

THE FUTURE OF DESIGN EDUCATION IN INDIA

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ABOUT THE INDIA DESIGN COUNCIL

India Design Council is an autonomous body of Government of India established under the aegis of Department of Industrial Policy & Promotion, Ministry of Commerce & Industry. It is a national strategic body for multi-disciplinary design and is involved in promotion of design to ultimately make India a design enabled country.


In the year 2007, India became one of the few countries to adopt a National Design Policy. To enable the policy implementation the Indian Government announced establishment of Indian Design Council (IDC) in March 2009.

The India Design Council is spearheading the national design direction and is working with other government agencies, the design community, industry and education institutions to promote design in business, society and public services and developing design excellence.

For more information, please visit: <http://www.indiadesigncouncil.org/>

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FOREWORD

I am delighted the British Council and India Design Council are publishing this report into the growing impact of design in India, the role of international collaborations for the sector and the role and impact of Indian Government policy to support and promote its growth.

The UK is known as a world-leader in design education. British designers are developing products that improve the lives of tens of millions of people – from the smartphone to smart drug delivery systems. Recent research by the UK's Design Council shows that design contributes £71.7bn of value to the UK. Design has created jobs at three-times our national average and employs 1.6m people.

India is experiencing a similar growth in design and, as this report shows, will need more than 60,000 designers by 2020 working in a market of potentially INR 188.32 bn (£1.43 bn). We believe that partnerships with UK educational institutions can be a key way to help the Government of India respond to the demand for qualified designers alongside its increased support for design education through new National Institutes of Design.

Drawing from real experiences of design institutions and industry, this report provides up-to-date information and analysis of the changing landscape of the design sector. I am very pleased we are

releasing it during the India-UK Tech Summit in Delhi alongside the visit of the British Prime Minister to India.



A handwritten signature in black ink that reads "Alan Gemmell". The signature is written in a cursive, flowing style.

Alan Gemmell, OBE
Director, British Council India

FOREWORD

We already know the value of design as a vital component of economic development and social well-being. India's competitiveness as a global economy hinges on our ability to harness that power of design.

Design education in India is a valuable asset, which must be nurtured so it can go from strength to greater strength. We need a sufficient number of designers to drive the industry and to devise solutions to face up to challenges such as sustainability, smart cities, clean India, and effectively delivering public services. We also need the methods of design education to inform the pedagogies of other faculties of learning. In order to secure intellectual leadership of the future and to enhance the innovation capacity of the nation, we need to invest more in design education.

This is a comprehensive report about design education in India to date. It brings together, in a single document the information needed to understand the design education landscape. With data, analyses and information, it covers all aspects of design education in India and represents the views of the design industry and institutions.

The report provides an important source of information and basis for further dialogue between Indian and international design institutions, especially the UK. This report, a collaboration of the British Council in India and India Design Council, provides a number of recommendations on areas in which the international community could collaborate with Indian design institutions.

I sincerely hope that the readers will find it illuminating, informative and useful.



A handwritten signature in black ink that reads "Pradyumna Vyas".

Pradyumna Vyas
Member Secretary
India Design Council

EXECUTIVE SUMMARY

The key findings of this report fall under three broad headings: the increased demand of design in the country and its knock-on effects, the importance of international collaborations identifying key opportunities, and finally, the role of Indian government interventions.

Growing Impact and Importance of Design Education

1. Design in India has matured over the years and is booming. By 2020, the potential market for design in India is expected to be INR 188.32 billion (GBP 1.43 billion). Only a fifth of the design market is currently tapped.
2. From a handful in 2010, the number of design institutions has grown to over 70 by 2016.
3. Given the positive demographics, rising educational aspirations, openness to pursue alternate careers, employment opportunities and increased affordability of higher education, the number of design aspirants is increasing every year. The number of designers required by 2020 in industrial, graphic, communication, packaging and other design domains will be 62,000, provided

the design potential is fully realized. Currently there are approximately 7,000 qualified designers in the country and approximately 5,000 students in design education.

International Collaboration Opportunities

4. The United Kingdom is followed by the United States of America, Italy and Netherlands as favoured countries for international collaboration for Indian institutions. USA followed by the UK, is the top destination for Indian design students to study abroad.
5. Greater opportunities for international collaboration are in the area of developing and delivering niche programmes in the emerging domains of design. Introducing more master's programmes and Ph.D. programmes will further increase opportunities for international collaboration.
6. International collaborative programmes do not pose a big challenge for Indian design institutions. Students have shown an increasing interest in international mobility and other aspects of collaborative programmes, while legislative constraints have been reported to be only marginally challenging.

7. There exists a trend of forming international partnerships to initiate a new design institution. The success of these partnerships is an excellent benchmark for more such collaborations.

Government Interventions

8. The Government of India has offered increased support for design education by announcing and implementing initiatives such as new national institutes of design, design innovation centers, Design Education Quality Mark and national aptitude test for design.
9. The Indian government acknowledges the role of foreign universities in achieving its mission of transforming India into an Asian higher education hub and there are positive signs of a major policy initiative in this direction coming through.

INTRODUCTION

This report captures the changing landscape, trends, growth and critical developments across the design education sector in India.

The research draws from real experiences of design institutions in India and provides up-to-date information and analysis of the opportunities for international collaboration to promote and strengthen design education and research in India. It also factors in the opinions of the design industry about the state of design education in India. The design domains considered for the report are—furniture design, graphic design, motion graphics, animation and new media design, industrial design, automotive design, toy design, exhibition design, lifestyle product design, retail design, and HCI / UI / UX.

The findings of this report are based on the survey conducted with the design education institutions and the design industry representatives. 33 of the 66 institutions and 12 of the 80 companies responded to the survey.

This was supported by desk research and sourcing literature available from open sources. The responses from the survey were compiled and weighted averages were reported.

Academic Institution Survey explored trends in student enrolment scenarios, pathways of the graduates, faculty salaries and availability, teaching and learning practices, internationalization strategies and perceived choices of students for international study. The survey sought qualitative inputs on the present situation of the study of design in comparison to the last six years and also about the future of design education in India with respect to academic staff, infrastructure,

curriculum, student numbers and quality, and industry institute collaboration.

The Design Industry Survey covered aspects related to recruitment patterns, industry satisfaction with design graduates, industry participation in design education, internships, understanding of the levels of critical skills and attitudes among design graduates, and salaries offered to graduates at entry level. Survey questions also included satisfaction levels with design curriculum, quality and quantity of students and industry–institute collaboration, future pathways for design education and how current programmes are responding to the changing landscape.





