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On and off campus learning strategies in higher education sector: An exploratory study in selected districts of Punjab

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Abstract

An era post-COVID-19 has observed a paradigm shift in modes of teaching and learning practices. Transcending from the 'chalk and talk' method to the more advanced 'digital learning' system has significantly impacted the evolution of education in catering to the needs of Gen Y. The purpose of this paper was to study the on and off campus learning strategies in higher education sector in selected districts of Punjab state. For this study, both primary and secondary research was carried out among students in the higher education sector of selected districts of Punjab. The objective of the study was: First, to evaluate various pedagogical approaches for effective on and off campus learning, and second, to analyse the pros and cons encountered by students in this modus operandi devised for teaching and learning process. For the study both primary and secondary research was conducted. The overall objective of this research was to enable an understanding of how a temporary reform like online learning in coping with the COVID-19 situation became a continuing and constant strategy in the education industry providing quality education to its learners while keeping in view the National Education Policy 2020 (NEP) and Sustainable Development Goals 2030 (SDG) in fostering inclusive and lifelong learning opportunities.

Keywords: On campus, off campus, NEP, SDG, higher education

1. Introduction

"Black colour is sentimental bad but,
Every black board makes the student life better."

- A.P.J. Abdul Kalam

The outburst of COVID-19 on Indian education system hampered the seamless teaching learning process among Higher Education Institutions limiting the tangible resources. Yet, India accepted the challenge and brought numerous reforms to face the situation and the transformation of providing education during the lockdown eventually turned out to be commendable. Education, the primary goal of education institutions, undoubtedly had a major effect from the shutdown, driving institutions to swiftly expand to internet-based applications and approaches. With regard to certain organizations, employing digital instruments was second nature; for those around them, it represented uncharted ground. It quickly grew into an ordinary manner of doing business for everyone. Undoubtedly, the pandemic affected beyond 32 crore student population during the pandemic hit yet there was a proportion of population who was vulnerable to technology, because as per MHRD report about 45 crore population had an access to technology and internet along with providing e-learning resources to the internet users to acquire education, learning and training in uninterrupted fashion (MHRD, 2020) ^[1]. While the pandemic affected student population adversely, it also brought reforms that could be inculcated in the traditional approaches, for suggestive reasons and, also to provide a single window solution by altering numerous pedagogical approaches to teaching and learning. It not only subjects the methods of teaching-learning to institutionalization but also internationalization to those who need it. Many researchers during the pandemic shutdown believed that the measures taken for continuous learning approaches will eventually benefit the learner population in future as

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well by providing more efficiency, accessibility and adaptability (Jena, 2020) [2]. The entire element of the globe has changed, assuming the privilege of medical systems, governance, economies, or our private affairs. Purchasing meals, financial services, settling the tax bill, obtaining fellowships, recreational activities, vacationing, obtaining knowledge, and dealing with it are all examples of daily activities. The prevalence of an unprecedented COVID-19 crisis must be viewed not merely as a task to be overcome, but also as a remarkable chance that has been provided to all the stakeholders of the society. The Gen Y to meet their employability demands, explore integrative opportunities through distance learning, bridge their skills with curriculum and what not. But, above all the conceptual framework, the novel tech-driven generation must be prepared to change not only their skillsets but also mindset (Balasubramaniam, 2021) [3]. The latter in terms of not just what information, knowledge and facts they are acquiring but also what are the different sources and forms of that knowledge to enable a hybridized system of learning. That is how the situation prepared the generation beyond the classroom but one cannot simply deny the ulterior motive here and that is, the classrooms make, break and shape the personality of our budding artists, entertainers, doctors, engineers, architects, lawyers, pharmacists, agriculturists, politicians, and other professionals et cetera that is unmatched.

