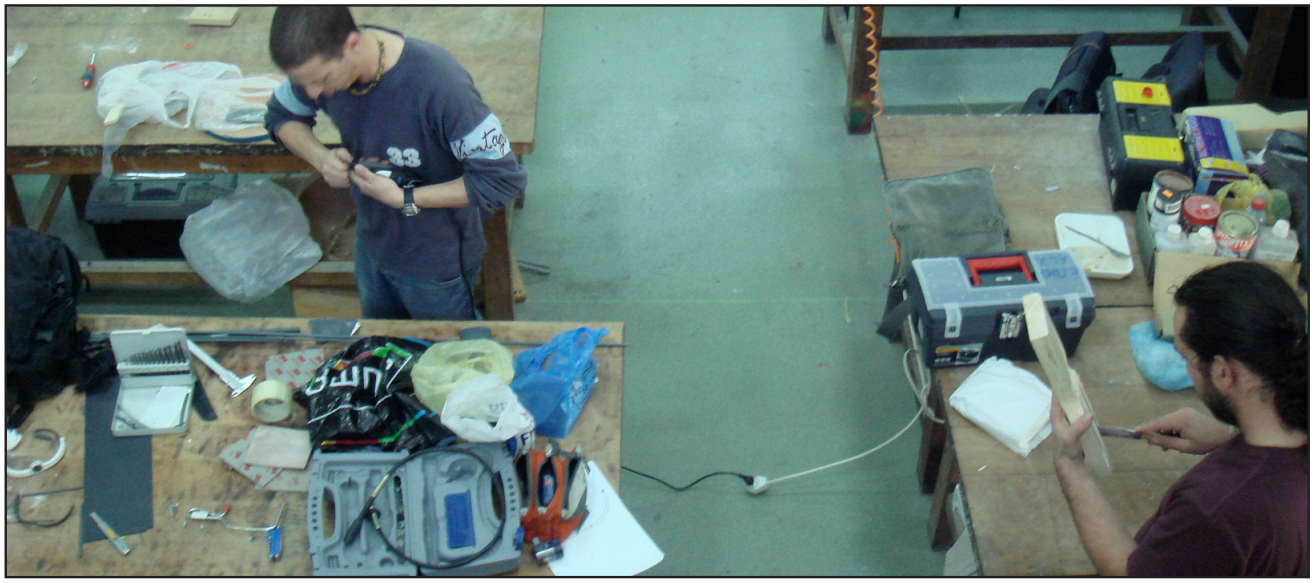
COUNCIL FOR HIGHER EDUCATION
המועצה להשכלה גבוהה
مجلس التعليم العالي

Planning & Budgeting Committee ▪ הועדה לתכנון ולתקצוב

Committee for the Evaluation of Academic Quality for Industrial Design Studies

Evaluation Report



Industrial Design Studies within the Israeli System of Higher Education

Academic evaluations December 2007 - January 2008

Background

At its meeting on October 31, 2006 the Council for Higher Education (CHE) decided to evaluate study programs in the field of industrial design during the academic year 2006-2007.

Following the decision of the CHE, the Minister of Education, who serves ex officio as the Chair of the CHE, appointed a committee for the evaluation of academic quality of industrial design studies consisting of:

- **Prof. Rosanne Somerson** Department of Furniture Design, Rhode Island School of Design, U.S.A., Committee Chair
- **Prof. Gabriela Goldschmidt** Faculty of Architecture & Town Planning, Technion – Israel Institute of Technology, Committee Co-Chair
- **Prof. Edward Colker** retired Professor and Provost, Pratt Institute, U.S.A
- **Prof. Haim Finkelstein** Chair of the Department of the Arts, Ben-Gurion University of the Negev
- **Prof. Jan-Christoph Zoels** Senior Partner, Experientia, Italy
- **Ms. Alisa Elon** Coordinator of the committee on behalf of the CHE.

During the period December 2007 - January 2008, committee members conducted a two-day visit to each of the institutions offering study programs in the field under examination.

Within the framework of its activity, the committee was requested to submit the following documents to the CHE:

1. A final report for each of the institutions, which would include an evaluation of industrial design study programs, the committee's findings and recommendations.

2.1 A general report regarding the status of the evaluated field of study within the Israeli institutions of higher education.

2.2 Recommendations for standards in the evaluated field of study.

The committee's letter of appointment is attached as *Appendix 1*.
This report deals with the committee's general impression of the field of Industrial Design within the system of higher education in Israel.

The committee members wish to thank the management of the institutions and the ID departments for their self-evaluation reports and for their hospitality towards the committee during its visits.

Industrial Design studies in Israel- a general overview

The first industrial design department in Israel was established at the Bezalel Academy of Art and Design in the 1980's. This development was in line with a similar trend world-wide and facilitated the establishment of industrial design as an independent discipline.

The committee for the evaluation of academic quality of industrial design studies evaluated all study programs in industrial design within the Israeli system of higher education that were recognized by the CHE at the time the committee was appointed. These study programs are offered at four academic institutions, as follows:

Bezalel Academy of Art and Design (Bezalel): offers a bachelor's degree in industrial design (B.Des).

