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Challenges and Opportunities of Online and Hybrid Pedagogies in Education of Footwear Technology in India

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Abstract: *This research aims to study the challenges and opportunities of online footwear technology education. It focuses on the major problems faced by students while attending online classes, who are doing Footwear Design and Production courses from various footwear and fashion institutions across India. This research will also identify the best online pedagogies in footwear technology by which students can get the best understanding during their classes. It is also targeted at how students can take more interest in online classes. Before COVID-19, educational institutions of footwear technology in India were teaching through offline mode. Once the pandemic started, it challenged the education system across the world and forced educators to shift to an online mode of teaching overnight. E-learning through online classes was familiar to everyone, thus it was re-implemented with the new format. Online education has proven to be a boon for everyone who is associated with the field of education in the COVID-19 pandemic time. However, it reflects the further scope of improvement. To examine this, two separate environments were created for the same group of students. Innovative methods of online teaching were introduced. The grasping capacity of both groups was analyzed and compared. Students were approached online through the questionnaire. Various educationalists, professors, and footwear veterans have been consulted for the research.*

Keywords: *COVID, Online Education, Innovation, Footwear Technology, E-learning*

I. INTRODUCTION

The research will revolve around Footwear Technology, E-learning (online education), teaching pedagogy, COVID-19 and its impact on education concerning footwear institutions of India.

- 1) The footwear is the apparel of the foot. Footwear Technology is the branch of science that studies the manufacturing process of footwear from two-dimensional sketch to three-dimensional footwear. It is a technical subject comprised of designing, material science and manufacturing process. If we talk about the career prospects of students in India, there are many options are available like Engineering, Medical, Civil Services, Banking & Finance, etc. but there are some unique career options in the footwear field. Courses are in the area of design, merchandising and production. Its curriculum is based on theory and practical subjects in the ratio of 30:70. Besides theory, practical classes are mandatory for a better understanding of the subject. Various institutions in India are providing skills in footwear. A few of them are:
 - a) Footwear Design & Development Institute (FDDI)
 - b) National Institute of Fashion Technology (NIFT)
 - c) Central Footwear Training Institute (CFTI)
 - d) Central Leather Research Institute (CLRI)
 - e) State Government Leather Institute (GLI)
 - f) Gandhigram Rural Institute
 - g) Dayalbagh Educational Institute (DEI)
 - h) Aligarh Muslim University etc.
- 2) E-learning is a type of learning conducted digitally via electronic media, involving the internet. It can be accessed via most electronic devices including a computer, laptop, tablet, or smartphone, making it a versatile and easy way for students to learn from their place. It may in the form of digital materials, online courses, virtual tutoring, apps and software. Online education is the mode of learning through multimedia tools. The teacher teaches the students through a virtual platform. As it requires the internet, it is part of E-learning.

Source: trueeducationpartnership.com

- Pedagogy is the art of teaching. It is a term that refers to the method of how teachers teach, in theory and practical. It is defined as the study of imparting knowledge and skills concerning educational context. There is a wide difference between the pedagogy of theory and practice. Hybrid pedagogy is a methodological approach that helps to define a series of varied processes and practices.

Source: tophat.com; dbpedia.org; jessestommel.com

- Corona Virus disease 2019 (COVID-19) is declared a pandemic. India reported its first case of COVID-19 on 30 January 2020. To prevent its spread Lockdowns were announced around the world. In India, lockdown started on 25 March-2020. In June-2020, India's recoveries exceeded reducing active cases but educational institutions remained closed. On 29th August 2020, the Ministry of Home Affairs, Government of India declared guidelines of Unlock 4, mentioning that students could come to the institute for any research project or practical guidance. But uncertainty was always involved. Classes started with a mixture of online-offline modes. A second wave that started in March 2021 was much larger than the first. By May-2021, India became the first country to report over 400,000 new cases in 24 hours. By June 2021, India had the second-highest number of confirmed cases in the world (after the United States) with 29.3 million reported cases of COVID-19 infection and the third-highest number of COVID-19 deaths following United States and Brazil.

Source: Times of India

- It was the first time when online classes started in footwear institutes on a single day short notice. Initially, most classes were started through 'Zoom' or 'Google Meet' apps. Various other platforms were developed like Microsoft Teams, Blackboard etc. New methods of teaching were introduced. A lot of challenges were faced by both teachers and students. It seemed difficult to put an eye on the students during lectures and demonstrations. Maintaining the concentration of students was also a big challenge. The situation is now improved. Teachers and students became familiar with the features of these online apps.
- There is the lurking fear of the third wave of COVID, as per the latest report of financial express dated 02.08.2021, India will control the situation of Covid-19 but with the fear of Coronavirus third wave among people, online education will be used in the forthcoming months. Several states have allowed schools to reopen with strict adherence to COVID protocols. Schools may be opened by the local administration but by that time every institute can run their classes online.