University Grants Commission (UGC) is currently working on the objective of Internationalization of Higher Education which means through, international perspectives and connections gained via the internationalization of higher education serve an important part in moulding forthcoming descendants of scholars. The National Education Policy 2020 aims to achieve the greatest international standards in

higher education quality. In accordance with the NEP-2020, coordinated nationwide initiatives and an intertwined connection between the government's initiatives and the methods of Higher Education Institutions will transform the next generation of learners into truly international residents having profound pleasure in becoming Indian (UGC, 2021) [4]. This mission of UGC in helping student mobility via which is seen that the number of Indian students studying abroad was observed to be 10 lakhs, but that of foreign students studying in India was about 48000 only. This disparity calls for the reforms which would exponentially cross over the hurdles that may be imposed on the students globally. Hence, NEP 2020 for a sustainable growth of higher education sector in India is significantly focusing at on campus support to foreign students for their inclusiveness, success in academic front and active participation. Such initiative will also benefit them to interact with the socio-cultural groups, different languages, exposure to industries with competitive environment simultaneously with institutional learning. The strength of this initiative along with quality assurance lies in the digital revolution that India has paved for both domestic and international students through generation of massive e-courses, e-content, web-based curriculum, ed-tech startup et cetera that would help the entire industry composed of administrators, teachers, staff, students, and learners to foster hybrid mode of education despite exercising the traditional method to single out only on campus learning while off campus learning strategies can equally benefit the society of learners. The following table provides a comprehensive illustration on how students can benefit from both on and off campus learning while both modes of learnings posing their respective advantages.

Table 1: Advantages of both on and off campus learning [5]

| S. No. | On Campus Learning | Off Campus Learning |
|--------|---|--|
| 1. | Encourage global skills, competencies and abilities in Indian teachers and students while being in same location | Students can work and study at same time, or even so, learn distantly via distance education without being obliged to regularly visit campus |
| 2. | Students will learn to adopt a formal shared & concerted interaction with authorities | Cater global preparedness as it will assist the learners to multi-task, inhabit multi-dimensional skills and qualify hands-on experience |
| 3. | Technical subjects like science, engineering, architecture, pharmacy is duly functional when theory is combined with experimentation in high-tech labs. | Conducting workshops, FDP, SDP (Faculty/Student Development Programme), seminars, lectures in virtual mode encourages participation around the globe. |
| 4. | Systematic supervision and monitoring in recording success and failure graph of individual students | Learners need not visit campus on regular basis, no commuting, transportation yet acquire world-class learning from anywhere. |
| 5. | Round-the-clock assistance to foreign students, non-native speakers of the country's language, differently abled students, first-generation college students. | Offers an add on advantage of lesser tuition fee as compared to full time on campus enrolment. |
| 6. | Allocating mentors, supervisors or even counsellors to students in physical environment to have face-to-face sessions for their overall well-being | Dispenses flexibility in terms of preparing work schedule or study schedule as per the need and requirement of the learner. As it may encounter lesser hours/week than the traditional system of education |
| 7. | Choice Based Credit System (CBCS) administer skill courses like open electives to foster multi-disciplinary subjects, bridge courses etc. summing transferable credits for students. | Accommodate far off students in its planner that offers the learners with an opportunity to study in college or university with this facility of their choice which otherwise could be intractable. |
| 8. | Inevitable participation in co-curricular functions like literary, cultural, concerts, fine arts, wellness events providing platform to everyone in planning, organizing, staffing, directing, coordinating and controlling all elements related like finance, sponsorships, transportation, documentation, recording events et cetera. | Learners can transition between campus learning and hands-on experience with industries in collaboration, go for internships in multiple modules, study for home while work. |
| 9. | Celebrate national and international recognized days for community engagement and cross-culture awareness among teachers and students. | Access to remote population, Countries-wide classroom purpose can be solved while providing education to anyone from anywhere through ICT-enables infrastructure and Government aids of open education resources like SWAYAM, MOOCs etc. |
| 10. | Campus life and learning forges souvenir, capturing live moments | Contemporary issues can be dealt with like hybrid learning. |

