Design Educator, the Key Contributor to the Success of the Design Education

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Abstract:

The key to the success of the design education is the quality of its faculty members, the design educator/s. Its pedagogy based primarily on project-based education and professional orientation demands higher contact hours, continuous interaction and face-to-face teaching. Faculty member's understanding, experience, personal knowledge, capability, and cognitive style form the key to the success of the programs. The emphasis here being on developing design attitude, design ability, maturity and the confidence to take up independent design assignments as design professionals, the design education depends heavily on its faculty member/s. The faculty member here is the mentor, the facilitator and equal partner in the journey undertaken by each student. She shapes students' views and develops design culture among them. The faculty member/s is thus the major influential factor in design education. Besides the knowledge of the subject matter, the design educator would possess the knowledge of its teaching and learning processes. The course that she conducts needs to be designed, in terms of its content, intended learning outcomes, assignments, teaching methods, modes of delivery, and assessment methods, etc. Design teaching is thus a specialized job. One needs to be trained to be a design educator. With the rapid upsurge of design education in India, the shortage of well-qualified faculty is the major area of concern today, hindering both the development of well-trained graduates as well as more design institutes to come up in the country. There is an urgent need for a well-structured program to train design educators in India.

Preamble:

Design education is normally structured around project-based learning. Its pedagogy focuses strongly on the principles of *'hands-on experience'*, *'reflection through action'* and *'reflection on action'.* Design students take up real-life challenges, apply their learning of process and elements of design and generate design solutions in the form of prototypes and/or models. The iterative process of design demands research, analysis, idea-generation, and decision-making. Beginning with ill-defined problems, students through their journey deal with ambiguity, explore a variety of approaches

and experiment with various alternatives. There will be a constant struggle for understanding the context; generating, screening and resolving the concepts; inclusion of features; and optimization of the solution. As Frost stated, “the path from the problem to the solution is not clear, but paradoxically, solutions are legion and heavily, if mysteriously contextual. None, however, is clearly right or wrong” [1]. Besides aesthetics and usability, design today encompasses complex issues, ranging from sustainability, culture, ethics, and environment, etc. to name the few. Stretching their imagination, students are required to think wide and deep. Constant discussions, conjectures, explorations, and experimentations are part of the design process followed. With the emphasis on the design process and the depth of understanding, students here learn ways of thinking and learning. The pedagogy based primarily on project-based education and professional orientation thus depends heavily on face-to-face teaching. The faculty member here is the mentor, the facilitator and equal partner in the arduous journey undertaken by each student.

The overall objective of the design education program is to develop a creative and unique personality of the designer, a personality characterized by humility, sensitivity to life, empathetic understanding, positive attitude and the confidence to analyze and provide a solution to any problem through ‘design thinking’ [2]. Design education thus needs to have a strong correlation with design practice. The project-based approach of design education combines theory inputs with short assignments, research, training and apprenticeship with various industries, visits to seminars, conferences, exhibitions, etc. The Design curriculum will thus be a creative blend of design theory and hands-on practice. It focuses on imparting the right design skills and developing a high degree of sensitivity amongst the students. The emphasis will be on developing concern among the design students for the physical, social and ecological environment. The curriculum will provide opportunities to design students to gain new experiences, insights and new skills. And in the process, it helps develop curiosity, observation, inquisitiveness, and empathy in these young minds. The assignments and projects mostly based on real-life situations constantly challenge students to stretch their creativity and their design ability. Originality, conceptual clarity, understanding of issues and context, strong knowledge and skill base, will be some of the criteria involved here. The emphasis thus being on developing design attitude, design ability, maturity, and the confidence to take up independent design assignments as design professionals, the design education depends heavily on its

faculty member/s. The faculty member drives the students for a higher degree of creativity, originality, and quality in their process of developing professional design solutions. Faculty member/s here are the composer, the conductor and the coordinator/s of the journey, the course, and the program.