DESIGN IN INDIA

The Landscape

In a traditional sense, the practice of design is age old in India. India has always had a rich culture and a well-developed craft tradition. The rituals, practices and festivals are all design manifestations, with a profound purpose behind them. These traditions and crafts provide a wonderful backdrop and inspiration towards looking at and understanding modern design.

The strength of Indian design stems from its deep cultural roots and its growing economic position. The power of design in an Indian context is magnified with the large population that needs design solutions. Beyond aesthetics, design has the power to bring change in the lives of people and be an integrator of values, aspirations and culture.

India has a vibrant design industry and an ever-increasing number of design users backed by a strong platform of design education. Indian designers are an eclectic mix of talent, insight and experience. Design in India has matured over the years and continues to grow from strength to strength.

Most design firms do well and have a firm customer base, developed through personal relationships rather than any overt marketing or business development activities. Majority of design service companies are small one- to five-people

operations mostly driven by the owners. Many young designers are choosing to work at in-house departments, which offer benefits, predictable hours, career paths, opportunity for structure and greater collaborations. Exposure to major international projects is also one of the attractions, as design departments work for Indian operations as well as their parent companies.

The design industry could broadly be categorised in three: in-house design teams, design businesses and freelancers. A large number of businesses have in-house design teams and absorb most available design talent. Few design businesses have managed to scale up. A significant number of designers work as freelancers or essentially single person operations. These freelance designers work with design businesses, as well as in-house design teams. They also have few fixed clients on retainer basis and collaborate with larger teams in order to cater to bigger clients. To cater to freelancers, collaborative and co-working spaces focused on design like Think Space, Daftar, and Beehive have come up in major Indian cities.

In India, there is no standard definition of the term 'professional designer'. In addition to the designers qualified through the number of design programmes, there are also a

number of professionals, who are not formally trained, working or operating as designers. For example, many fine arts students acquire graphic design skills and work as graphic designers. Another example is HCI, where there are few qualified professionals resulting in others filling in to discharge the duties of HCI professionals.

India has done well so far in terms of producing international quality designers. While qualified designers are few, the quality of designers and quality of training is high.

The majority of design users are big businesses who absorb a large number of design graduates. Most small or medium sized enterprises (SMEs) lack the resources or understanding of the value of design as a source of competitive advantage. Design is yet to reach small and medium sized enterprises. As the emphasis for many Indian businesses shift from low cost production to original new offerings, design is being seen in a new light, as an agent of change.

India still has some way to go in developing an understanding and appreciation of design and inculcating design culture among its people. India needs to make conscious efforts to enhance the global competitiveness of Indian industry through design.

The Indian Government is promoting and supporting design through setting up design clinics and establishment of four new NIDs. The Government is also open to international mentoring and support for the NID.

Multinational corporations view India as a large, untapped market for trading their goods and services. They understand that success elsewhere would not necessarily translate to success in India without understanding the complexities of the market and sensibilities of the people. Global corporations are willing to work with Indian designers to understand the local market, which puts the spotlight on design industry.

Major Indian organizations like Tata Group, Tata Consultancy Service, Indian Space Research Organization, automobile companies operating in India and many others have embraced design successfully in their products. Many others like GVK Industries, Titan, Art d'inox, Ergo, Future Group, Ginger Hotels, Godrej Interio, Larsen & Toubro, Nirlep and Philips use design as a differentiator to gain competitive advantage.

There is a major concentration of design companies and design institutions in the four urban areas—Mumbai, Delhi, Bangalore and Pune. All these cities are industrially active and are home

to a large number of well-known Indian companies.

The concentration of design companies in Bangalore and Pune is due to the presence of technology companies who are active design users. These two cities offer good standard of living, good climate, an experimental, culturally active society and a complete ecosystem for design including design firms, design users, educational institutions and an enabling environment. Mumbai and Delhi are natural destinations for design companies as they host top Indian corporations from diverse segments and offer a well-developed market for design services. The presence of leading design education institutions in these cities is also another reason for concentration of design companies in these cities and vice versa.

National Design Policy

Realizing the increasing importance of design in economic, industrial and societal development and in improving quality of products and services, the Government of India adopted the National Design Policy in 2007 through broad consultations with all stakeholders involved. The vision behind initiating the “National Design Policy” was to

have a “design enabled Indian industry” which could impact both the national economy and the quality of life in a positive manner. The national design policy can be accessed at http://dipp.nic.in/English/Policies/national_design_policy.pdf

India Design Council

To implement the provisions of the National Design Policy, the government established India Design Council in 2009. India Design Council is an autonomous body of the Government of India, established under the aegis of the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry. India Design Council is a strategic body for multi-disciplinary design. It envisions making the Indian industry a design-enabled one. More information about the India Design Council is available at www.indiadesigncouncil.org.

Four new NIDs

As a part of the National Design Policy, four new National Institutes of Design are planned

in Vijayawada in Andhra Pradesh, Kurukshetra in Haryana, Bhopal in Madhya Pradesh and Jorhat in Assam.

In 2015, NID, Vijayawada started its academic programmes with undergraduate programmes in Industrial Design, Communication Design and Textile and Apparel Design. In its first year, it received 793 applications for 60 seats and in 2016-17, applications increased to 3,507, including two international candidates. NID, Kurukshetra has commenced its first academic year of 2016-17 in

Industrial Design, Communication Design and Textile & Apparel Design.

National Design Business Incubator (NDBI)

NDBI is an initiative of NID, Ahmedabad, set up with the support of the Department of Science and Technology, Government of India, New Delhi. The mandate of NDBI is to nurture a culture of entrepreneurship in the creative minds of young designers, so that they can shape their ideas into newer

and niftier products or services capable of being marketed and sold. The first and only design-led business incubator in the country, NDBI supports designers in their quest to turn ideas and concepts into successful competitive businesses and provides an environment where they can develop the essential business management skills and systems that enable them to grow. More details can be found at <http://www.ndbiindia.org/>





DESIGN EDUCATION IN INDIA

The Origins

Design education in India celebrated its golden jubilee in 2011. Since its advent 55 years ago, it has been growing at a steady rate. Till about 2004, design education was imparted by a handful of institutions. All these institutions were Government owned. Most of these institutions were not stand-alone design institutions, but a part of a large technical institute. For a number of years, the National Institute of Design at Ahmedabad was the only stand-alone design education institution. In 2004, a few institutions from the private sector entered the field of design education. Since then, there has been an exponential growth in design education in India. Today, this number has grown to more than 70 institutes teaching design at various levels.