In addition, Bezalel recently opened a master's degree program in industrial design without thesis (M.Des). However, since Bezalel underwent the accreditation process and received permanent authorization to grant the M.Des degree in ID without thesis shortly before the self-evaluation report was submitted, that degree was not included in the self-evaluation process.

The Holon Institute of Technology (HIT): offers a B.Des in ID.

Shenkar College of Engineering and Design (Shenkar): offers a B.Des in ID.

The Technion – Israel Institute of Technology (Technion): offers a master's degree in industrial design with thesis (M.Sc.).

Structure of the study programs

The study program leading to a B.Des in ID is a four-year program (8 semesters) and requires the following approximate number of credit points at the various institutions:

Bezalel -120 credit points.
HIT- 140 credit points.
Shenkar- 160 credit points.

All of the B. Des programs employ a single track format. The M.Sc., offered at the Technion is a two-year program (4 semesters) and requires 46 credit points.

Introduction

Industrial Design is a dynamic and rapidly changing field that increasingly impacts industries, economies and societies throughout the world. Technological advances have pushed Industrial Design to the forefront in developing evolving definitions of products and services and of communicating those advancements. In light of these developments, it is encouraging that the higher education system has responded to these burgeoning needs by establishing several new Industrial Design programs and further developing existing ones.

The Committee observed a wide range of expressed visions or conceptual frameworks informing the stated missions and goals in the institutions that were visited and evaluated. However, the Committee also observed inconsistent clarity regarding those visions relative to the contemporary field of Industrial Design. In instances where the full range of opportunity in the contemporary field is not addressed by the curriculum adopted by the Program, education may fall somewhat short. Consequently, when a limited perspective dictates curricula, educational outcomes cannot reach their full potential. ID departments and schools need to develop unique visions of ID education to distinguish themselves from other schools and communicate this vision clearly and accurately, and then structure Programs accordingly. This need for clear identity, state-of the-art standards, and appropriate institutional resources and facilities is made further evident when one regards Israeli Industrial Design studies in relation to other international programs of Industrial Design. Further awareness of cutting edge theory and practice on an international level is crucial to position Israel as a leader in Industrial Design education. This is an important, relevant, and achievable goal for Israel, as the State is a center of concentrated high-technology industries that help to drive the economy. Additionally, the talent pool and interest in design education is prevalent. Israel has a strong foundation in building excellence in the design disciplines.

The Committee found that some institutions were not internally aware of the significance of these advances and their potential influence on industries, communities, and services. Specifically, institutions do not fully recognize the potential role of their own Industrial Design Department in building educational excellence, academic reputation, and successful outcomes for the overall institution. Enhancing the status of the field (and the Programs) within the larger institutions that house them is an important goal moving forward.

It is commonly recognized that good design has a direct and positive economic impact, and the foundation for good design is, of course, in good design education. Internationally there are many government and cultural groups investigating the direct relevance of an emerging creative economy. 'Design

thinking' is regarded as a key enabler of entrepreneurial activities within Small and Midsize Enterprises (SME) as well as with larger corporations as a way to further innovation and to evolve user-centric products and service development in contemporary times.

Good design also impacts and expresses cultural entities. In Israel, with its inherent and complex issues of cultural identities, design can be both a bridge and a solution—a bridge between past and future, and a solution for improving diverse understanding.

Many corporate visionaries have recognized a new view of design education as being as valuable as standard business degrees in influencing the business sector, or perhaps even more valuable Advocates point to the creativity and critical thinking processes imbedded in design education that promote business innovations. The growing addition of CCO's (Chief Creative Officers) in the corporate world is direct evidence of this realization. Interdisciplinary work inherent in contemporary design education serves as a model of practice, and informs new approaches to the creation of service and product development in industry. New models of inquiry, such as collaborative and interdisciplinary projects as well as emerging practical forms of applied research are creating new areas of knowledge with direct benefit to industry.

Study program

Design education in Israel needs to answer the growing need of industry to integrate design processes in its development of new products and services to compete on an international scale. In view of global developments in this area, it is also imperative for design education to span the RANGE of design positions extending from traditional product design to systems thinking, service and interaction design; from focus on social practices or sustainability to marketing and design management; from an industry focus to an innovative entrepreneurial orientation, as well as to artistic practice which helps to develop the more conceptual edges of the field.

The Study Program should reflect – and this indeed is borne out by international experiences – an awareness of the possibilities inherent in teaching and research collaborations of industrial design with business management, international studies, engineering, computer science, social and behavioral sciences and other relevant partnerships. Intra-faculty collaborations with other design programs such as visual communication, animation, fashion or textile design, as well as with fine arts departments and architecture schools need to be developed and expanded.

The ever-widening horizons of design activity, with the growing diversity of practices and deepening social and cultural implications, mark also the need to be supported by the teaching of the contextual aspects of design as well as the history and theory of the field. Other educational needs include various areas of theoretical understanding derived from the social sciences and cultural studies. The learning activity in these areas requires extensive reading and writing, and it is indeed essential for seminar classes to emphasize writing and research. One of the areas that we found to be consistent in needing further enrichment is the cross-fertilization between cultural studies, behavioral studies, critical theory studies, and art and design history with industrial design subjects. In order to improve student abilities in writing, research, and critical thinking, all of which are key factors to success as a designer, more resources must be allocated to seminar type courses. At present, the emphasis is on frontal courses, which serve a purpose but cannot achieve the same areas of student development that a seminar course can. Such shifted emphasis, which must be achieved without taking resources away from industrial design subject areas, is key to educating good designers for the future.

