

Leather Research Industry Get-Together (LERIG)-2020

**Design and Technology Education for
Footwear & Leather Products Industries**

- Present Trends, Challenges and Future Directions

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Contents

1. Introduction-Design Education in India
2. Design Education for Footwear & Leather Products
3. Technology Education for Footwear & Leather Products
4. Vocational & Skill Development Programmes
5. Present Trends
6. Challenges
7. Future Directions
8. Need of the Hour-Integrated AIR (Academia, Industry & Research)
9. Capacity Building Measures for Design & Technology Students
10. Conclusion
 - References
 - Acknowledgement

1. Introduction-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.
- **The Growth** - The choice of courses in design and the number of students interested in pursuing design courses are both on the rise.
- **The Potential** - High potential- 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.
- **Accreditations** - 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.

Approaches in Design Education

- **Single loop design education-** concerns how the design discipline responds to the demands arising from the accelerated changes in this transitional 21st century service economy. It seeks to change the context and preferred designer skill-set without changing design education.
- **Double loop design education-** concerns the introduction of profound behavioral changes in both design education and business education. Design as defined through its specific skill-sets implies the invention of common learning spaces and the reorientation of organizational capital to integrate design as a resource.

2. Design Education for Footwear & Leather Products

Degree & Diploma programs

- National Institute of Fashion Technology (NID)
- Footwear Design & Development Institute (FDDI)

- **Degree Programs in Product/Industrial Design**
- National Institute of Design (NID)
- Indian Institute of Science (IISC)
- Indian Institute of Technology(IIT), New Delhi
- Indian Institute of Technology(IIT), Mumbai
- Indian Institute of Technology(IIT), Guwahati
- Indian Institute of Technology(IIT), Kanpur

3. Technology Education for Footwear & Leather Products

Degree Programs

- Anna University (AC TECH) in Collaboration with
- Central Leather Research Institute (CSIR-CLRI)
- Footwear Design & Development Institute (FDDI)
- College of Leather Technology (CLT), Kolkata