The British had set up the first art college in India during their rule. Dr. Alexander Hunter founded an art school in Madras in 1850 as a private enterprise. In 1854, the School of Industrial Art was started in Kolkata, followed by Sir JJ School of Art in Bombay in 1857 and Jeypore School of Industrial Art in 1866. It was with the advent of these institutions that commercial graphics got introduced in the Indian system.

Sir JJ School of Art started as an Arts and Crafts institution and initiated architecture in 1900. The department of Commercial

Art, which was established in 1935, is said to have laid down the foundations for Graphic Design in India.

In 1958, the Government of India invited Charles and Ray Eames to make recommendations for a training programme to support small industries. Their recommendations resulted in the 'India Design Report'. Based on their report in 1960, the Government set up National Institute of Design (NID) at Ahmedabad. The institute started with programmes in Industrial Design and Visual Communication. This was followed by setting up of the Industrial Design Center under the aegis of the Indian Institute of Technology (IIT), Bombay in 1969. Both these institutions carried the mantle of design in India in the modern era, followed by many others.

The Indian design education system offers diverse programmes, including certificate, diploma, under-graduate and postgraduate programmes in diverse design disciplines. After starting with the core design disciplines, many design institutions have started to offer distinct and specialised design programmes, like "Applied Arts" within graphic design. Applied Arts is a four-year programme post 12 years of the school education and it is mandatory to have approval from All India Council for Technical Education

to initiate this programme, in addition to university affiliation.

The Growth

The choice of courses in design and the number of students interested in pursuing design course are both on the rise. Growth in institutions offering design education can be attributed to the low barrier of entry to setup a design institution.

NID conducts a national entrance examination for admissions. The number of students appearing for this examination has been growing exponentially year after year. The number of applicants for Bachelor of Design (B.Des.) programmes was 10,451 for 100 seats. For Master of Design (M.Des.) programmes, the number of applicants was 9,200 for 275 seats for the academic year beginning 2016.

Source: Director's Office, NID

The Potential

Presently there are 33.27 million students enrolled in the Indian higher education system at the gross enrolment ratio (GER) of 23.6 (calculated for 18-23 years age group). 79.9 per cent students are enrolled in programmes at the undergraduate level and 11.45 per cent students are enrolled in postgraduate level programmes. Distance enrolment constitutes 11.7 per cent of the total enrolment in higher education.

Source: All India Survey on Higher Education (AISHE) 2014-15 - <http://www.aishe.gov.in/aishe/viewDocument.action?documentId=206>

The market for education in India was about US\$ 100 billion in 2015-16 and is projected to reach US\$ 116.4 billion in 2016-17. The higher education contributes 59.7 per cent of this market size and at current spend is about US\$ 6.78 billion, and is expected to grow at an average annual rate of over 18 per cent to reach US\$ 34.12 billion in the next 10 years.

Source: <http://www.ibef.org/industry/education-sector-india.aspx>

The National Sample Survey Office (NSSO) reported that the average annual private expenditure for general education (primary level to post graduation and above) has shot up by a staggering 175 per cent. During the same period, the annual cost of professional and technical education has increased by 96 per cent.

By the year 2030, India is expected to be the most populous country. The population aged between 18 to 23 age group is estimated to be 142 million by 2030, which would approximately be 10 per cent of the total population (Higher Education in India: Vision 2030 by Ernst & Young).

The aim of the government is to raise its current gross enrolment ratio to 30 per cent by 2020 from

the present 23.6 per cent (<http://www.ibef.org/industry/education-sector-india.aspx>). By 2030, the GER is expected to be 45 per cent meaning an opportunity space of 63.9 million students.

The middle class is critically aware that education is the only means to meet their aspirations for formal jobs, home ownership, and economic security. The rise of middle class in India has been a phenomenon driving the overall economic growth and consumption in India. A large section of the Indian population is upwardly mobile and moving from lower income category to middle class, from middle class to upper middle class and so on. The size of the middle class is expected to be more than one billion by 2025.

Given the positive demographics, rising awareness about the importance of education, openness to explore and pursue alternate careers and the propensity to spend more on higher education, the design education sector in India will be extremely attractive in the coming years.

International Collaborations

There are now a good number of design schools, which were started with international collaboration and many more are coming up. Some examples are:

- DSK Supinfocom was set up in Pune in collaboration with

Chamber of Commerce and Industry of Valenciennes (CCIV) and offers programmes in the areas of Animation, Gaming and Industrial Design.

- Ecoleintuit.lab was setup in Mumbai in collaboration with French institute intuit.lab. They are offering programmes in Graphic Design and allied areas.
- ISDI, Mumbai was setup in collaboration with Parsons, the New School for Design and offers programmes in Communication Design, Product Design, Interior Design and Fashion Design.
- GD Goenka School of Fashion and Design has collaborated with Politecnico di Milano. They offer programmes in Fashion Design, Communication Design, Interior Design and Product Design.
- Pearl Academy with campuses at Delhi, Mumbai and Jaipur, offers undergraduate programmes in collaboration with Nottingham Trent University, UK and postgraduate programmes in collaboration with Domus Academy.

- MIT Institute of Design in Pune runs a franchised fashion design programme with University for the Creative Arts, UK.

Accreditation

Design education in India lacks coherent structure because of the lack of well-articulated accreditation or affiliation procedures. There is no national accreditation body to accredit design programmes. Most of the state universities do not have design programmes for which they can affiliate colleges. As such, it is not possible for an entity to go and seek affiliation and hence grant a degree in design. Only a university is permitted to offer a degree.

As a result, most of the design institutions in the country are not able to grant degrees even if they offer degree level instruction.

In India, a university can come into existence only by an act of legislature. The powers of legislature cannot be delegated to the executive of the government. As such, the universities coming into existence via a central legislative action are called the central universities. The central universities are not bound by geographical constraints, unless so specified in the legislation.

Universities coming into existence through state legislative action are known as state universities and have specific geographical boundaries specified in the legislation. The state universities are the backbone of the Indian higher education system. The state universities have colleges affiliated to them, which perform the role of imparting the education to the enrolled students, whereas the role of the university is to determine the curriculum, conduct assessments and grant degrees. Some states permit establishment of private universities. These private universities come into existence by a specific act passed in the state legislature. The private university is specific to a particular location and cannot operate anywhere else. It has all the powers of a university, except



that they cannot affiliate any college under them.