Current masters degree programs are evaluated by potential applicants, corporate research partners, and the media within an international perspective and context. Therefore, there is a need to differentiate and feature excellence on a global scale. The Committee felt after all of our visits that not every department or school needs a masters program, and that some programs might be better served to continue to build highly professionally oriented and distinctive undergraduate programs. This is preferable to developing master's programs that lack distinct vision and appropriate resources to achieve a high standard of excellence. There is value in undergraduate programs that directly prepare students to enter industry markets as well as with capabilities to address future developments within the field.

One factor somewhat unique to Israel is the high percentage of part-time graduate students. Unfortunately, in many cases, this precludes the kind of immersion that is often best for graduate study. If graduate education in design is to be developed, there will need to be a concerted effort to increase financial support to allow more students to concentrate on their studies without having to simultaneously work at demanding jobs outside of school.

All undergraduate ID departments we have reviewed are intensive four-year programs, leading to a professional Bachelor degree in ID. However, within the programs there is a huge variant of required credit points to achieve the same degree (Bezalel: 120; HIT: 141; Shenkar: 161). This creates confusion and possibly misconceptions regarding the intensity of studies in each of the departments in question. While some variation is acceptable, there should be a clear and comprehensive standard set by the CHE for the calculation of credit points so as to regulate the award of credit points for academic degree requirements. Internationally, for a BFA in ID, students need to achieve approximately 126-130 credits. For a professional degree in ID (the BID) usually

another approximate 30 units are required for a total somewhere around 156-160. These requirements could serve as guideposts for Israeli standards. At the masters level there is greater acceptable range for the MFA or the MID, with averages being around 66 credits for a two year program and about 96-99 credits for a 3 year program.

Faculty and teaching

Programs in Industrial Design in Israel construct their teaching staff in different ways. One prevalent factor that the Committee observed is the tendency for Programs to hire their own alumni. This occurs at a higher degree in some schools than in others. While this may contribute to the "family" spirit within the Program, it may also result in an overall lack of diversity of educational and professional backgrounds. We also observed that while the majority of students are generally women, the overwhelming majority of teachers are men. We were told as a rationalization that this is true of the field as well. However, many distinguished teachers and practitioners in the field on an international scale are women. Israel needs to make a commitment to fostering development of women teachers in the field, and should encourage more diverse and balanced hiring and promotion procedures.

Although the committee is aware of the fact that appointments and promotions are within the academic freedom of the institutions, we would like to make recommendations on this subject because of its importance and effect on the quality of ID studies. In universities in particular, but in colleges as well, hiring and promotion criteria are often based on standards derived from other fields of study. As an example, in engineering fields, which co-exist in several of the schools we visited, teaching staff are expected to have PhD's and are judged accordingly. This expectation may not be relevant in assessing excellent qualifications in Industrial Design, as few practitioners or teachers with international reputations have PhD degrees. The terminal degree is accepted to be the MID (Master of Industrial Design), MFA (Master of Fine Arts), or MSc (Master of Science). Other criteria that are relevant as a basis for determining achievement would be factors such as publications in leading design magazines and periodicals, presentations in international conferences and competitions, design awards, extended engagement with international design organizations, speaking engagements, international consultancies, exhibition participation in significant galleries, museums, and industry fairs (e.g., Milan Salone del Mobile), and works in productions that advance innovation. While it is unfair to expect achievement in all of these areas, this list can inform a basis for evaluation criteria. We recommend that criteria be revised to better integrate teaching excellence in Israel. Additionally, professional practice is valued to different degrees in different schools. There should be a critical mass of teachers in practice, and structures should be adjusted to accommodate them without penalizing them. Practice can take the form of working as a designer, design researcher, or practitioner developing the critical theory and history materials for the field. Where practice is considered, additional emphasis should be placed

on a range of types of practice to provide expertise for the many arms of the field (product design, industry consultancy, service design, systems design, interactivity, and so on). As a general rule, we found promotion procedures to be problematic for Industrial Design teaching staff.

Continued teaching excellence needs further support. Teachers seek not just support for training to become better teachers, but support for individual relevant professional projects and research when appropriate. These undertakings often strengthen connections with industry, while broadening awareness of current developments in the field, which enhances relevancy in study programs. Through projects, teachers are often exposed to new materials and equipment that may not be part of the Program, but that add teaching capacity in developing student knowledge. Many teachers did not even have offices in their schools, and no one had real project space.

Another concern of the Committee is either the complete absence of junior faculty or their small numbers in the schools that we visited. There are so few regular positions that most go to experienced teachers, but junior faculty need to be developed and mentored. In addition, some of the external teachers had the most up-to-date understanding of new areas within the Industrial Design field, and if these young teachers have no prospect for advancement, they may leave for regular positions elsewhere (in many cases outside of Israel) at detriment to the Program.