II. REVIEW OF LITERATURE

Several research papers were reviewed concerning online education: Few of them are summarized below:

- T. Muthuprasad, S. Aiswarya, K.S. Aditya and Girish K. Jha. (2021) proved their study useful for reimagining and redesigning higher education with components involving online mode.
- Dr. Chanchal Sachdeva Suri (2021) investigates challenges to online education in which the challenges are social, economic, technical and all are concerned only from student's point of view.
- Marwa Mohamed Zalat, Mona Sami Hamed and Sarah Abdelhalim Bolbol (2021) concluded that e-learning was underutilized in the past, especially in developing countries. However, the current crisis of the COVID-19 pandemic enforced the entire world to rely on it for education. As per their study, the majority of participants strongly agreed with e-learning is very useful and easy to use, they also identified that the highest challenge for accepting e-learning were unstable internet connectivity, insufficient computer labs, computers/ laptops, and technical issues.
- Shivangi Dhawan (2020) conducted a strength, weakness, opportunity and challenge (SWOC) analysis and find the scope for innovation and digital development in online education.
- Pravat Kumar Jena (2020) suggested that online learning is the most common method of distance learning today. During the Covid-19 pandemic time, online learning is the best platform to keep learners/educators engaged and safe by maintaining social distancing
- Girisha Lakshman Naik , Malteshkumar Deshpande , D C Shivananda , C P Ajey , G C Manjunath Patel (2020) defined that Covid-19 pandemic has severely affected the educational health of India. The government announced that online classes will be conducted by the institutions. The paradigm shift from traditional offline teaching methods to online teaching poses technical difficulties that affect the efficacy of the teaching and learning process.
- Dr E Venu Madhavi, S. Siva Venkata Ramana, Dr M. Srinivasa Sesha Sai (2020) concluded that Covid-19 has changed the entire world. Faculty should try to improve the involvement of the students in online classes. The desired results can be achieved through e-Learning.

- 8) Ama Jindal and B.P.S. Chahal (2018) concluded that online education can change the whole future scenario if it can be implemented in the collaboration with industry, universities and government. They further suggest the drastic change in course curriculum and education process.
- 9) Zahoor Ahmad (2017) concluded that Technology-led reach and easy access will bring about a socio-economic difference in the lives of Indian learners.
- 10) Khan (1997) defined online learning as the delivery of instruction to a remote audience using the web as an intermediary.
- 11) Manu Sood and Virender Singh (2014), concluded that the advancements in the internet and organizational structures have made a great impact on the ways the knowledge is transferred and it is perceived.

A. Gap in Research

Various papers related to the topic were studied. It is found that none of the existing research is user-centric towards the students that how better can they understand in online education.

There is no research done in cultivating innovations and opportunities in online footwear education. It seems a lot of scope in the research of online and hybrid pedagogies as the literature review shows that the study related specifically to the target group i.e. students of footwear institutes has not been explored or carried out.

Further, the proposed research is aimed at the development of new pedagogies. This will largely help in developing interest among students.

III. THE OBJECTIVE OF RESEARCH:

The proposed objectives of the research are as follows:

- 1) To study challenges of online footwear education.
- 2) To study hybrid pedagogies in online footwear education
- 3) To cultivate the opportunities in online classes to make the delivery interesting.