Students are expected to synthesize theoretical inputs and develop the ability to apply theoretical knowledge to generate practical solutions. Since the program requires a flexible and open learning approach, the faculty member plays a critical role as an advisor, a facilitator, and a mentor. Faculty members' strength in terms of their experience, capability, and mastery over the subject thus forms the key to the success of the program and the department. The faculty member helps students find their directions. Guiding students through initial ambiguity to steady progress and achievement of their potential demands a fair amount of perseverance and patience and a high degree of motivation on the part of the faculty member. Through constant guidance and support, the faculty member helps the student understand her strengths and weaknesses, helps her become an independent learner and helps her set and achieve her goals. She would help the student develop individual abilities and approaches that suit her needs and aspirations. The faculty member gets fully involved in the course and takes the journey with the student, constantly monitor her progress, and instantly improvise whenever required to facilitate the student. Moreover, since the emphasis is on developing the student's individuality, and since learners come from diverse cultural and social backgrounds, the faculty member would be conscious of not embracing and imposing any single design identity or a specific style.

Design Education and its Educator:

In the innovation-driven global economies of today, the design is now established as the core of the innovation process. Harnessing the power of design is thus critical for the economic and societal development of the country. It is now recognized globally that the design and creative education is the way forward for any country to deal with the complexity of the challenges in the 21st century [3]. Design education is today fundamental to national prosperity. Here in India also design education has now emerged as an attractive career option. More and more students are now exploring and opting for design as their career choice. Design education in India is expected to witness a rapid upsurge in the next few years. However, the shortage of well-

qualified educators/ faculty members is today the major concern for the design institutes in India.

The design has now established itself as an academic discipline. It has its unique approaches and practices, different from the ones used in the education of science, technology or humanity. Began with a restricted objective of beautification of objects, messages, and environment, the design has over the years expanded its scope and reach. Design now deals with interactions, services, experiences, and strategies. Today's designers deal with the challenges that are complex and exist within larger systems. Steering the students of design through their complex assignments and projects to appropriate solutions forms a critical challenge for the design educators today. Besides, the professional orientation of the design education demands its faculty members to have both the academic as well as industry experiences. A fresh graduate or the members with no industry experience as a faculty will have limitations here as she can only bring in an academic perspective. Similarly, industry experts and /or visiting faculty can only bring in a limited perspective to the class.

The key to the success of design education is the quality of its faculty members. Today's fast-paced economy demands design leaders and industry-ready designers equipped with required design knowledge, skill sets, professional approach, and experience. Design, primarily a practice-based profession, can best be demonstrated. The faculty member has to constantly demonstrate, both, the design attitude and the design aptitude. And this has to be demonstrated inside as well as outside the class. The faculty member would be constantly the center of the action, source of inspiration, guidance and a mentor for the students. She creates the benchmarks for the students through her teaching and conduct. She shapes students' views on design. She develops interests, curiosity, and passion among the students and thereby initiates the student into the world of design. The faculty members, the design educator/s, are the major influential factor in design education [4]. Humility, sensitivity, empathy, unbiased approach, openness, curiosity, wide interest range and depth of understanding are some of the attributes expected from the design educator, besides strong knowledge and skillsets. Expert communication skills, superior listening skills, deep knowledge and passion for their subject matter, ability to build caring relationships with students, friendliness and approachability, strong work ethic, high expectations for all, are some of the qualities of a good

educator [5]. She invests time and effort into her students offering guidance and support in the classroom and on a personal level [6]. Design teaching is today a specialized job. And one needs to be trained to be a design educator.

Design education focuses on the development of thinking skills. As a professional discipline, the design is about the application of knowledge and skills. Thus more than the quantity of knowledge, knowing where to find it, which specific kind of knowledge to apply in a particular situation, and how to use it when needed, is important [7]. It is difficult in design education to define requisite knowledge. With project or studio setting as the main pedagogical framework here for teaching, instructions and guidance to the students would be mostly at the individual level and in an interactive situation. This instruction paradigm thus depends strongly on the personality, experience and cognitive style of both, the teacher and the learner [7]. The learning objectives of the course and the knowledge to be transferred thus would be completely based on the educator's understanding and her personal experiences and knowledge. The knowledge to be transferred may be implicit and may remain unarticulated in an explicit form. As Akin mentions, "insufficient instructions of the design process, inefficiencies in learning and motivational difficulties, are some of the major weaknesses of this design education paradigm" [7]. In such situations, the student learns and acquires knowledge mostly through her interpretations and understandings.