Recommendations

- Adopt a balanced hiring policy by promoting the recruitment of junior faculty and of teachers with diverse educational and professional background, and fostering development of women teachers.
- Adopt hiring and promotion criteria that are relevant as a basis for determining excellence in Industrial Design rather than follow standards derived from other fields of study. Hiring policy should take into consideration the need for critical mass of teachers in practice with diverse areas of expertise.
- Sharpen criteria for advancement, promotion, and sabbaticals and clearly communicate criteria and procedures for such.
- Develop incentives and recognition for adjunct faculty to enhance their commitment to the Department.
- Enhance opportunities for academic and professional development by investing in research and allocating resources for sabbatical leaves and travel support for participation in conferences and trade exhibitions.
- Increase collaboration with colleagues from other departments or faculties for mutual benefit.
- Develop teaching enhancement resources and encourage gained access in order to enhance pedagogical skills.

Students and learning

Design education is different from other modes of higher education in that it is based primarily on 'learning by doing' rather than on the assimilation of a well established body of knowledge. Visual literacy is particularly important in this type of education. It may be interesting to note that many of the ID programs we visited reported a high percentage of dyslexic students. Acknowledging the uniqueness of design education and students who select this study path has implications for curricula, teaching staff and students and learning issues. In this section we address the latter, including admission policies.

Admission policies

Admissions are well handled in all institutions we have evaluated, in that the screening of candidates is based primarily on actual design work they are asked to undertake for this purpose, in addition to prior work (portfolio) they submit. At the same time, academic achievements as reflected in high school records are also used to assess academic skills, and in most cases learning abilities as measured by psychometric tests are also used. All institutions have also reported ample procedures for controlling the academic status and suitability of students in various further points along the progression of their studies.

The credit structure of the curricula is mentioned above in the Study Program section as an area that needs improvement. Criteria for hiring and promoting faculty members of different types (regular and adjunct; those who come from practice and teach design studios and those who teach theoretical courses) are discussed in the Faculty and Teaching section above.

Student-faculty ratios

In studios, the established international ratio of teacher to students is up to 1:15. Limiting the ratio to this norm ensures proper individual tutoring and intensive teacher to student interactions, which are indispensable to design learning because of the hands-on learning and projects based work, often involving teamwork. This is the primary focus of first-rate design education and mirrors professional practice of industrial design.

A similar or even lower ratio of teacher to students is the norm in seminars (generally 1:12). This ratio is desirable in order to allow for a truly interactive mode of open discussion in seminars, which, again, is essential. This smaller ratio also makes it possible for teachers to help students to improve their research and writing skills in a deeper way, capabilities that should be requirements for good design education. Frontal lecture courses can accommodate a higher number of students, but one has to be careful not to exceed the number that allows for teacher-student contact in class, including the possibility for questions and answers. Furthermore, students in large lecture classes rarely develop writing and research skills in any significant manner. This will be addressed further in the next sub-section on work assessment.

Work assessment (measuring outcomes)

Studio work in all design disciplines is traditionally assessed by critics who evaluate the work in several commonly used formats. These critics include both teachers and guests. Guests may come from amongst the department faculty members, other departments in the institution, and outsiders such as faculty members from other institutions, practitioners, relevant industry contacts, and intellectuals from other fields. Some formats are based on evaluations and discussions in front of the group of students in the class with open discussion, while others center around individual sessions with or without the student. The range of assessment formats is varied, and seems to be determined by the department head and individual teaching staff. Different structures for critiques make sense, as there are different goals and issues throughout the educational progression of the curriculum, as well as different circumstances for specific studio goals.

It is important to stress that besides a general assessment of concepts and innovative ideas, assessments should also use high-standard professional criteria pertaining to the comprehensive development and completion of projects. Judging by studio outcomes we have seen, we feel that such criteria are not always implemented and some of the work we saw appeared to be evaluated along conceptual dimensions only, with insufficient regard for rigorous professional standards (e.g., functionality, user-friendliness, manufacturing feasibility, environmental considerations).

For theoretical courses, the assessment in most courses in the institutions we have visited is based on multiple-choice exams; written papers are required only rarely. Students and faculty members alike agree that acquiring writing skills and the reading requirements that are required for written studies are important objectives. However, because of the difficulties students encounter in reading and writing assignments, they are often given lower priority. Consequently, many teachers complain about the poor writing skills of ID students and their reluctance to read serious academic texts, and shy away from assigning papers as course requirements. It is our position that in the world of contemporary ID practice all types of expression, presentation and communication are important, including written texts, and therefore students should learn to write as part of their professional skills acquisition. It goes without saying that deeper knowledge, understanding and analytical abilities of all facets of design are desired. Therefore, fluency of reading academic texts in both Hebrew and English is a must if these future designers are to be integrated into the international design world.

Distribution of load

ID studies are very intense in all departments under review (and typically also everywhere else). In some cases the load is extremely high and not well enough distributed across the curriculum, such that in some years it is hardly bearable. In addition, in some instances students are engaged in up to four projects concurrently, in the same semester. This extreme workload has a negative affect on students' ability to maximize learning from each individual project. We consider four design projects in one semester rather excessive and think the number should be reduced, through more careful planning of the curriculum, which should aspire to a balanced distribution of the load throughout the four years of the curriculum.