IV. WORKING HYPOTHESIS

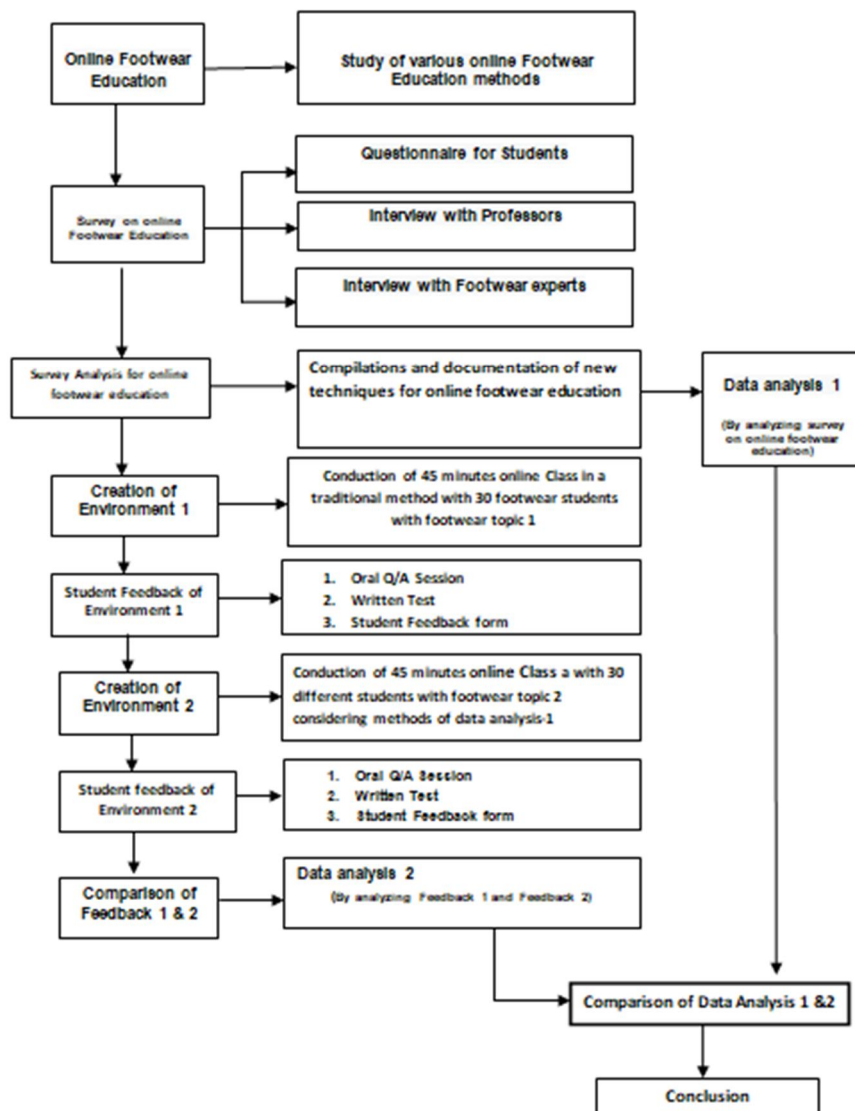
Online education is adversely affected due to the lack of innovative methods of footwear technology subjects. The students understanding power can be judged by student feedback about the class, online test results and question-answer session performance.

V. RESEARCH METHODOLOGY

It contains the following parameters:

- 1) Research Type: Applied research. It is done to find out the specific answer which has a direct application to society and helps to solve the problem that impacts the health and well-being of the society. Here society refers to the students studying footwear courses.
- 2) Participants: Urban, semi-urban and rural students
- 3) Batch size of students: 30
- 4) Class duration: 1:00 Hour
- 5) Independent variables: Innovative methods of online education
- 6) Dependent variables: Student feedback, online test result, question-answer session performance of students
- 7) Sampling method: Random sampling method, in which students are randomly selected to form the batch of 30.
- 8) Sample size for Survey:
 - a) The online questionnaire for students: 500
 - b) Interview with professors of footwear and fashion: 50
 - c) Interview with footwear experts: 50
- 9) Sample Size for Experiment: 30

VI. RESEARCH DESIGN



VII. ONLINE SURVEY

The survey was conducted to understand the requirement of students during online classes. It was also done to find the gap between teacher delivery and student understanding.

The survey was conducted in the following three modes:

- 1) The online questionnaire for students
- 2) Interview with professors of footwear and fashion
- 3) Interview with footwear experts

A. Online Questionnaire for Students

- 1) E-mail id:
- 2) Name:
- 3) City:
- 4) Area:
 - (a) Urban
 - (b) Semi-urban
 - (c) Rural



- 5) Gender:
(a) Male (b) Female (c) Other....

- 6) Age group (years):
(a) 16-18 (b) 18-20 (c) 20-22 (d) 22-25 (e) 25-30 (f) > 30

- 7) The device you prefer for online footwear classes:
(a) Laptop (b) Desktop (c) Smartphone (d) Tablet (e) Other.....

- 8) An online app you like most for online classes:
(a) Zoom (b) Google Meet (c) Other.....

- 9) Mediums through which online classes can be made effective:
(a) PPT presentations (b) Smart boards (c) Live demonstrations
(d) Videos (e) Other.....

- 10) Problems you face during online classes:
(a) Internet connectivity (b) Background distraction (c) Regular power cut off
(d) Less visibility due to the size of a smartphone (e) Other.....