Design Educator; Knowledge and Culture:

The culture of design as understood by the design educator affects the way she teaches. This culture of design, generally termed as 'Cultural Capital' of design is developed majorly from her values and beliefs, and her accumulated knowledge through education and experiences [4]. Her exposure and experiences of her learning environment during her student days and her previous educators influence her approaches and methods of teaching. She has to constantly guide and instruct students at various levels and on a variety of topics. A design educator employs precedents as an alphabet or dictionary, a frame of reference for her students [4]. Examples and references would be derived from her 'cultural capital' of design to explain and communicate and make her views of design explicit. Subsequently, these would form the major part of the 'cultural capital' of design of her students, the future designers.

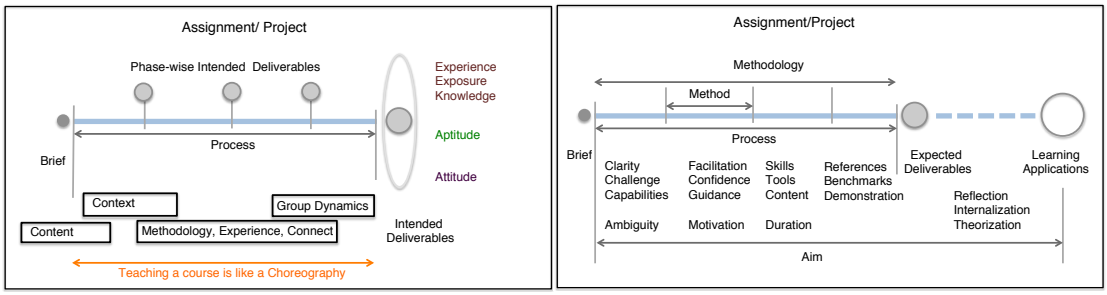
The knowledge possessed by the educator is described as Pedagogical Content Knowledge, PCK. *PCK* refers to the knowledge about the teaching and learning of particular subject matter taking into account it's contextual learning demands [8]. Shulman described PCK as “an understanding of how particular topics, problems, or issues are organized, presented, and adapted to the diverse interests and abilities of learners, and presented for instruction" [8]. As a taxonomy, PCK would assist the educator to develop clarity on the concepts and skills to be taught. It would help her organize and present the contents as a meaningful sequence and would help select the forms of representation during her interactions with the learners. PCK would help understand the learner, learning process and the difficulties faced. Thereby it would help the educator develop the methods of instructions that are most appropriate to the specific context/course. It is this specialized knowledge that differentiates educators from professionals and/or researchers. PCK helps the educator structure and transfer the content to others. It helps educators guide students in a meaningful manner. PCK lies at the intersection of content knowledge and pedagogical knowledge. While content knowledge refers to one’s understanding of the subject matter, pedagogical knowledge refers to one’s understanding of teaching and learning processes independent of subject matter [8].

The emphasis for the educator would be on ‘how to teach’ rather than only expand resources on ‘what to teach’. This would depend on the ability of the educator to transform knowledge into design rich adaptive instructions. Quality design educators would know the subject matter, both in terms of its content as well as its "teachability" and "learnability" [8]. She would emphasize the understanding of concepts, focus on core ideas in the topic, continuously diagnose the difficulties faced by the learners, and explore a variety of different teaching methods including unconventional methods [9]. She would continuously explore, revise and develop ways to transfer the knowledge in the form that is accessible to students. Thus developing her specialized pedagogical content, the design educator would also create new knowledge.

Design Pedagogy and the Design Educator:

The faculty member designs the course, in terms of its schedule, plan, content, assignments, delivery modes, etc. and rehearses every detail of it. Teaching a course is like a choreography. The introduction of every element has to be timed; and methods of their presentations, the types of examples and references to be used,