| | | |
|-----|--|--|
| | with teachers and peers, remembrance via emotional connect, graduation ceremonies, award giving functions to boost morale of all stakeholders involved. | innovative pedagogy included artificial intelligence, human centred systems, social justice, gratitude-based pedagogy etc. It will be skill based yet affordable, and prepare educator, learner and administration for unforeseen environmental and societal events. |
| 11. | Control measures can be strictly adhered to at times of examinations both in house and competitive exams, conference papers, workshop assessments, internship and project reports, practical evaluations, FDP, SDP et cetera. | Level of organizational agility that is distance learning, off campus learning, remote learning, e-learning binging all under one roof by making technologies accessible and available overcoming income, language and social status barriers. |
| 12. | Offering academic (library, reading rooms, laboratories, internet centre, smart classrooms, conference rooms) and non-academic support facilities (sports ground, theatre, gym, cafeteria, prayer room, medical room, financial assistance, counselling, accommodation like hostel, recreational rooms for playing indoor games etc., in-campus retailers) | Spend less hours on curriculum, expand creativity and comprehended mode for practical applicability like in western or developed countries. |
| 13. | Enables a structured roster for both teaching fraternity and learner's further facilitating in-person interaction with teachers and peers. | Enable enhanced network opportunities wherein learners can seek freelancing or part time jobs; study and work at same time. |
| 14. | Even so brick and mortar technique, it offers a sense of belongingness being in the holistic environment. | Student engagement programs wherein learners can learn technical skills in unutilized hours like blogging, coding, social media marketing, influencers trend et cetera. |

Source: https://www.education.gov.in/sites/upload_files/mhrd/files/upload_document/int_he.pdf

From classroom to zoom, physical to virtual and seminars to webinars (Mishra *et al.*, 2020) ^[6], a pedagogical transition like online learning has taken place.

Table 2: Disadvantages of both on and off campus learning

| S. No. | On Campus Learning | Off Campus Learning |
|--------|--|--|
| 1. | There is a rigidity in its framework with rigid time- table, schedule, conventional examination system and curriculum which fails to imbibe the Gen Y needs and meet market expectation | Challenges posed by weak IT infrastructure due to which the digital equity gap is persisting among users |
| 2. | Comparatively, this method is expensive and not affordable among all classes of society leaving with social disparities in the system. | Cyber-attacks are prevalent that were evident during online classes because of intrusion of outsiders in an online session |
| 3. | Learners who occupy university or college residence frequently feel homesick or culturally shaken | Constant social isolation and no face-to-face interaction may some time lead to lack of confidence, agitation due to delays in deliverance of assignments, more queries and less efficiency |
| 4. | Most of the time is consumed in commuting for far-off inhabitants and travellers making their life monotonous and less interested | Regular off campus learning may impact practical, experimental and field assignments specially in field of engineering, pharmacy et cetera |
| 5. | During unforeseen events like strikes, shutting down, delays in travel time due to transportation havoc at peak times making university location inaccessible. | While universities and colleges spend hefty amounts to provide student-centric ambience, students may fail to access the facilities like cafeteria, labs, hostels, retail shops, library, medical facilities etc. |
| 6. | Restrictive environment because even if teaching is student centric but the schedule, curriculum, planner is devised and run by administration and educators only | 24X7, round the clock robust internet connectivity is required with an upgraded device like computer, laptop or smartphone to be reachable and connected to curriculum. |
| 7. | Compulsion based buying of learning material like books, audios, videos, paid subscriptions, access to e-content also, uniform, and other aids. | Low Participation rate, negligible to no holistic development of learner because of lack of involvement in sports, literary clubs, cultural fests et cetera. |
| 8. | The rigidity of enrolment process like general seats, reserved seats and international students can be challenging leading to disparities and rejections. It will limit "education for all" objective of esteemed universities and colleges | Self-motivation is the instant and key driver. That is if counselling or mentoring is required advanced session will have to be reserved because of unequal time frames of mentors and mentees. |
| 9. | Catering to fast-paced life, students will get stuck in the cobwebs of 9am-5pm university timings or 9am-3pm leaving with limited opportunities to avail in real-life to meet financial needs and interests. | From beginner to advanced courses if all the curriculum is shifted to off campus or online mode, it will become mandatory to either retain data and information on cloud or on the device which will again pose threat to its risk of losing or damage, heavy files, slower connections. |
| 10. | Sometimes strict rules and non-compliance may lead to bad behaviour production among agile students leading to incorporating bad habits from sharing common physical environment like skipping classes, unnecessary delays in assignment submission, intoxicating etc. | Loss of sense of belongingness due to least social interaction leading to dull brains, inactivity, health issues, mental blockages, lag in trending fields et cetera. |