- 11) Teaching pace you prefer during footwear classes, for better understanding:
(a) Fast pace (b) Medium pace (c) Slow pace

- 12) Do you think an appropriate voice modulation is important during online classes?
(a) Yes (b) No (c) Not sure

- 13) What do you think about any module conducted through the combination of online and offline footwear classes?
(a) Very effective (b) Effective (c) Ineffective (d) Not sure

- 14) Duration would you like to suggest for online classes:
(a) <45 minutes (b) 45-60 minutes (c) 1 hour (d) 1-1.5 hour (e) >1.5 hour

- 15) Break would you like to suggest between two successive online classes:
(a) <5 minutes (b) 5-10 minutes (c) 10-15 minutes (d) > 15 minutes

- 16) Total time per day, you would like to attend online classes:
(a) 2-4 Hours (b) 4-6 Hours (c) > 6 Hours

- 17) Do you prefer to take the recording of online classes:
(a) Yes (b) No (c) May be

- 18) Reading material you prefer for online studies:
(a) Notes (b) Videos (c) Other.....

- 19) Exam pattern you prefer for online studies:
(a) MCQ (b) Descriptive (c) MCQ and descriptive mix
(d) Oral (e) Other...

- 20) Types of online classes you find easy to understand:
(a) Theory (b) Practical (c) Design-oriented
(d) Management (e) Other...

- 21) Types of online classes you find difficult to understand:
(a) Theory (b) Practical (c) Design-oriented
(d) Management (e) Other...

22) How do you see online classes as a source of education in the Covid-19 pandemic time?

- (a) Effective (b) Needs Improvement

23) Give at least two innovative ideas to make the online classes effective and interesting:

.....
It was made in Google forms and shared through messages, what's app and e-mails. It was distributed to 500 students who belong to urban, semi-urban and rural areas across pan India. These students are studying in various renowned footwear institutions of India.

A. Collection of Data

Total 414 student's questionnaire response was collected and analyzed. Following is the summary of response:

60% male and 40 % females were approached for a survey. The age group of responded students was 18% of 16-18 years, 26% was 18-20 years, 17% of 20-20 years, 21% of 20-22 and 16% of 22-25 years and 2% of 25-30. Nearly all of the student's education is very much affected in COVID-19. 23% of students were using a Laptop, 7.5% using a desktop, 68% using Smartphone and only 1.5% are using Tablet. 30% of students considered online classes as an effective source of education, while 70% of students are in the favour of improvement. 42% of students liked the Google Meet app, while 55% of students liked the Zoom app while 3% of students liked other apps for online classes. 81% of students were facing internet connectivity problems. The majority of the respondents are students from rural areas, facing badly with fast internet access, interrupted power supply followed by limited internet data access. 5% were facing background distraction problems, while 11% were facing less visibility due to the size of a smartphone. 4% of students preferred fast teaching pace, 33% preferred medium and 63% students preferred slow pace during the online classes. 89% of students think appropriate use of voice modulation is important during online footwear classes while 9% do not agree with the same & 2% of students are not sure. 74% of students think about any module conducted through the combination of online and offline mode becomes very effective. 92% suggested going with a 1-hour duration for online classes while 8% of students were interested in less than 45 minutes. The majority is interested to provide a break of at least 10-15 minutes between two successive online classes. 70% of students prefer to get Reading Material through Notes. 20% of students are interested in videos. 84% of students prefer to MCQ and descriptive mix Exam pattern, 11% of students prefers Oral option while 3% of students have shown their interest in only descriptive. 26% of students prefer to study online classes with PowerPoint presentations, 21% of students are interested in smartboard and 53% of students are interested in live demonstrations. Various innovative ideas are generated during the survey.

The collection of data is a representation of the existing scenario of online teaching in footwear and institutions.

B. Interview with Professors

A structured interview was done with various teaching veterans. The interviewees were renowned persons in various teaching institutions like FDDI, NIFT, AMU, GLI, etc. As per their views,

The student feels a lack of concentration if teaching is not done innovatively. This causes fatigue and their mind become inactive and does not respond quickly. They felt worried by saying that currently, online mode is the only way to provide education to the students. If it will not be effective, it can hamper the whole education system.

They further advised that during the class, there is a need of obtaining curiosity among the students. This can be done by interactively taking classes, using any industrial experience-based stories, relevant short videos, using smart boards, live demonstrations, etc.

As per their experience, good internet connectivity can increase the concentration of students during their online classes. The teacher can also concentrate during teaching and can take smooth classes with good internet connectivity from their side.