Calculation of credit points

All undergraduate ID departments we have reviewed are intensive four-year programs, leading to a professional Bachelor degree in ID. Yet each program uses different yard-sticks to calculate credit points for its courses, resulting in a significant variation in the total number of credits that are required to complete the degree (Bezalel: 120; HIT: 141; Shenkar: 161). This creates confusion and possibly misconceptions regarding the intensity of studies in each of the departments in question. We recommend that the CHE develops a clear and comprehensive standard for the calculation of credit points in courses of the type taught in ID, and that these standards be mandatory for all institutions so as to regulate the award of credit points for academic degree requirements.

As stated earlier these standards could be based on a range set by the CHE rather than a fixed number, but they should be brought into closer alignment and based on providing time for deep development of the student through both breadth of courses and depth of experience. The commonly used international requirements described in the section "Study Program" could serve as guidelines for Israeli standards.

"Real-life" and international experiences

Despite the great value of studio projects, which often attempt to simulate real-life situations, they cannot do so fully in a typical school environment. At times they are highly experimental and even entirely conceptual. Therefore, projects in conjunction with industry, and internships in design firms, are extremely beneficial to students who are exposed to 'real-life' work conditions. Likewise, spending a semester or two in another school, preferably abroad, is a wonderful opportunity for students to be exposed to different design traditions, directions, and trends, thus helping them to widen and deepen their understanding of global design issues and opportunities. In all schools we reviewed, only a small number of students have had a chance to participate in exchange programs or internships, usually with little support from their institutions. All schools collaborate with industrial enterprises in student projects, but the extent of this collaboration is not significant enough and does not seem to be structured in a comprehensive integrated curricular manner.

Recommendations

- Maintain a reasonable teacher to students ratio in studios, seminars and lecture courses, according to international norms: 1:15 in studios, 1:12 in seminars and up to 1:80 in lecture courses. Should these numbers be compromised in exceptional cases, teaching assistants should be added to improve students' access to the teaching staff.

- Carefully consider the workload throughout the four years of studies so that it is reasonable and balanced, and avoids excessive loads. In particular, the number of design projects per semester should be reasonable so that students can achieve high-level work. We suggest that three be a maximum number, but this of course depends on scope and expectation of individual project assignments.

- Measure learning outcomes in studios, i.e. design projects, using conceptual and professional criteria alike. Whereas creative and innovative ideas and concepts deserve credit and esteem, rigorous professional criteria must also be implemented. Needless to say, all criteria for assessment should be clearly communicated to students at the outset of each project and throughout points along the project progression.

- Measure the outcome of theoretical courses by assessing how well students are able to present knowledge they have developed and accumulated through formats that include papers, essays and presentations. We suggest that written papers replace the current norm of multiple choice exams to assess knowledge gained in such courses as that change will raise the level of another kind of literacy for future industrial designers.

- Standardize credit point calculations across institutions to objectively and uniformly reflect the contact hours and work load in the different types of courses taught in ID departments.

- Further develop exchanges, internships and collaborations with industry and create structures for greater support of these educationally enhancing activities. Because of the importance of outside exposure, it is recommended that all schools make an effort to run more educational projects in collaboration with industry. Care must be taken to maintain educational goals so that companies do not regard the students as mere laborers in their service but rather understand the mutual benefit of investing in the next generation of well-educated designers. Internships in Israel and abroad, and exchange programs with high-level design schools abroad should be further developed and encouraged. Institute mechanisms to assist students in finding exchange/internship opportunities even if their financial means are limited and ideally, increase financial support for such enterprises so that merit rather than means dictates participation.

Infrastructure and resources

Infrastructure can be defined as the "basic foundation and framework for a system or organization". In the education of industrial designers, training support is characterized by the quality of creative space, the characteristics of facilities, the presence of special equipment and staff, and the supportive resources such as workshops, libraries, and material labs that allow conceptual development and eventual completion of projects and proposals.

No longer (as in the past) is the education of Industrial Design defined as a teaching of skills primarily for the modification and styling of products for home, tool and general use. Programs now attempt to prepare students to enter a much more rigorous and challenging landscape of design professions, in a new and fast-moving changing professional universe. Influences are often drawn from fields including high technology, electronic visualization, robotics, digital processing, architecture, craft techniques, social studies, human factors, behavioral sciences and critical studies of contemporary culture. This dramatically widened educational horizon places new responsibilities on industrial design programs and on their college/university hosts to provide the means and infrastructure for successful realization of the teaching and learning goals.