A deemed university is a university, which is permitted by the University Grants Commission. A deemed university status is granted to an existing affiliated college, which satisfies the norms laid down by the University Grants Commission. The status of deemed university is granted for specific domains of study and can be expanded later through an approval process. A deemed university is also limited to a specific location, which can also be expanded through a laid down process. A deemed university does not have the powers to affiliate a college under it.

Norms for International Collaboration

For the purpose of joint degree/dual degree programmes, cooperation with a university (central, state, private or deemed) is well suited due to their ability to offer degrees

and to satisfy the conditions as specified by the University Grants Commission–Promotion and Maintenance of Standards of Academic Collaboration between Indian and Foreign Educational Institutions Regulations, 2016 (http://www.ugc.ac.in/ugc_notices.aspx?id=1437). It specifies criteria and conditions for foreign educational institution collaborating with an Indian educational institution. These norms are intended for collaborations leading to awarding of a degree and does not preclude other forms of collaborations between Indian and foreign institutions.

Of the different types of universities, private and deemed universities are comparatively better for cooperation as they have smaller structures, more nimble management and ease of adapting their curricula to the mutual requirements of a partnership. Autonomous institutions are well suited for twinning programmes as

they are in need of a partner through which its students could get degrees. It is to be noted that most of the autonomous institutions, though not formally accredited, offer degree level programmes, which call for a diligent evaluation of individual cases.

According to the Ministry of Human Resource Development (MHRD) data of 2010, there are 631 foreign education providers operating in India. The majority of these providers are offering programmes in the domain of business management and hotel management. About 440 providers are functioning from their home campuses and 137 are operating through collaboration with Indian institutions.

Source: Two Hundred Thirty Seventh Report on The Foreign Educational Institutions Bill 2010, Parliament of India, Rajya Sabha – http://www.prsindia.org/uploads/media/Foreign%20Educational%20Institutions%20Regulation/Foreign%20Universities%20Bill%20_SCR.pdf

The discussion about allowing foreign universities to set up campuses in India and to operate



in India has been going on for a long time. The previous government at the center proposed a Foreign Educational Institutions (Regulation of Entry and Operations) Bill, 2010, which eventually lapsed with the dissolution of the 15th Lok Sabha.

National Institution for Transforming India (NITI Aayog) is a Government of India policy think-tank established by the government with a stated aim to foster involvement and participation in the economic policy-making process by the state governments of India. The Prime Minister serves as the ex-officio chairman of this body.

In June 2015, the Prime Minister held a meeting with officials from the NITI Aayog, MHRD, UGC and commerce ministry to discuss transforming India into an Asian higher education hub. In April 2016, the NITI Aayog submitted a report to the Prime Minister's Office in favour of inviting foreign universities to setup campuses in India. It has suggested three routes to permit entry of foreign education providers:

1. a new law to regulate the operation of such universities in the country
2. an amendment to the UGC Act of 1956 and deemed university regulations to let them in as deemed universities and

3. facilitating their entry by tweaking UGC and AICTE regulations on twinning arrangements between Indian and foreign institutions to permit joint ventures.

The report has observed that foreign universities will help meet the demand for higher education in the country, increase competition and subsequently improve standards of higher education.

Qualification Progression

Design education scenario in India lacks opportunities for progression from bachelor's to master's level and from master's level to Ph.D. Most of the postgraduate programmes are essentially after-graduate programmes. This means that at the postgraduate level, instead of offering instruction that is advanced in nature as compared to undergraduate level, instruction offered is similar in content to undergraduate programmes. The eligibility for admission to these postgraduate programmes is "any graduation". Hence, the postgraduate programme does not build on the knowledge acquired by the student during undergraduate studies. Rather, it starts with fundamentals of design and covers the undergraduate programme content in two years. There are only a few Ph.D. programs in design in India. Ph.D. programs in design

are offered at IDC, IIT Bombay; Centre for Environmental Planning and Technology (CEPT), Ahmedabad; Centre for Product Design and Manufacturing, Indian Institute of Science, Bangalore; Department of Design, IIT Guwahati; Department of Design, IIT Hyderabad and Design Programme, IIT Kanpur. Srishti School of Design offers Ph.D. programme in design as a research center of Manipal Academy of Higher Education, wherein the Ph.D. is awarded by Manipal Academy of Higher Education.

Research and Faculty

Published research in the field of design in India is miniscule and publications by faculty are rare. There are no design research journals that get published in India. Barring a few exceptions there have been no conferences held in India where papers are invited, peer reviewed and then published. There is no central body which looks after design education. As such, the funding for research is limited to individual institution's internal resources. There is also a lack of awards and recognitions for faculty in design.

A noticeable trend is recruitment of full time, visiting and adjunct international faculty in design instruction.

STATE OF DESIGN EDUCATION

THE SURVEY

We sent the survey to 66 design education institutions across the country. The findings of this section are based on the 33 responses received. We have taken weighted averages. The percentages mentioned are rounded off to the nearest decimal.

33 per cent respondents were private institutions, another 34 per cent government institutions, 21 per cent were private universities or deemed to be universities, 9 per cent were institutions affiliated to a university and 3 per cent were in the others category. A majority of the respondents at 33 per cent have been operating for more than 15 years.

Growth

- In response to a question on increased interest and demand for design education, all respondents were enthusiastic about steady increase in numbers of applicants since 2010, with 87 per cent reporting that they expect the trend to continue in the future.
- 73 per cent respondents reported increase in undergraduate enrolments and 81 per cent reported increase in postgraduate enrolments.
- The two key reasons for increase in enrolment is improved awareness (89 per

cent respondents) about design education and design careers and employment opportunities (70 per cent respondents).

Employment Opportunities

- All respondents agreed that the employment opportunities for design students have significantly increased. 87 per cent reported that the employment opportunities have increased for the bachelor's degree students and 78 per cent reported the same for the master's degree students.

Key Influencing Factors

- When asked about the key influencing factors, institutions reported that use of ICT in teaching, research and management (83 per cent respondents) is a major influencer, followed by internationalization (72 per cent respondents) and growing competition (65 per cent respondents) as the important influencing factor.
- 64 per cent respondents attributed development of courses to new research. On the question of whether research plays a more important role than teaching for the career development of young academics, the opinion was equally divided.
- Half of the surveyed

institutions reported to have international students studying with them.