B. Interview with Footwear experts

Various footwear experts were consulted about the problem. Almost all of them suggested that online classes should contain the clippings of various departments of the footwear factory. Footwear experts further briefed that online footwear education should not be only theoretical like other subjects. They assume that practical classes should have good enough credit hours. In contradiction, it is observed that during last 1.5 years, mostly footwear online classes were based on theory due to COVID-19. Lack of practical knowledge gave huge loss to footwear students, although theory classes were conducted up to a satisfactory level. Now it is expected that each footwear institute should go for proper set up to conduct online footwear practical classes too, where teachers can conduct an effective online practical class by using required teaching aids.

They were worried that due to the poor speed of the internet, classes effected very badly during lockdown time as there is a need for clear pictures and voice during online classes for a good understanding of the topic. Government should ensure high-speed internet connection and provide free-of-cost high-speed internet to students below the poverty line. The government might be working but this should be done on a war footing basis.

The footwear Industry requires students with sound theoretical and practical knowledge in their field. They should have the ability to solve the problem in quick time mainly during bottleneck problems during production. The student should know the practical technical problems faced by the production team. To develop this quality among students, the teacher should add industrial-based case studies in their online classes and these case studies can be discussed with students on one to one basis.

They suggest that institutions should tie-up with the industry in which one-hour session per week may be conducted. The industry expert should brief about the factory, machines parts & functions, manufacturing process, quality checkpoints etc. through live video streaming. Production problems can also be discussed with students and ask them to find out their solution within a specific time. An award of the token can be given to students who give proper solutions.

VIII. DATA ANALYSIS OF SURVEY RESULTS

The data is collected from various survey modes as discussed above. It is analyzed that various innovative ideas are required to be implemented and checked in actuality. Following are the new suggestions to implement:

- 1) Students should attend online classes preferably on Laptops or desktops. This will give more visibility while viewing presentations. Smartphones sometimes cause distraction due to incoming calls during class.
- 2) A quick recap of the previous class will connect the students with the topic in quick time and grasp the technical contents quickly.
- 3) Short-duration prerecorded video of a shoe factory may be shown to the students before the start of any footwear class-related topic. The faculty should explain it afterward.
- 4) The class can be made more interesting if a teacher can create a story before explaining the exact topic. Real-life shoe factory experience or any case study related to the shoe industry can be also used here.
- 5) The smart use of smart boards and PowerPoint presentations can also create more interest among students. Footwear topics can be taken more effectively and the student will join class willingly.
- 6) Appropriate use of voice modulation is very important for any faculty during online classes. Soft voice during any online footwear class by the teacher may increase student's concentration on the topic.
- 7) The teacher should try to take online classes with eye to eye contact with students. They can start their laptop camera and ask students to switch on their cameras. When a teacher will focus on the camera then students will feel like an offline class where eye-to-eye contact is easy. The teacher should try to run the class interactively even camera is off. Also, motivate the students to be interactive in the class.
- 8) The demonstrator should also assist a teacher while taking online classes. A demonstration can be done by a demonstrator on-screen during a live session of footwear practical class and technical explanation should be done by a teacher. This teamwork can help a lot to understand the practical topic.
- 9) The teacher should focus on all 3 types of students present in the class i.e. smart, average & below average. Later two generally face difficulty to understand the topic. The teacher is required to give special effort and focus to them. Automatically the whole class will reach a good level. Slow pace during online classes maybe help a lot to below-average students.
- 10) Case studies related to designing, cutting, closing, lasting, finishing, sampling, costing, merchandising, etc. should be added.
- 11) There should be an adequate break between two consecutive online classes. It may help a lot to minimize any health issues to footwear students like poor eye vision, mental stress, lack of concentration etc.
- 12) If revision of the module is required, then it should be done.
- 13) After completion of any topic, a teacher should announce to ask any doubt from till covered topic and clarify them. Production experts from any shoe industry may also be associated with additional inputs.
- 14) The closure should be followed by an online test or quiz by selecting teams.
- 15) The teacher may give the specific topic and ask students to search for some content on the topic and during the next day, this can be discussed with the students.
- 16) As a token of motivation, the "Student of the class" title should be awarded weekly.
- 17) Webinar or online workshops, related to the syllabus, should be organized regularly by a renowned industry expert.

- 18) The teacher cannot compel any student to join an online class by pressure. The teacher should understand that it is not a normal routine class. They are advised to listen to the student's problem during online classes too.
- 19) During the session, it was found that many students were suffering from COVID. They were isolated. Many came out after recovery and are still in quarantine. Many students lost their parents, elders, near and dear ones. Even some students are under stress and depression as their parents are unable to give their education loan installment. The teacher should act as a mentor, communicate with such students and encourage them. This will give big moral support to the student.