The Committee found a spectrum of differences at the department sites such as no "home" spaces for ID students to create and develop their work, and very few teacher offices or private student-teacher conference spaces. Instead there was a predominance of large, open, multi-functional areas that were not well planned or utilized. Many were in obvious need of improvement and/or complete redesign with unsatisfactory workspace, storage, lighting, and even systems such as proper ventilation. Safety warnings and hazard monitoring were adequate to good in some schools and only fair in others. Particle collection and ventilation systems are generally in need of review for improvement, both in workshops and in studio spaces. Exhibition and gallery areas were ample and inviting in a few schools but lacking in others. Some gallery and exhibition spaces were open at such limited times that the internal and external publics had little access. This inhibits the opportunity to showcase successful outcomes and excellent achievements to others. The range of new technology tools was also inconsistent, with students in some programs having far greater access to new technology tools than others. Additionally, the Committee heard that teachers and students were not always included in planning processes. This can result in space and facility planning and implementation that is inconsistent with best practice models for educating industrial designers.

Skilled lab technicians are yet another resource, as highly important stewards of facilities and equipment and they are generally viewed as capable in offering guidance and assistance. It is essential that they be welcoming to those who use the facilities, and that their efforts support the educational mission of the

programs in addition to the efficiency of the spaces that they oversee. In one visit, technicians were regarded as obstacles by some students rather than as partners in learning environments.

The special circumstances of Israeli students relative to other countries merits a serious review of scheduling and accessibility to laboratories, since the majority are working at part-time jobs during their studies in order to support their education costs. They often travel long distances to come to the studios and classes. If shops are shared--as they are in most cases with other, larger departments/units-- ID students vie for time to develop models and projects, a situation that can place them at a stressed disadvantage.

It may be difficult to persuade administrators that designers simply need more area per person (and project team) than a student at a lecture class; but since "hands on" is the basic learning component on the road to technological expertise this is an important reality of industrial design education. As one major employer of Israeli ID students noted, the skills that graduates should bring with them must range from the ability to draw and sketch conceptually at the earliest creative stage, to clear understanding of fabrication and manufacturing processes, to competent use of modern computer software at the final production/marketing and presentation stages.

Thus, shops, machines and tools are needed to foster hand skills, and complex digital modelmaking and electronic visualization stations are necessary to foster digital skills. A range of technologies is therefore required for excellence in industrial design education. The latter equipment is particularly expensive, but must be funded for an institution of higher learning. At least one college has obtained gifts from donors/manufacturers of rapid prototyping machinery for a digital center as well as a polymer laboratory. Partnerships with industry might be developed to improve facilities and equipment access.

Today's designers are most often valued for the way they work and the way they think as well as for the products they develop. Attributes necessary for the developing designer are the abilities to learn from multidisciplinary sources and to create in collaborative and team-based settings while remaining independently imaginative and agile. The Committee noted that all four programs we reviewed are admirably, perhaps perfectly placed within environments where art, science, engineering, architecture, history/theory and cultural studies can offer a richness of exposure as well as resources unmatched by schools with narrow specialization. If these opportunities are not encouraged in the curricula, it is a grave loss for the students and the programs.

We did not find evidence of strategic or tactical success in "building bridges" to cross-campus project development (except to some degree in one program) or learning opportunities. Teachers reported there were some such attempts

and some cooperation, but primarily through personal friendships, not in an institutionally organized manner. A general lack of understanding of research practices, areas of expertise, and opportunities within each other's disciplines is predominant. A showcase of information sharing through open houses, symposia, or other introductions would go a long way toward helping teachers and administrators to understand potential that exists within institutions for meaningful cross-fertilization. Students today must be educated for a wider reach than has been required, even in the experience of education by their teachers during their own training in the past. Attention to developing better use of shared knowledge is paramount in contemporary times. We raise this issue within "Infrastructures" since facilities access impacts collaboration and shared educational opportunities significantly. Scheduling of courses is often another impediment to meaningful project and course collaboration as well, and therefore needs institutional oversight consideration.

Libraries and information repositories are also changing. In this "information age" where texts, periodicals, journals, and color slides have been augmented and, to a great degree, replaced by the instantly available resources of the internet, educators have to carefully oversee how information is acquired and vetted. Dependence on Internet search is a mixed blessing, since many students show markedly less interest in reading and source authenticity is much harder to prove. This decrease could mean a loss to students in the values of deeper learning, and in using thorough texts (and pictures) that encourage creative critical thinking and inquiry. Since one of Israel's major universities asks for a fee and another does not allow borrowing privileges, ID students at three of the schools we visited (essentially a small population) must find other search sources for their research. This is regrettable. The importance of access and active use of library holdings, staff guidance and modern databases cannot be overemphasized.

As part of infrastructure support, college and university development and/or external affairs offices can play a significant role in realizing student and faculty goals by actively assisting in grant proposals, faculty development, funding (and shepherding) of student exchange and internships, research and development for potential patent award, and cultivation and connection to alumni.

Recommendations

- Include representation of participants in space and facilities planning, drawing from the expertise of those who will be working, teaching and learning from and within these resources.
- Create "home" project areas for students or project teams, and designate private and conference spaces for teachers where they can meet with students, colleagues, and industry partners, as well as keep teaching materials and records.
- Review access to laboratories; reconsider greater scheduling flexibility and better integration of technicians as part of the academic whole.
- Upgrade and modernize health and safety systems in workshops and create enforceable procedures for ensuring good health and safety practices.
- Develop a plan for increasing new technologies facilities in a digital era.
- Institute better sharing and access procedures for libraries and databases.
- Develop internal institutional support for research, patent award, and project development for students and teachers.
- Encourage and program joint research spaces across faculties
- Upgrade exhibition spaces and increase viewing hours to advance understanding and engagement by the internal and external public about the work that is being achieved.