Design Faculty

- When asked if it was easy to recruit skilled and motivated faculty to teach, 42 per cent said it was difficult, and 48 per cent felt that it was slightly difficult.
- 68 per cent of the design institutions expressed that availability of qualified faculty was a problem, with 26 per cent stating that it was a serious problem, whereas the other 42 per cent stated that it was a problem. 32 per cent of the design institutions did not think that finding qualified faculty was a problem.
- The salaries of design faculty are becoming competitive. The entry-level salaries are in the range of INR 40,000 (GBP 490) to 50,000 (GBP 612) per month, whereas faculty with two to five years experience earn between INR 60,000 (GBP 735)–70,000 (GBP 857).
- Salaries range from INR 70,000 (GBP 857) – 100,000 (GBP 1,225) for faculty with five to ten years of experience, with a good number of design institutions paying over INR 200,000 (GBP 2450) to faculty with more than 10 years of experience.



Student Pathways

- One third of students graduating from design schools become entrepreneurs, with 13 per cent reported to be starting an independent design consultancy, 9 per cent start their own business and 11 per cent operate as freelance designers.
- 56 per cent graduating students go on to work in the industry and 10 per cent enter academia. 73 per cent students leave the institution after completing their programme, whereas 15 per cent students continue in the same institution to pursue master's courses.
- Industry sectors of transportation, business and financial services, entertainment, retail, consumer goods, luxury segment, telecommunication, manufacturing and publishing are the leading industry sectors that employ design students.
- 57 per cent of the students find employment with large and medium sized

businesses, with SMEs employing about 17 per cent of the students. 13 per cent of the graduating students work for individuals, 9 per cent work for public sector and 8 per cent join academic institutions.

- In the master's programme, 78 per cent of the enrolled students are from disciplines other than design. Only 35 per cent students pursuing master's programmes possess bachelor's degree in the same design discipline.

Teaching and Learning

- Design institutions in India are keen to enhance teaching through faculty development programmes to enhance teaching skills. 75 per cent design institutions offer compulsory courses to faculty to enhance teaching skills. Nearly all of them maintain a portfolio of faculty documenting their teaching practices. 60 per cent of the institutions recognize good teaching by way of annual awards, career progression and other such incentives.

- The method of peer feedback is employed only by 50 per cent of the institutions and 35 per cent of them have plans to start.
- Majority of the institutions have developed the learning outcomes for their courses and a small percentage of institutions plan to develop it in the near future.
- Almost all institutions use information and communication technology for delivery of their courses. They support problem based learning and encourage peer learning amongst their students.
- Small group teaching is used by 70 per cent of the institutions across all their programmes whereas the remaining use it in specific departments.
- 85 per cent collaborate with other educational institutions and 90 per cent collaborate with non-academic partners as necessary. 75 per cent of the institutions support internationalization to enhance learning and teaching.

Online Learning

- Online courses are offered by 40 per cent of the institutions and 30 per cent of them offer blended learning approaches. A small percentage of institutions use MOOCs as a part of their course work. Less than 30 per cent institutions provide online learning with other higher education institutions.

Internationalization

- On internationalization, 70 per cent of the respondents stated that they have an internationalization strategy in place, with the rest either

developing a strategy or having it as a general provision.

- 80 per cent confirmed to have collaboration with universities/institutions outside India. United Kingdom followed by United States of America, Italy and Netherlands are the favoured countries. 79 per cent of them are collaborating with universities in UK, 68 per cent with universities in USA, 47 per cent with universities in Italy and 37 per cent with universities in Netherlands. 37 per cent institutions are collaborating with universities in Australia, 37

per cent with France, 26 per cent with Germany and 21 per cent with Finland.

- The first preference for Indian students wanting to study abroad is the USA followed by the UK. Italy is the third choice.
- The main motivation for students to choose an international study destination is availability of a wide range of schools and programmes and high-quality higher education system.
- Availability of funds and scholarship schemes is also an important contributing factor in decision-making. High tuition and living costs act as a barrier in choosing an international destination and is a critical factor in decision-making.



- Design institutions actively pursue different initiatives and activities to support internationalization. The most preferred form of internationalization is student exchanges, student work placement and summer school partnerships. 62 per cent respondents reported to have strategic partnerships with foreign institutions, 38 per cent offer twinning programmes at the bachelor's level and 19 per cent offer twinning programmes at the master's level.
- 50 per cent institutions engage in staff exchanges and have capacity building projects as a form of internationalization. All agree that internationalization has contributed to improved teaching and learning at their institution. In their opinion, staff and student mobility contributes significantly towards teaching and learning enhancement. Collaboration in teaching and learning, international students and international staff are other important contributors to enhanced student learning experience.
- While discussing the main challenges in pursuing internationalization, 44 per cent of the institutions found integration of programmes into institutions is not

challenging and 44 per cent found it to be somewhat challenging. Interestingly, legislative barriers were reported as somewhat challenging by 53 per cent of the institutions.

- Major challenges were sustainability of funding mentioned by 55 per cent respondents followed by 47 per cent citing differences in fee structure between partner institutions as a challenge. On the aspect of quality assurance, 56 per cent felt that it was somewhat challenging and 33 per cent felt it was not at all challenging.
- The good news is that institutions do not find student interest in international aspects of their programmes to be a concern. 33 per cent institutions found it to be not at all challenging and 44 per cent thought it was only somewhat challenging.
- On the question of the preferred geographies where institutions would like to develop their international cooperation, an overwhelmingly 91 per cent respondents mentioned European Union, followed by 77 per cent choosing USA/ Canada as their preferred choice. United Kingdom was the choice of 64 per cent institutions. No one cited

any interest in Latin America and a miniscule number of people mentioned China and Africa. Asia and Australia/ New Zealand were cited by 23 per cent and 32 per cent respondents respectively.

Industry – Institute Cooperation

- Majority of the design institutions were satisfied with the support received from the industry. 26 per cent were completely satisfied and 58 per cent were quite satisfied. They felt that the industry was interactive and proactive and offered strong support. Institutions expected industry collaboration for new product development, opportunities for internships, projects, industry visits for students and other activities related to education and research.

Reactions from Design Institutions

While expressing their views about the Indian industry, design institutions said that increased spending power and a growing middle class that is savvy about design trends and concepts has led to a greater acceptance of the value of design. The rise of Indian design is attributed to more awareness and consciousness of the value of good design.

Design institutes are now gradually being recognised as incubators and academic partners by the industry. The industry wants to engage design schools in active research for new products/value chain and sponsor specialist projects.

Infrastructure and facilities at the design schools have improved considerably in the last six years. Academic staff strength has grown in number with younger faculty joining. Faculty recruitment remains a challenge and as a result, institutions are recruiting international faculty though, the numbers are still small.