IX. ENVIRONMENT 1

Here the usual online footwear class was taken by the faculty by Zoom app with a group of 30 students with the topic- 'Classification of Cutting Dies'. A powerPoint Presentation slide was displayed.

A. Feedback 1

After completing the lecture, students were asked to clear their doubts if any. Only 2 students asked some doubts. The teacher conducted the following tests to check the clarity of the topic among the students.

- 1) *Oral Question-Answer Session:* Students were allowed to switch on their microphones and ask topic-related questions. The teacher concluded the response and divides the students as per their performance in the question-answer session. He marked 60% of students as excellent, 15% as good, 15% average and 10% as ineffective.

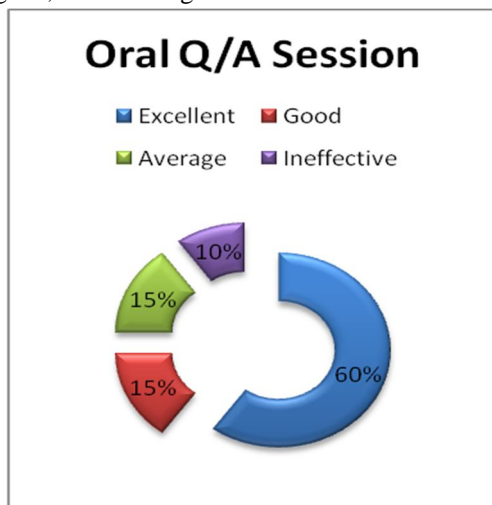


Figure 1: Pie chart showing student's performance in oral Q/A Session

- 2) *Online Test:* Thereafter, the online test was conducted through google form with 10 multiple-choice questions. Based on the test performance, the students are categorized as follows:



Figure 2: Pie chart showing student's performance in online test

3) *Student Feedback (Environment1)*: After the class and tests, students were asked to give the rank to the overall delivery of the topic as excellent, good, average and ineffective. Following is the response:

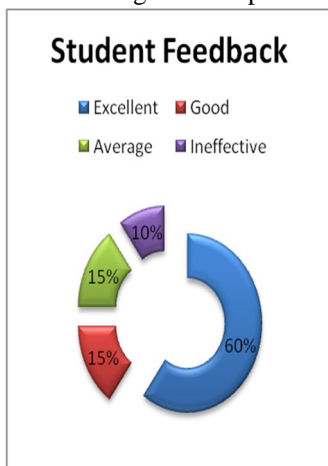


Figure 3: Pie chart showing student feedback for overall delivery of the topic

X. ENVIRONMENT 2

The teacher implemented all the suggestions discussed in section 9. Online footwear class was taken by the teacher and demonstrator together through Zoom app with the group of 30 same students with the topic- ‘Machine Cutting in Leather Footwear Industry’ with following timings:

- 1) Before the start of the session, the teacher has shown a small video in which the leather cutting process is shown by the clickers in a leather shoe factory.
- 2) The teacher started the topic and narrates a real story related to machine cutting in the leather shoe industry.
- 3) The teacher presented the topic through a PowerPoint Presentation slide
- 4) The teacher explains the machine parts and functions while the demonstrator was performing the cutting operation in the machine. The teacher was explaining the safety precautions and the demonstrator was doing the same at the workplace.
- 5) The teacher connects the video call to the cutting in-charge, working in the factory. The expert gave his views about machine cutting.

A. Feedback 2

After completion of the lecture, students were asked to clear their doubts if any. A footwear expert was also present to clear doubts. 10 students asked their doubts. The teacher conducted the following tests to check the clarity of the topic among the students.

- 1) *Oral Question-answer Session*: Students were allowed to switch on their microphones and ask topic-related questions. The teacher concluded the response and divides the students as per their performance in the question-answer session. He marked 80% of students as excellent, 10% as good, 5 % average and 5 % as ineffective.