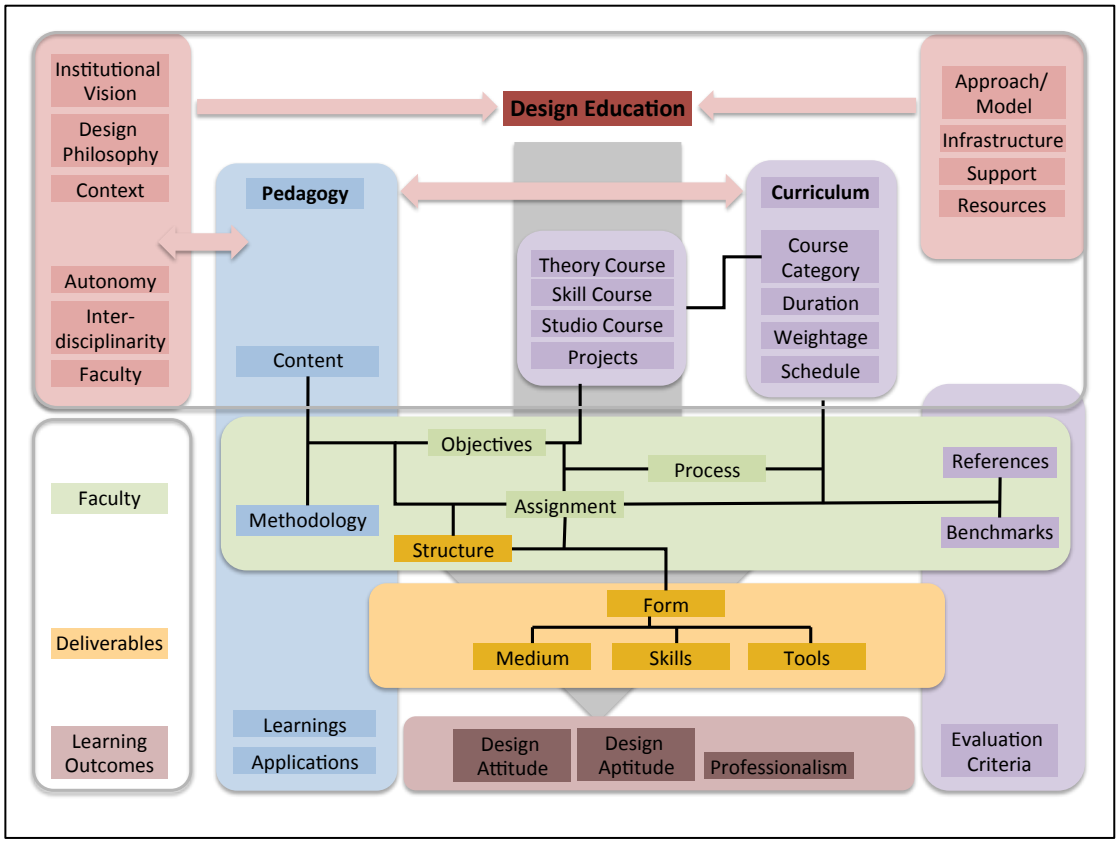
they all have to be worked out. The way the educator frames the prompt, defines the project, provides references and examples, creates the benchmarks, they all impact the scope and direction of the student work [10]. It takes a fair amount of explaining, cajoling and convincing to encourage and motivate students to stretch their boundaries and reach the conclusion of their assignments/projects. Intended learning outcomes, content, context, teaching methods to be used, and assessment methods are among the key elements of the course design [11]. These elements are interrelated. And the educator's philosophy of teaching and learning influences and informs all of them. Clearly articulating the intended learning outcomes would be the critical first step of the design of the course. And in the context of design education the deliverables at the end of the assignment, the learning outcomes, maybe in the form of proposal, concept and/or prototype in different mediums. Besides these, student's growth in terms of her design attitude, design aptitude, exposure, experience and development of new knowledge would also form part of the learning outcomes. And the objectives of the course here extend beyond the intended learning outcomes to include reflection and internalization for the students to understand its applications at a later stage and in a professional situation.