Efforts to enhance design curriculum are being made, but not uniformly across institutions, as some remain in traditional silo-based thinking. Increasingly, we are seeing a convergence of technology, design thinking, user centered design and experience design. Global design thinking in the curriculum and international benchmarking of curriculum is now being emphasised. Various new programmes are being formulated and multi-disciplinary design education is evolving. Collaborative trans and inter/multi-disciplinary approach to curriculum framework is the need of the day. Curricula will have to be designed to be more interdisciplinary and less compartmentalised to allow more

choice and flexibility to student aspirations.

With changing times, design education in India needs to evolve to the next level to meet the expectations of both the learner and the industry. The challenge is to move to a more holistic, multi-disciplinary design education to create design professionals who can position design more strategically as an integration of the aesthetic, business, technological and sociological concerns. Another key intervention needed is to embed design in the teaching and learning of other disciplines and capabilities, such as in business and engineering schools, and introduce it early in secondary schools.

The number of design students is rapidly increasing as design becomes more accepted as a career choice for parents, who still influence student aspirations and decisions. Quality is improving, but at a slow pace. Students are also less prone to study in depth, research, and read text, but this is a generational phenomenon, for which educators need to adapt.

Quality of design education will have to be maintained at a larger scale, because design education is likely to explode. The market is huge and the number of students will grow exponentially, which

means that efficiencies will have to be developed to deal with this, while still upholding standards of quality. Employability needs to be reconsidered as many colleges are focusing largely on skills or software knowledge, when in reality, it needs to be much more than that.

Collaborative programmes with engineering, technology, science, management, medicine, etc. will need to be developed. Interdisciplinary approach is of prime importance. Flexibility and choice are hallmarks of millennial aspirations, as increasingly students will not accept unilateral approach to design education. Design schools will have to be proactive and create flexible curricula to address this.

INDUSTRY VIEWPOINT

THE SURVEY

The Recruitment Scenario

- The recruitment scenario in India is positive, as 67 per cent of the industry respondents confirm that they have recruited designers in the last three years and plan to recruit more. 58 per cent of the respondents feel that design graduates recruited in the last three years come with requisite skills to work. There is not much distinction in terms of preference for recruitment amongst bachelor's and master's level students though the balance tilts in favour of bachelor's degree holders. Perhaps this is because the number of available bachelor's level design graduates is more.
- The key driver for recruitment is actual and anticipated growth in business. The challenge for industry, however, is shortage of designers with relevant skills and capabilities and competitive starting salary. 41.67 per cent companies said that employing graduates from high-ranking institutes was important for them whereas 33.33 per cent companies did not think it was important at all and only 16.67 per cent companies gave importance to graduates from high-ranking institutes.
- 50 per cent industry

respondents had a preferred list of institutions from which they would prefer to employ, while the balance 50 per cent did not have a list of preferred institutions. The reason for preferring a particular institution is recruiter loyalty to institutions where they studied.

Industry Institute Collaboration

- Few industries frequently collaborate with design institutions. There are about 17 per cent respondents, who stated that they never worked with any design institution. Most responded saying that they collaborated with design institutions infrequently, yet nearly all of them felt that collaborating with design education institutions was important.
- The barrier to collaboration with design education institutions is lack of time for 70 per cent of the respondents and 30 per cent claimed that they had never been asked. Nearly all industry respondents said that they provided paid internships while 8 per cent said they did not provide internships. 75 per cent said that there were no barriers to providing internships. Those who did not provide internships could not do so

for reasons of affordability.

Skills within Design Graduates

- A significant number of respondents said that design graduates possessed good verbal communication skills, but score low on written communication proficiency.
- 67 per cent of them said that the design graduates were capable of developing professional knowledge and skills, but not for taking up research.
- On analytical and problem solving skills, there was a divergence of opinion with 58 per cent reporting it as low or very low and 42 per cent saying it was high. Similar results were reported for capacity to synthesize.
- 75 per cent of the respondents felt that the graduates were narrowly focused and low on general knowledge.
- Opinion was divided on the graduates' ability to develop new, innovative ideas, directions, opportunities or improvements to products and processes, with 50 per cent respondents reporting it to be high, 33 per cent stating it to be low and 17 per cent stating it to be very low. 83 per cent respondents reported a lack of leadership and managerial skills, 75 per

cent were not satisfied with the capacity of graduates to work independently.

- Industry respondents were satisfied with ability of the graduates to collaborate and work in teams and had a divided opinion about their understanding of professional ethics and social responsibility. Time management skills were stated to be low by 68 per cent of the respondents. Capacity to be flexible and adaptable and ability to

cope with work pressure and stress was experienced as low, whereas opinion about ability to think critically, creatively and reflectively was tilted towards low.

Comparison of Design Graduates

- According to 45 per cent Indian design companies who participated in the survey, Indian design graduates were about same as graduates from other countries. 27 per cent said

that Indian graduates were not good as graduates from other countries, whereas 18 per cent felt that Indian graduates were not as good as design graduates from other countries and 9 per cent felt that design graduates from India were slightly better than design graduates from other countries.

Additional Training

- 75 per cent of the industry respondents confirmed that they provide



additional training or other professional development opportunities to graduates in their first year of employment. The training areas mentioned were wide ranging and included research methodologies, problem identification, conceptual development, specific software skills, renderings, presentation slide preparations, quick mock-ups, time management, quality of deliverables, creative problem solving skills, project management and professional practice.

Mentoring at various stages of the design process, from ideation and research to client meetings and costing is provided to the graduates in their first year of employment.

Reactions from the Design Industry

Industry respondents think that India has good design schools, but there is a shortage of good faculty with industry experience. Industry rues the lack of facilities and interest among the staff and students to explore real materials,

design details, actual functioning of new designs and very little design mentoring. They feel that Indian design school facilities are inadequate compared to design schools abroad.

The respondents think that curriculum needs an overhaul to make it more relevant for innovative thought process and practical outcome. It could be intensive and demanding, with more faculty-student interaction. The respondents expect design education to be offered in smaller specialised focus areas that cater to specific industry verticals.



DESIGN EDUCATION INITIATIVES

Design Innovation Centers

Ministry of Human Resource Development has announced a National Initiative for Design Innovation. Under this initiative, 20 new Design Innovation Centers (DIC), one Open Design School (ODS) and a National Design Innovation Network (NDIN), linking together all these schools, would be set up. ODS would ensure maximum reach of design education and practice in the country through various collaborative education programmes (linking a broad spectrum of educational institutions) and free sharing of its courseware through the Internet.