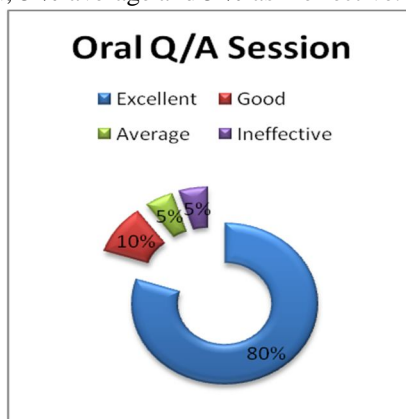


Figure 4: Pie chart showing student’s performance in oral Q/A Session

2) *Online Test*: It was conducted through Google form with 10 multiple-choice questions. Based on the test performance, the students are categorized as follows:

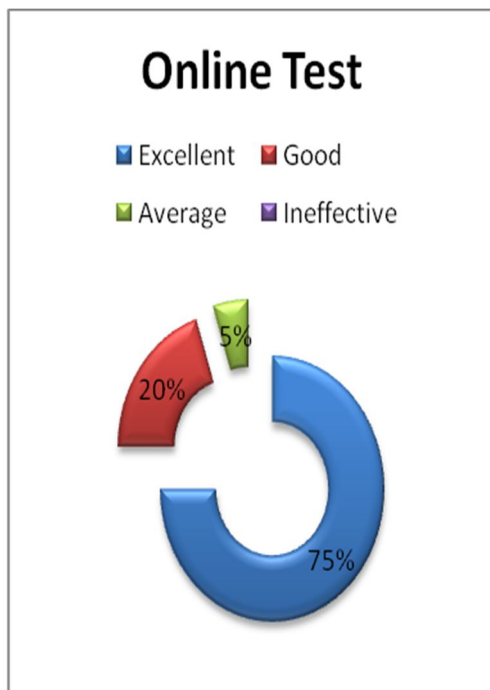


Figure 5: Pie chart showing student’s performance in online test

3) *Student Feedback (Environment2)*: After the class and tests, students were asked to give the rank to the overall delivery of the topic as excellent, good, average and ineffective. Following is the response:

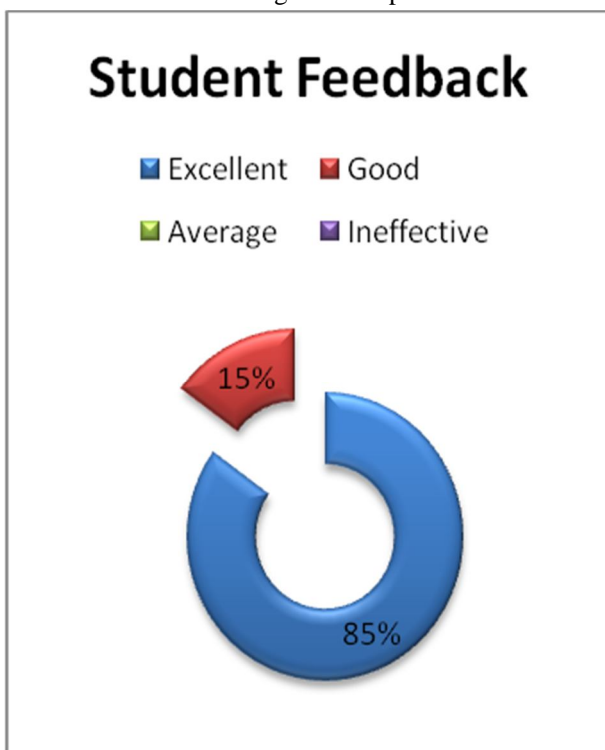
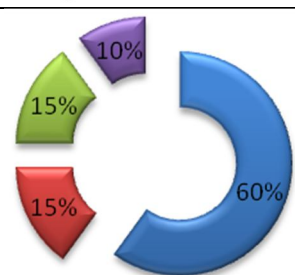
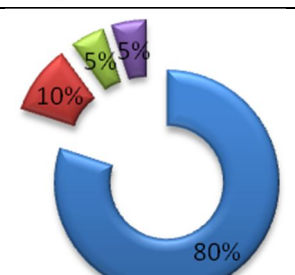
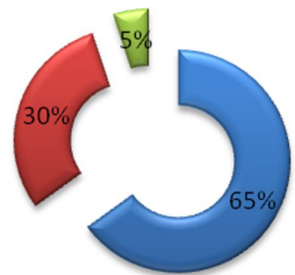
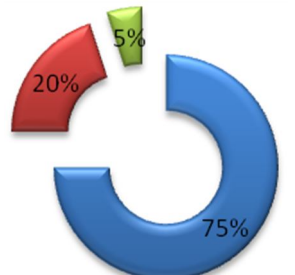
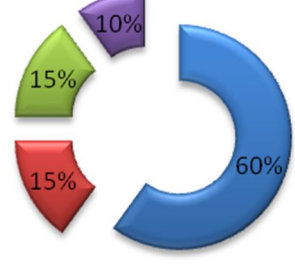
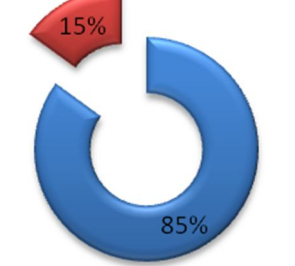