Intended Design Process and its Learning Outcomes in Design Education

Finalizing the content, what to cover in the class, will be the critical next step for the design educator. The context - the learners, their capabilities, facilities and resources available, etc. will affect the final decision on content, teaching methods as well as the mode of delivery. In the span of the course, the educator may adopt variety of teaching methods ranging from lectures, presentations, case studies, demonstrations, industry visits, expert and guest lectures, group activities, feedback sessions, etc. to encourage students' active learning, participation, and involvement, both inside and outside the classroom. Today's students do not want to learn passively sitting in a lecture. They have a variety of different sources for information and learning. They would like to learn at their convenience. It is thus important to

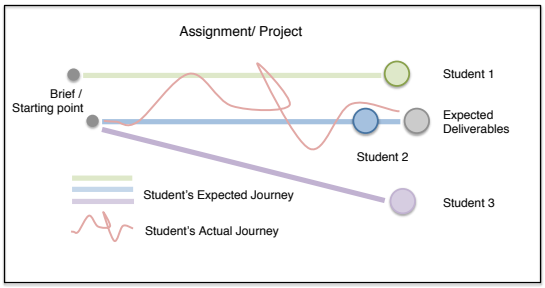
provide them the required space, time, resources and feedback [10]. The assignment/ project brief should provide the scope and opportunities for the students to explore different approaches and to expand their viewpoints. Since the duration of the assignment/project varies considerably, a well-defined timeline/ schedule would help the student remain focused on their tasks. Breaking up this timeline in different phases with clearly specified deliverables at the end of each phase would help students realize and analyze their progress and remain motivated during the entire process. Design educator's experience in understanding the learners, the group dynamics and her ability to connect with the students will help her effectively coordinate the journey of the students.



Interconnected Elements of Design Education and its Course Delivery

With the majority project-based education, the design of the assignment/development of the project brief becomes critical to the course. Keeping the initial brief of the assignment /project slightly open-ended would provide students the scope to revise it as per their interests, exposure, and contexts. The assignment/ project would, therefore, have its inherent ambiguity. The starting point or the beginning of the assignment/ project, the process followed and the research methods adopted at

different stages by each student would thus differ. And the process of design is inherently iterative and non-linear. It is also not defined clearly. The outcomes/ final solutions from each student will thus be unique and different as per the projects undertaken by them. In the process, the student may digress from the path or get stuck at some point. She may miss or skip a phase or a stage of the process. It's the educator's experience, her understanding, command, and clarity of the subject matter that helps her guide the students to move forward, bring her back on track wherever required, while also provide the required space, time and scope for explorations and experimentation, and for reflection and internalization of learning. She needs to constantly diagnose, assess and judge the work at every stage of the journey and guide the student whether to explore further or move forward. The quality of outcomes depends heavily on the benchmarks set by the educator. As Buckminster Fuller had mentioned, “if the solution is not beautiful, I know it is wrong” [12]. It is the educator’s in-depth understanding of the design and a sophisticated sense of aesthetics that helps her guide the students in design education.



The teaching approach of the design education revolves around the continuous review, assessment, and feedback to each student. Its open learning system encourages continuous peer review and learning for the students. And there will be a formal, end of the course evaluation by the course teacher. The institutional framework of evaluation mostly governs the evaluation criteria. The objective here would be to evaluate whether students have attained the expected outcomes. Besides the tangible outcomes, the learning will also be in the form of development of design attitude, design aptitude, new knowledge, design sensibility, professional approach and their application in the final solution. The teacher is thus evaluating here the outcome/s as well as the student's growth as a designer. The emphasis would be on evaluating both, the outcome/final solution as well as the process. The parameters used for evaluation would include understanding of the problem; development, expansion and/or reinterpretation of the brief; related research in terms of breadth and depth of the information obtained, methods and tools used to carry out research; redefined brief – analysis, inferences, and insights developed, etc. as part of the research phase. And for evaluating the design and development phase,

she would look for creative explorations in terms of their variety, quality and quantity; phases of explorations; synthesis and finalization of the concept; further development and refinements of the selected concept/s; details and clarity of final design; presentation quality – model/ prototype, document, etc. Clearly defined learning outcomes and instructions for every stage of the process would provide the much-required clarity to both the teachers as well as the learners.