NDIN would be a network of design schools that work closely with other leading institutions of industry and academia, NGOs and government to further the reach and access of design education, to promote design innovation in all sectors, and to develop wide-ranging collaborative projects between institutions. ODS and NDIN would also raise the standards of design education and innovation in the country through various initiatives, including the creation of fabrication labs and digital media zones across educational institutions on a large scale. More information about this initiative can be accessed at <http://mhrd.gov.in/national-initiative-design-innovation-0>

Design Education Quality Mark

The India Design Council has evolved a quality code for setting and maintaining academic standards, programme design and approval and programme monitoring and review for design education institutions in India. It has also evolved a Higher Education Review Process to implement the benchmarking system in adherence to the quality code.

The India Design Council has collaborated with the Quality Assurance Agency for Higher Education, UK (QAA). The British Council in India helped and supported this collaboration.

The India Design Council believes in the principle of institutional autonomy and, as such, believes that the primary responsibility for quality assurance in higher education lies with each institution itself. The Quality Code represents this underlying principle and will serve as an agreed point of reference for continuous enhancement and for aspiring towards international best practice. It represents a system that is reasonable, reason-based, and peer-sanctioned.

The Quality Code and the review process are applicable to all kinds of design education institutions, whether from public or private

sector, and at all levels of higher education qualifications.

The Design Education Quality Mark has been formulated with the main idea of creating a comparable, compatible, coherent and recognizable system of Design Education within the framework of Quality Code.

The Quality Code and the Quality Mark will ensure a quality design education system within the country, promote mobility of students nationally and internationally, introduce a credit system for the assessment of study performance and recognize levels of qualification offered by the design educators.

The Design Education Quality Mark will:

- help to promote confidence of students, parents, employers and society in the quality of design education
- assist design institutions in enhancing the quality of their programmes
- improve the quality of academic programmes for students and other beneficiaries of design education
- ensure that there is clarity and transparency in quality assurance processes and outcomes
- encourage a culture of quality improvement

- provide a measure of accountability.

The Design Education Quality Mark will be granted to institutions who undergo the review process and who meet or exceed the expectations for quality and standards as prescribed in the Quality Code.

All India Design Aptitude Test

The India Design Council has determined to initiate an All India Design Aptitude Test for entry into design programmes run across the country at both the undergraduate and postgraduate levels. As an independent agency, the India Design Council will conduct this test. The tests will be administered from 2017.

This test will be for candidates seeking admission to design programmes run by participating universities/institutions for their undergraduate and postgraduate design programmes.

Through an online system the council will handle the entire process of registration, application, payment of

fees, uploading documents, downloading of test admission ticket, taking mock test, test administration and announcement of results.

The entrance test will generate scores and the students will be able to apply to any design institute with these scores. This will be a first step and the participating design institutes will be free to adopt second level testing procedures such as on-spot studio tests, interviews, etc.

Infusing Design in Engineering Education

The India Design Council has published a framework by the name “Design Spine” to infuse design within undergraduate engineering education in the country. The purpose of design spine is to enable undergraduate engineering students to develop design knowledge and skills that will prepare them to be innovative and creators of new value.

The programme focuses on innovative engineering design in a team-based, cross-disciplinary setting. “Innovative Design” implies both identifying and solving real-world problems for real people.

The framework developed by the India Design Council was presented by Dr. Anil Kakodkar during the one-day workshop organised by IIT Hyderabad and IIT Bombay (IDC) on November 06, 2013. Dr. Pallam Raju, then Minister of HRD was the Chief Guest. The framework is available at- <http://deconstructingdesign.iith.ac.in/documents/Design%20Spine%20for%20NIT.pdf>

The published framework is being adopted by many engineering institutions across the country. The Gujarat Technological University has introduced Design Spine courses from academic year 2014-15 for all the colleges affiliated to it.





CONCLUSION

TRENDS AND PROSPECTS

The next five years are extremely crucial for the Indian design industry, as there has been a phenomenal growth in each sector along with the growth in demand for design. There is expected to be a huge demand from the market for professionally run design companies, as well as professionally trained designers.

The potential market for Industrial Design in India is pegged at approximately INR 50 billion (GBP 612 million) and by 2020, it is expected to grow to INR 110 billion (GBP 1.34 billion). The graphic, communication and packaging design industry potential is INR 56.2 billion (GBP 688 million). Other domains of design constitute a market of INR 10.62 billion (GBP 130 million). The present size of the design industry is estimated to be INR 21 billion (GBP 257 million) with a potential of INR 116.81 billion (GBP 1.43 billion) and future potential of INR 188.32 billion (GBP 2.30 billion) by 2020. Under the present circumstances, against a potential of INR 116.81 billion (GBP 1.43 billion), the realised market is only INR 21 billion (GBP 257 million) meaning only one fifth of the potential is yet realised.

There are approximately 7,000 qualified designers in the country and approximately 5,000 in the various campuses pursuing design education. By 2020, the total number of designers

required in industrial, graphic, communication, packaging and other design domains is approximated at 62,000 provided the design potential is fully realised.

The design institutes in India need a transformation. There is a need to increase emphasis on research and doctoral education. Design institutes need to cooperate extensively with other domains of study, such as business, social sciences and technology. Designers today are expected to think beyond mere artefacts and be more strategic in their work. The boundaries within known design disciplines are blurring and there are several other disciplines that are practicing design. Design has become pervasive and hence the nature of design education also needs a change. A new way, marked by an attitude of openness, cooperation and exploration is needed to change the way design education is perceived.

Niche Programmes

Design is now branching out of its core roots to newer applications and utilities. Areas such as interaction design, service design, transformation design, and instruction design are establishing new paradigms. New tools and methodologies are being developed.

From being an intuitive discipline, design is growing

into a discipline, replete with tools and frameworks. There is a growing focus on systematic and methodical incorporation of user experience in design, which entails the involvement of competencies in marketing research, consumer behavior, technology, anthropology and psychology in the design processes. It is important for Indian design institutions to embrace these new developments.

Globally, design companies have developed a suite of services using design thinking and design methods. Different kinds of design services developed globally are design of services, design of public services, green design, etc. India needs these capabilities especially to contribute to the national missions announced by government of India. Design management and strategic design are other two areas where India needs to evolve its capabilities.

The opportunity here for the British universities is to bring in their experience and expertise in the areas suggested above and similar such niche areas and take advantage of the new opportunities along with their partner institutions.