Research

Research activities in Israeli ID programs need to foster interdisciplinary teaching and research collaborations across faculties and departments. In most ID programs visited, the potential of inter-Faculty collaborative research projects is currently underutilized.

These teaching activities need to be fostered, as they will also lay the groundwork for interdisciplinary research projects, motivate teaching staff and demonstrate research practices to students. Interdisciplinary research laboratories such as 'interaction design', 'inclusive design' or 'materials' labs could foster collaborations across different departments and Faculties as well as connect educational programs with national initiatives such as the material library at the Mediatheque in Holon.

Research in most undergraduate ID departments is currently understood as preparing undergraduate students in formulating and shaping their hands-on design projects. This takes the form of background literature and web search,

interviews with people (end-users) about their products and environments, as well investigations of materials and formal explorations. The committee understands the limitations of undergraduate research practices, and also recognizes the distinction of schools that are research institutions. In our visits, only the Technion fits in this category. However, the Committee stresses the importance of recognizing the role of applied research that is based on in-depth participatory, observational and inquisitive design methods (such as design ethnography, prototyping, and usability testing) in industrial design education that bases learning on a hands-on studio environment with real potential for development of new knowledge, systems and products. Key will be the integration of analytical and synthetic research practices into current and future educational models for industrial design.

In most institutions research by professors or staff is not clearly supported. There is no place to conduct research, no laboratories or designated spaces or staff. Student research criteria and opportunities within the curriculum are also ripe for improvement. The Committee feels more research provisions would directly impact the caliber of the program for both teaching staff and students, and would greatly enhance innovation and program content.

Only a few of the visited institutions have infrastructure in place for intellectual property (IP) evaluation, business development and commercialization, and where such infrastructures existed, they seem to be under-utilized by the ID programs. Support for these issues (IP development and protection, business incubation or initial funding sources) must be addressed on a national level and not remain solely the individual institution's responsibility. IP generation and ownership should support teaching, research and commercialization processes. A comprehensive IP policy should be modeled on similar activities in technology or research intensive academic institutions in Israel and abroad.

A healthy competition for funding and support could facilitate the specialization or even collaboration of current ID programs. Teachers consulting to industry or government should be encouraged. Thesis papers and projects need to be evaluated early on for outstanding ideas and insights that can be pushed into the business development pipeline. Innovation and commercialization criteria will need to be added to the current research criteria. A culture of entrepreneurship needs to be developed.

Several ID departments have been very active in pursuing industry-sponsored projects. Funding income needs to flow back to the participating departments and should encourage the involvement of internal and adjunct teaching staff. Current regulations do not allow for extra stipends to reward collaboration and research efforts by teachers. The Committee recommends rethinking this policy and establishing clear guidelines for research grants available for all teaching staff.

Nevertheless, dedicated project spaces or facilities are missing. Interdisciplinary research laboratories could foster industry collaborations across different departments and faculties. These labs could also facilitate multi-semester industry collaborations expanding the current timeframe and enable iterative research stages.

Recommendations

- Support diverse research approaches within undergraduate and graduate programs
- Introduce and teach research methods within lecture, seminar and studio settings
- Foster interdisciplinary collaborations across departments and faculties
- Support structures for medium and long-term collaborations such as laboratories, project spaces and centers of excellence
- Align industry-sponsored project collaborations with educational goals
- Facilitate multi-semester industry collaborations expanding the current timeframe and enable iterative research stage

In conclusion:

The Committee would like to express our pleasure in working with the Council of Higher Education on this Evaluation process. We hope that our work contributes to the evolution of Industrial Design education and to the future careers of those who undertake study in this discipline in Israel.

Signed by

Prof. Rosanne Somerson
Committee Chair

Prof. Gabriela Goldschmidt
Committee Co-Chair

Prof. Edward Colker

Prof. Haim Finkelstein

Prof. Jan-Christoph Zoels

מדינת ישראל

STATE OF ISRAEL

Minister of Education

October 10, 2007

Professor Rosanne Somerson
Department of Furniture Design
Rhode Island School of Design
Two College Street
Providence, RI 02903
USA

Dear Professor Somerson,

The State of Israel undertook an ambitious project when the Israeli Council for Higher Education (CHE) established a quality assessment and assurance system for Israeli higher education. Its stated goals are: to enhance and ensure the quality of academic studies; to provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel; and to ensure the continued integration of the Israeli system of higher education in the international academic arena. Involvement of world-renowned academicians in this process is essential, particularly as our nation reaches maturity in its 60th year.

This most important initiative reaches out to scientists in the international arena in a national effort to meet the critical challenges that confront the Israeli higher educational system today. The formulation of international evaluation committees represents an opportunity to express our common sense of concern and to assess the current and future status of education in the 21st century and beyond. It also establishes a structure for an ongoing consultative process among scientists around the globe on common academic dilemmas and prospects.