Conclusion:

Design education is structured around project-based learning. With its overall objective to develop a creative personality of a designer, the focus here would be on developing design attitude, design aptitude, professional approach and a high degree of sensitivity among its students. For the major part of their study, the students would be working on assignments or projects, individually or in groups. And the assignments and projects will have their inherent ambiguity. The process of design is characteristically non-linear and iterative and is not well defined. The students traverse through varied stages, from research, analysis, idea-generation, synthesis, prototyping, etc. and use different methods, mediums and tools in the process. Throughout the arduous journey, students are constantly challenged to stretch their boundaries for a higher degree of creativity, originality, and quality in their process of developing professional design solutions. With the emphasis on the design process and the depth of understanding, students here learn ways of thinking and learning. The pedagogy thus, based primarily on project-based education and professional orientation, depends heavily on face-to-face teaching and constant interaction. The faculty member here is the mentor, the facilitator and equal partner in the journey undertaken by each student.

The faculty members, the design educator/s, are the major influential factor in design education. Faculty member/s here are the composer, the conductor and the coordinator of the journey, the course, and the program. She would be constantly the center of the action, source of inspiration, guidance and a mentor for the students. The faculty member develops interests, curiosity, and passion among the students and thereby initiates the student into the world of design. She plays a critical role in effectively steering her students through complex assignments and projects to appropriate solutions. The quality of outcomes depends heavily on the benchmarks set by her. The faculty member shapes students' views, and also her 'cultural capital'

of design, upon which would be founded her future journey as a professional designer. The key to the success of design education is the quality of its faculty members.

Design education, it is now recognized, is fundamental to national prosperity. Here in India also design education has now emerged as an attractive career option. More and more students are now exploring and opting for design as their career choice. Many new design institutes have come up in the last one and half decades and the trend is expected to continue in the near future. Design education in India is expected to witness a rapid upsurge in the next few years. The quality of these programs would depend heavily on the understanding, experience, personal knowledge, personality and cognitive style of its faculty members. Due to the nature of these programs, the average size of the classes would generally be small. And its project-based education requires higher contact hours and continuous, face-to-face interaction with each of its students. The shortage of well-qualified faculty is the major area of concern today, hindering both the development of well-trained graduates as well as more design institutes to come up in the country.

Design teaching is today a specialized job. And one needs to be trained to be a design educator. The pedagogical content knowledge is the strength that she possesses and the one that differentiates her from other professionals. She knows the subject matter, both in terms of its content as well as its “teachability” and “learnability”. The faculty member designs the course - it's content, intended learning outcomes, assignments, teaching methods, modes of delivery, and assessment methods, etc. She would guide students in a meaningful manner. Faculty member’s experience, capability, and mastery over the subject form the key to the success of the program and the department. Besides, the professional orientation of the design education demands its faculty members to have both the academic as well as industry experiences. An industry expert, visiting faculty or a fresh graduate can only bring in limited perspective to the class.

There is today hardly any support, encouragement or handholding mechanism for the young design educators to develop their interests, passion as well as essential competencies in pedagogical content knowledge. They have to be trained in pedagogical methods, instructional techniques, course design, etc. There is an

urgent need for a well-structured program to train faculty members/ educators for design education in India.

References:

1. Green L., Bonollo E., Studio-based teaching: history and advantages in the teaching of design
2. http://www.shashankmehta.com/
3. Restarting Britain; Design Education and Growth; Design Commission, UK; https://www.policyconnect.org.uk/apdig/sites/site_apdig/files/report/284/fieldreportdownload/design-°©-commission-°©-restarting-°©-britain-°©-design-°©-education-°©-and-°©-growth.pdf
4. Strickfaden M., Heylighen A.; Exploring the 'Cultural Capital' of Design Educators
5. What Makes a Great Teacher; https://owlcation.com/academia/Characteristics-Of-A-Good-Teacher
6. What Makes a Good Educator?; https://www.ziprecruiter.com/e/What-Is-an-Educator
7. Oxman R.; Think-maps: Teaching Design Thinking in Design Education
8. Phillips K., Miranda M., Shin J.; Pedagogical Content Knowledge and Industrial Design Education
9. Penso S.; Pedagogical Content Knowledge: how do student teachers identify and describe the causes of their pupils' learning difficulties?
10. Design Educator Profiles: Rob McConnell; https://educators.aiga.org/design-educator-profiles-rob-mcconnell/
11. Course Design: Questions to Consider; https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/planning-courses/course-design/questions-consider
12. https://www.goodreads.com/author/quotes/44478.R_Buckminster_Fuller?page=3