Continuing Education and Faculty Development Programmes

The number of institutes providing design programmes

is rising. There is a common sentiment within design industry that design graduates are not well trained/educated. The design graduates do not possess competencies as required by the industry. A disconnect between syllabi and prevalent design trends is felt by practitioners. It is felt that the current education system either produces thinking designers with lesser skills or produces skilled designers with a limited thought input.

Shortage of qualified and quality faculty is a factor that hampers the quality of design graduates and creates obstacles for more institutions to come up. Some faculty development programmes are in existence, but they are not sufficient. There is a pressing need of continuing education programmes for design faculty, creating a platform for sharing teaching practices and implementing faculty development programmes. This is

a key area for British universities to cooperate with Indian agencies or partner institutions. The lack of qualified design faculty is clear. A lot of design institutions are recruiting faculty from other countries and are also inviting visiting/adjunct faculty from abroad. There is a will amongst design institutions to recruit foreign faculty, but the path for most of them is not clear. It would augur well if there is a formal mechanism created to receive the requirements of faculty recruitment and to disseminate it amongst the academia and professionals in the United Kingdom.

The faculty development programme could be specific workshops by visiting design educators from the UK, as well as a proper one-year blended learning training programme offered in India, to which Indian institutions could depute their faculty. Opportunities for faculty members from Indian institutions to spend a fortnight or a month in the UK to learn and experience the teaching there could also be explored.

Continuing education programmes (CEPs) for executives and designers are nearly absent in the Indian design education landscape. The CEPs that currently exist are mostly aimed at informing non-designers about basic issues related to design. Advanced and emerging issues are seldom covered. British universities, in partnership with Indian institutions or industry bodies or agencies, could offer executive education programmes.

Master's and Ph.D. Programmes

Creation of true master's programmes as partnership, twinning or one plus one programme is a pressing requirement for the advancement of design knowledge and profession. Master's programmes that build on bachelor's degree knowledge are needed. The universities running design programmes have the mandate to offer Ph.D. programmes, but do not have Ph.D. guides to conduct these programmes. Partnership between Indian and UK universities could create a difference is instituting Ph.D. programmes.



Articulation and Validation

A number of UK universities sign memorandum of understanding with Indian institutions in good faith and with a hope that it will pave the way for good cooperation. Thereafter, not much action happens. Such relationships are to be nurtured by way of creating opportunities for exchange of ideas, students, faculty and projects. These steps increase interaction, create opportunities for dialogue, and inform the Indian student about the capabilities and distinctiveness of the UK university. The partner schools could think of developing virtual learning communities among the staff and students. These communities would help in bridging the faculty gap at the Indian end to some extent and would help create faculty-to-faculty relationships, which would in turn strengthen institutional relationship.

Another stumbling block in the relationship is articulation and validation. This can be overcome at low cost if an understanding was reached to allow programmes from Indian institutions having Design Education Quality Mark (DEQM) to be nearly automatically articulated and validated, saving a lot of time. The DEQM has been developed on the lines of the Quality Assurance Agency, UK in cooperation with them and is quite similar.

Bilateral Activities

Creation of regular bilateral activities is essential to the vitality of relationships between Indian and the UK design institutions. Exhibitions like New Designer held in UK could be brought to India to demonstrate the achievements of design graduates from UK universities. An annual competition, wherein Indian and UK students participate, could be organized to bring students from both countries to work together. There is some level of cooperation and activity happening between India and UK design institutions already. A website dedicated to India-UK design education partnership and an e-newsletter could be initiated to disseminate information about the activities to increase participation and help educate Indian institutions about partnership possibilities. The website could be extended to become a platform for sharing best practices in terms of teaching, interesting projects, industry-university relationship models and much more

Occupational Standards for Design

Designers are engaged for and engaged in different job functions in design departments of companies and consultancies. A design job has several occupations, applications and expectations. Graduating designers with specialization in

a particular design domain have varying degrees of knowledge and skills to address specific occupations. Against this reality, a qualified designer is seen through a constricted view of either being good enough or not.

Moving beyond the limited scope of design graduates being employed as designers in consultancies, companies and organizations, there is a world of opportunities opening up for designers to work in functions, like marketing, business strategy, innovation, human resource management and so on. These new opportunities have become possible because of the implicit nature of design process that all design graduates master through their respective programmes

It is proposed to jointly develop with the UK, the occupational standards for the design profession. The occupational standards define individual competence in performance terms—the successful outcome of work activity. They are concerned with what people can do, not just with what they know. The standards for design will identify and standardize competencies, which are required for successful performance. It is a comprehensive concept, including knowledge, skills and attitudes necessary to perform a job, and assessment of the ability.

Occupational standards would

have great value and utility within the industry. They could be used by employers for recruitment and selection, job design and evaluation, training needs analysis, learning programmes and performance appraisals. They could be used by academic institutions to frame their programmes to address specific needs. They could be used by students to inform their own career progression and preparations required to attain the intended careers. The occupational standards would:

- recognize multifarious design occupations within the design industry

- recognize new jobs and occupations that are possible due to changing nature of design profession and its understanding
- recognize jobs and occupations that are possible due to the implied strength of the design process and design thinking.

In conclusion, the design education in India is on the cusp of radical transformation and internationalization as confirmed by the survey respondents. India's rapid economic development and young demographics is translating into an expanding education sector. The survey

confirms keen interest among Indian design institutions to engage with international faculty and partner with universities overseas. Similarly, students are keen to have international exposure. UK universities could take the lead in harnessing this major opportunity in India by strategically working to fill some of the gaps in the design education system by entering into long-term partnerships for mutual benefit.



GLOSSARY

The following abbreviations can be found throughout this publication:

AICTE – All India Council for Technical Education
B.Des. – Bachelor of Design
DEQM – Design Education Quality Mark
DIC – Design Innovation Center
GBP – Great British Pounds
GER – Gross Enrollment Ration
HCI – Human-Computer Interaction
ICT – Information and Communications Technology
IDC – Industrial Design Centre, IIT -Bombay
IIT – Indian Institutes of Technology
INR – Indian Rupees
M.Des. – Master of Design
MHRD – Ministry of Human Resource Development
MOOC – Massive Open Online Course
NDIN - National Design Innovation Network
NGO - non-governmental organization
NID – National Institute of Design
NITI Aayog - National Institution for Transforming India
ODS - Open Design School
QAA – Quality Assurance Agency, UK
R & D – Research and Development
SME – Small and Medium Enterprise
UGC – University Grants Commission
UI – User Interface
UK – United Kingdom
USA – United States of America
US\$ - United States Dollar
UX – User Experience

Note: Exchange Rate (1 GBP = 81.70 INR) has been used throughout this report

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