Figure 6: Pie chart showing student feedback for overall delivery of the topic

XI. DATA ANALYSIS AND COMPARISON OF FEEDBACK 1 & 2

S. No.	Parameters	Feedback 1 Result for Environment 1 ■ Excellent ■ Good ■ Average ■ Ineffective	Feedback 2 Result for Environment 2 ■ Excellent ■ Good ■ Average ■ Ineffective
1	Oral question-answer session		
2	Online Test		
3	Student Feedback ()		

It is clear from the pie chart representation that Feedback 2 is more effective.

XII. HYPOTHESIS TESTING

It seems that as mentioned during the working hypothesis, students understanding power can be judged by student feedback about the class, online test results and question-answer session performance. Innovative ideas can increase the grasping power of students.

XIII. CONCLUSION

Footwear courses running in India by various institutions mentioned in this research article contain practical subjects related to design, merchandise and production. The Covid-19 pandemic has affected and changed the teaching pedagogy of Footwear Institutions. It is concluded that online classes pedagogy on Footwear Technology can be made effective by the introduction and implementation of more and more innovative ideas. As per research, it is clear that good background and environment should be created for the online class, so that students can stay comfortable during the entire session. Footwear institutions should understand the requirement of students during online classes and can prepare themselves more strongly by adopting hybrid pedagogies in the education of footwear. It may include a good online app, use of smartboard, innovative method of teaching, interaction with class students during classes etc. The essence of the footwear industry should always be added to the recipe of Footwear Pedagogy. If footwear professors want to make their class effective and interesting, then new innovative ideas as suggested in this research may be adopted. COVID-19 pandemic has created not only challenges for the teachers and students but also compelled them to adopt new pedagogies. The article is concluded with the facts that create interest in students in online classes.

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AUTHOR'S PROFILE

Varun Gupta



Varun Gupta acquired his MBA in Footwear Designing & Production Management and MSc. in Computer Science. He has twenty years of experience in working with renowned Footwear organizations such as TATA International- Dewas, Sagari Leathers- Agra and KIWI Enterprises- Gurugram. After serving in Footwear Industry for six years, he diversified his services towards academics, training and consultancy. Currently, he is working as Jr. Consultant and Center In-charge in Footwear Design & Development Institute (FDDI), Amethi. He worked as an International Consultant in South Africa under the South African Footwear and Leatherwear National Cluster Project through Vaal University of Technology (VUT) & Dept. of Trade & Industry (DTI), South Africa. He also gave International Consultancy in Gabrone, Botswana for skill up-gradation training program to the clients and staff of Leather Industry Incubator of Local Enterprise Authority (LEA), Botswana. He has authored 2 books for FDDI. He has research experience with the publication of 2 research papers in international journals, 1 in a national journal and 4 chapters in a book by a national publisher. With the best oral presentation award, he presented 8 research papers as oral and 1 as a poster presentation at various conferences. His 6 articles are published in several magazines. He can be reached at varunfddi@gmail.com.



Vishal



Vishal has done his Higher Diploma in Footwear Technology from FDDI Noida in 2002. He has more than nineteen years of work experience in which about 10 years of footwear industry and 9 years in academics. He has worked in buying a house as Sourcing Manager in Ascot Sports Pvt. Ltd, Gurgaon. He has worked as Planning Manager in Tej International Pvt. Ltd, Agra and Oscar Leathers Pvt. Ltd Mohali too. After working in the footwear industry for ten years, he diversified his services towards academics and training. Currently, he is working as Sr. Faculty in Footwear Design & Development Institute (FDDI), Noida. Here he has been taking classes for B.Des. and M.Des. (Footwear Design & Production). As a part of academic responsibilities he has been contributed to the preparation of INI Syllabus for PG & UG programs, study materials containing shoe industrial contents, revision of Handouts, preparation of E-book on 'Full Shoe Costing' etc. He has been a Course Director of various batches for the last decade. He is an active member of the Sport Shoe Development Committee, Chairman of the Cultural Committee in FDDI. He has given domestic consultancy in Thomas Bata Footwear Training School, Bata Nagar Kolkata in 'Product Costing' and 'Material Purchasing and Vendor Management in leather shoe industry'. His consultancy on cutting techniques at the Henkel-FDDI workshop was highly appreciated. He can be reached at yk162224@gmail.com.



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