Diploma Programs

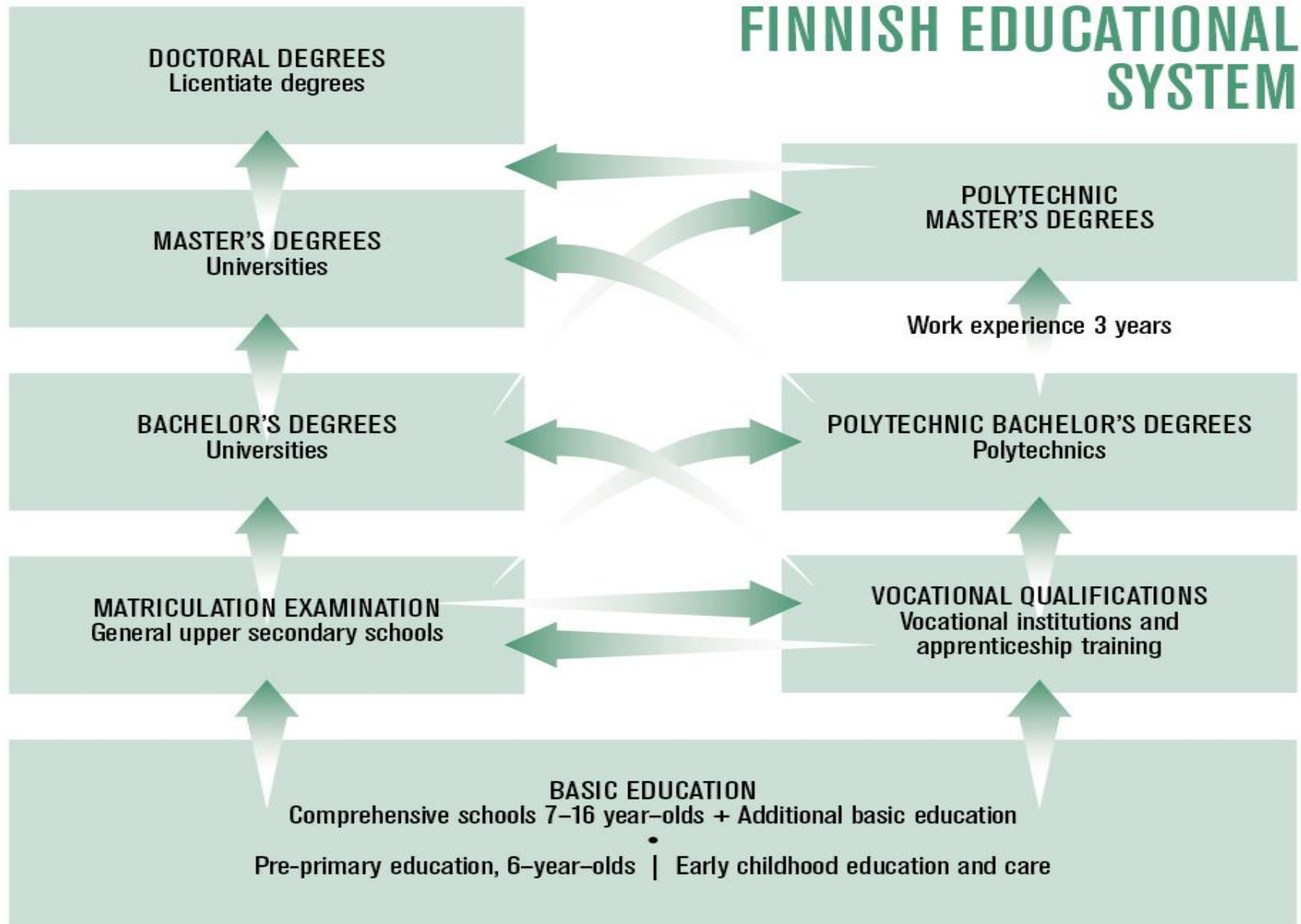
- Central Footwear Training Institute (CFTI)
- Institute of Leather Technology (ILT)
- Karnataka Institute of Leather Technology (KILT)

4. Vocational & Skill Development Programmes

- Central Leather Research Institute(CSIR-CLRI)
- National Institute of Fashion Technology(NIFT)
- Footwear Design & Development Institute(FDDI)
- Central Footwear Training Institute(CFTI)

5. Present Trends-Education System

FINNISH EDUCATIONAL SYSTEM



....Present Trends - Teaching & Learning

- Integrated Learning Solutions
- Augmented Reality/Virtual Reality
- Personalized Learning
- Professional Development of Teachers
- Bite-Sized Learning
- Internet of Things
- Formative Assessment solutions-Continuous Evaluation and Feedback
- Exam Management Revolution
- Block chain Technology

...Present Trends - Teaching & Learning

- Digital Ethics and Privacy
- Online Education
- Shifting from STEM to STEAM
- Smart Spaces (AI driven analytics, smart boards, etc.)
- Cost Management in Education (more investment in cloud technologies to reduce operational cost, digital forms of docs, certificates, etc.)
- Increasing Wellness programs (to resolve anxiety & stress, to aware emotional, physical and spiritual being)
- Changing role of a Teacher

....Present Trends - Teaching & Learning

- Artificial Intelligence Learning
- Cultivation of Empathy
- Genius Hour (to learn and explore favourite and interesting subjects)
- Reading through a Digital Library
- Smart Campus (Digitized campus, interaction of Humans & technology enabled environments for an immersive and impressive experience)
- Wireless Presentation Technologies

....Present Trends-in Design

- Inclusive Design
- Social Design
- Sustainable Design
- Eco Design
- Techno Design
- Modular Design
- Design for 5Rs
- User Centric Design
- Ergo Design
- Digital Design

....Present/Emerging Trends-in Technology

- 3D Printing/4D Printing
- Virtual Reality
- Augmented Reality
- Artificial Intelligence
- Robotics
- Block Chain
- Big Data
- Internet of Things
- Smart Materials
- Wearable Technology