I therefore deeply appreciate your willingness to join us in this crucial endeavor.
It is with great pleasure that I hereby appoint you to serve as Chair of the Council for Higher Education's Committee for the Evaluation of Academic Quality for Industrial Design Studies.
The composition of the Committee will be as follows: Prof. Rosanne Somerson - Chair, Prof. Gabriela Goldschmidt Co-Chair, Prof. Ed Colker, Prof. Haim Finkelstein and Prof. Jan-Cristoph Zoels.
Ms. Alisa Elon will coordinate the Committee's activities.

In your capacity as a member of the Evaluation Committee, you will be requested to function in accordance with the enclosed appendix.

I wish you much success in your role as a member of this most important committee.

Sincerely,

Professor Yuli Tamir
Minister of Education, Culture and Sport
and Chairperson of the Council for Higher Education

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Ms. Riki Mendelzvaig, Secretary of the Council for Higher Education
ms. Michal Neumann, Head of the Quality Assessment Unit

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October 07

Appendix to the Letter of Appointment for Evaluation Committees (Study Programs)

1. General

On June 3, 2003 the Council for Higher Education (CHE) decided to establish a system for quality assessment and assurance in Israeli higher education. Within this framework, study-programs are to be evaluated every six years and institutions every eight years. The quality assessment system came into effect in the academic year of 2004-2005.

The main objectives of the quality assessment activity are:

- To enhance the quality of higher education in Israel;
- To create an awareness within institutions of higher education in Israel of the importance of quality evaluation and to develop internal self-evaluation mechanisms on a regular basis;
- To provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel;
- To ensure the continued integration of the Israeli system of higher education in the international academic arena.

It is not the CHE's intention to rank the institutions of higher education according to the results of the quality assessment processes. The evaluation committee should refrain from formal comparisons.

2. The Work of the Evaluation Committee

2.1 The committee shall hold meetings, as needed, before visiting the institution, in order to evaluate the material received.

2.2 The committee shall visit the institution and the academic unit being evaluated – if possible - within 3-4 months of receiving the self-evaluation report. The purpose of the visit is to verify and update the information submitted in the self-evaluation report, clarify matters where necessary, inspect the educational environment and facilities first hand, etc. During the visit, the committee will meet with the heads of the institution, faculty members, students, the administrative staff, and any other persons it considers necessary.

2.3 In a meeting at the beginning of the visit, the committee will meet with the heads of the institution (president/rector, dean), the heads of the academic unit and the study-programs, in order to explain the purpose of the visit. At the end of the visit, the committee will summarize its findings, and formulate its recommendations.

2.4 The duration of the visits (at least one full day) will be coordinated with the chairperson of the committee.

2.5 Following the visit, the committee will write its final report, including its recommendations, which will be delivered to the institution and the academic unit for their response.

2.6 In the event that a member of the committee is also a faculty member in an institution being evaluated, he will not take part in discussions regarding that institution.

3. The Individual Reports

3.1 The final reports of the evaluation committee shall address every institution separately.

3.2 The final reports shall include recommendations on topics listed in the guidelines for self –evaluation, such as:

- The goals and aims of the evaluated academic unit and study programs.
- The study program.
- The academic staff.
- The students.
- The organizational structure.
- The broader organizational structure (school/faculty) in which the academic unit and study program operate.
- The infrastructure (both physical and administrative) available to the study program.
- Internal mechanisms for quality assessment.
- Other topics to be decided upon by the evaluation committee.

4. The structure of the reports

4.1 Part A – General background and an executive summary:

4.1.1 General background concerning the evaluation process, the names of the members of the committee, a general description of the institution and the academic unit being assessed, and the committee's work.

4.1.2 An executive summary that will include a description of the strengths and weaknesses of the academic unit and program being evaluated.

4.2 Part B – In-depth description of subjects examined:

4.2.1 This part will be composed according to the topics examined by the evaluation committee, and based on the self-evaluation report submitted by the institution.

4.2.2 For each topic examined the report will present a summary of the findings, the relevant information and analysis.

4.3 Part C –Recommendations:

4.3.1 Comprehensive conclusions and recommendations regarding the evaluated academic unit and the study program according to the topics in part B.

4.3.2 Recommendations may be classified according to the following categories:

- ***Congratulatory remarks and minimal changes recommended, if any.***
- ***Desirable changes recommended*** at the institution's convenience and follow-up in the next cycle of evaluations.
- ***Important/needed changes requested for ensuring appropriate academic quality*** within a reasonable time, in coordination with the institution (1-3 years)

- ***Essential and urgent changes required, on which continued authorization will be contingent*** (immediately or up to one year).
- ***A combination of any of the above.***

4.4 Part D - Appendices:

The appendices shall contain the committee's letter of appointment and the schedule of the on-site visit.

5. <u>The General report</u>

In addition to the individual reports concerning each study program, the committee shall submit to the CHE the following documents:

5.1 A general report regarding the status of the evaluated field of study within the Israeli institutions of higher education.

5.2 Recommendations for standards in the evaluated field of study.

We urge the committee to list clearly its specific recommendations regarding each one of the topics, to ease the eventual monitoring of their implementation (both in the individual reports and in the general report).

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