....Present Trends- Subject Areas

- Non Leather Materials, Footwear & Products
- Luxury Footwear & Products
- Design & Industrial Ergonomics
- Design for Special Needs
- Digital Design -2D & 3D CAD
- Virtual Prototyping-3D CAD
- Smart Products/Wearable Electronics
- 3D Printing/Additive Manufacturing
- Bespoke/Customized Design

...Present Trends-Subject specifics

- Luggage & Travel Goods
- Athletic & Sports Footwear
- Fashion Boutique Management
- Product Design Studio Management
- Entrepreneurship Development/Start-ups
- Project Management
- Craft Cluster Development
- UI/UX
- Product & Fashion Photography
- Professional Ethics & Practices (IPR, CSR, SAS)

Present Trends-Career pathways/job roles

Fashion Product Design & Development

Designer, CAD In-charge, Manager-Product Development, Creative Head, Design Project Manager, Design Director, Design Entrepreneur(Design Studio, Designer's Boutiques, Craft Boutiques)

Fashion Product Manufacturing

Production Coordinator, Production Merchandiser, Quality Control Manager, Production Executive, Buying House Auditors, Sourcing Manager for Domestic, Export and International, Production Entrepreneur

Fashion Product Marketing

Brand Manager, Brand Coordinator, Merchandiser- for Export, Retail & Buying House, Fashion Marketing Executives, Fashion Coordinators, Retail Managers , Market Researcher, Trend Forecaster, Business Development Manager

Fashion Product Communication

Visual Merchandiser, Graphic Designer, Product/Fashion Stylist, Product/Fashion Photographer, Fashion Journalist

6. Challenges

- Conventional Methods of Teaching vs New Mindsets
- Adaptation of Mega trends in the Curriculum
- Preference of online teaching against conventional/physical class room teaching
- Digitalization of Instructional Knowledge Transfer
- Rapid Speed of Changes in knowledge repertoire
- Inadequate update of Educational/Industrial Infrastructure in India against the rapid changes in the Global Market Place.
- Emerging Disruptive Technologies in Product Designing, Prototyping and Production (Holographic projections, AI, Robotics, 3D printing, Smart materials, etc.)
- Inadequate R&D culture at all levels
- Training of the Teachers and Trainers to match the rapid global trends
- Inadequate collaboration between Academia and Industry

...Challenges

- Economically hard times, growing social disparities
- Youth unemployment
- Growing impact of socio-economic background
- Ageing society; growing welfare expenditure
- Regional development (rural vs urban)
- Migration and multiculturalism
- Gender disparities
- Pupil welfare and safe academic environments
- Group/Batch size in Higher/Professional Education
- Digital learning and new technologies

7. Future Directions

- Inter disciplinary/Cross disciplinary learning
- Complete Automation
- Introduction of Humanoids in Education
- Customized Education
- Sustainable Education
- Dominance of Disruptive Technologies
- Dominance of Virtual Teaching & Learning Platforms

8. Need of the Hour- Integrated AIR (Academia, Industry & Research)

- Technology Awareness Programs
- Joint/Collaborative Research Programs
- Part Transactions in the Industry
- Field/Market Research
- Design Consultancy Projects
- Class Room Projects
- Industry Internships
- Faculty Industry Attachments
- Cluster Development Projects
- Incubation Centre/Start ups
- Design & Technology Contagion System

Measures for Capacity Building of Design & Technology Students

Capacity Building - Holistic Approaches

- Building the core knowledge & skills for creativity, design & technology through the Major/Core subjects.
- Creating the space / scope for Lateral and Out of Box thinking and exploring the same through various design subjects/studio based projects.
- Providing opportunities to explore the creative and design thinking skills and appropriate technologies with real time industry oriented class room/studio projects, Internship projects and final Graduation projects.
- Encouraging the students to participate in the National and International design competitions and offering free/floating credits as recognitions for creative achievements.

Capacity Building-Specific Approaches:

- Exploring innovative material alternates
- Exploring innovative finishes and surfaces
- Exploring innovative techniques using creative patterning & construction techniques.
- Organizing technical workshops/seminars by inviting practicing professionals and industry experts on the new emerging areas incorporated into the curriculum.

Capacity Building through Industry Interface

A. Lecture Series / Practical Demonstrations by Alumni and Industry Experts

- Alumni and Industry experts shall be invited across the semesters to share the real time industrial experiences. The interactions/dissemination of knowledge through video conferencing and online platforms can also be incorporated as applicable for the curriculum.
- Expert interactions/lectures on leather sourcing, innovative leather tanning & finishing processes, fashion trends & forecasts, disruptive technologies, are to be considered. Industry masters for innovative texture development/ surface design techniques on leather, creative product explorations, industrial pattern making & product development shall be invited.
- Experts from various design and technological fields having different and unique expertise, viz. Fashion products, Luxury & Lifestyle Products, Industrial Machines, Smart & Wearable Electronics, Sports Goods, etc. may be invited to impart inter and cross disciplinary understanding and integrative applications of innovative design and modern technologies in trend.

Capacity Building through Industry Interface

B. Classroom Projects

- Provisions are to be made in the curriculum for carrying out relevant design & technology related projects in the class rooms and studios to ensure the real time applications of creative learning.
- Faculty members and students would be enriched with the sharing of knowledge and skills for the contextual applications with the symbiotic relationship developed between the Industry stake holders and Institutions through class room projects with practically workable regulations and norms.

C. Industry Mentorships

- The present practices of industry mentorships during **tannery training, internship and graduation projects** are to be improved with more scope for real time projects.
- Provisions are made for having regular industry / alumni mentoring throughout the course at various subject levels across the semesters.

Capacity building through Industry Interface

D. Industry Visits to understand Manufacturing Processes

- Incorporated with stipulated hours allotted within the subject matrix and also by allotting a dedicated period within the span of each semester.
- Virtual visits and modules are envisaged in collaboration with the peer institutions, fashion product industries, machinery and raw material manufacturers, industry related IT solution providers; product design software suppliers and educational media developers.

E. Part Transaction In Industry Environment Of Specific Course

- To be achieved effectively through the support of the Alumni and Industry experts and as per the convenience of the industries.

Capacity building through Industry Interface

F. Participation in National and International Leather, Footwear & Leather Products Trade Fairs, Exhibitions

- **National Fairs/Exhibitions:** Regular participations in India International Leather Fairs and International Designers Fair at Chennai , India International Leather Fair at Kolkata, Shoes & Accessories Fair and India Retail Fashion Forum at Mumbai, Footwear Accessories & Components Fair at Agra, India International Handicrafts Fair at Delhi.
- **International Fairs/Exhibitions:** Lineapelle Leather Fair, Italy; Tanning Machinery & Leather Fair, Bologna, Italy; Asia Pacific Leather Fair (APLF) Hong Kong; International Leather Goods Fair at Offenbach, International Footwear Fair, GDS Fair, Dusseldorf, Germany; Magic Show - USA, International Bags, Leather & Shoes Exhibition, Shanghai China, etc.

Design Education & Design Promotion Initiatives by Govt. of India

- Design Clinic Schemes
- Design Innovation Centres
- Design Education Quality Mark
- All India Design Aptitude Test
- Infusing Design in Engineering Education

9. Conclusion

- Managing Design & Modern Technology as a core competency is a challenging venture and requires a long-term vision.
- Companies and as have been reluctant to invest in building design capabilities. There exist, however, a number of companies that have understood that building a sustainable, competitive advantage requires adopting a long-term resource view of design management in order to improve the probability of success in the present chaotic business environment.
- Industries have to integrate design theories into their organizational theories, and see —design science, design methods, and conceptual models as skills for designing their organizational platforms, structures, and systems. This is a challenge for design education.
- Designers and Technologists have to reinvent the guilds, and to become more effective entrepreneurs in order to help society at large to face the changes in this transitional period between two socio-technical systems. They also have to design their profession as a part of the creative industries.

Thank You!