Source: <https://er.educause.edu/articles/2021/4/reimagining-higher-education-the-post-covid-classroom>

1.2 Pedagogical approaches used by Higher Education Institutions in Punjab

In a relatively short period of time, a major shift in the education system occurred in which online education became the new normal; that is, until now, there are colleges, universities, institutions, as well as educational technology organizations that rely on online module-based teaching and learning in certain situations such as neglected

state holidays, factors related to the environment, state-strike shutting down public transportation and movement, and so on when organizations conduct online sessions. Global experimentation with distant and off-campus learning is being viewed as a firm contingent and alternative answer to organizations. One study highlighted numerous platforms utilized to speed the learning process through

technology that provides media for delivering lectures (Shree *et al.*, 2020) [7].

The most prevalent ones included higher education web pages, immediate messaging platforms (WhatsApp, Telegram), conference calls techniques (Zoom, Skype, Google Hangouts, Google Meet), and learning applications (Google Classroom), as well as message boards and telephone interactions to maintain personalized contact with students. Furthermore, several tools (such as Cisco WebEx, GoToMeeting, Microsoft Teams, Monosnap, Loom, and OBS) have proven useful. As a result, researchers currently think that. The availability of information technology that allows for online instruction, off-campus study, or online education presents unprecedented opportunities for

international higher education reform (Morales *et al.*, 2021) [8].

Everyone is part of this digital age, and the phenomenon of learning online is not going away. A revolutionary change in higher education has happened following merely certain months of virtual interactions. This significantly set forth the equal need of adopting off campus learning including distance learning to be an object of curriculum designing by improvising the technology-related barriers like its infrastructure, stability and accessibility. It would be logical to accept both forms of learning: on and off campus, to stay ahead of global competitiveness as well as face any unforeseen emergency learning too.

| Pedagogical Tools /Relevance in Developing Graduate Attributes | Critical & Analytical Thinking | Writing Skills | Behavioral Skills | Problem Identification & Solutions | Communication Skills | Team Work |
|--|--------------------------------|----------------|-------------------|------------------------------------|----------------------|-----------|
| Case Studies | ✓ | — | — | ✓ | — | — |
| Research Activities | ✓ | ✓ | — | ✓ | — | ✓ |
| Role Plays | ✓ | — | ✓ | ✓ | ✓ | ✓ |
| Group Assignment | ✓ | ✓ | ✓ | ✓ | — | ✓ |
| Presentations | — | — | ✓ | ✓ | ✓ | ✓ |

Source: <https://www.cuchd.in/usb/business-management/teaching-and-learning.php>

Fig 1: Pedagogical tools and relevance in skill set development

2. Review of Literature

2.1. Off Campus Learning

Jirasak Sae-khow (2014) [9], researched "for establishing characteristics of an electronic learning comparative framework for higher educational institutions in Thailand." The research discovered seven markers, namely 1. institution and the company, 2. educational program and curriculum development, 3. IT, the internet, as well as assets 4. the teaching method 5. a student 6. teachers and aiding staff, and 7. The outcome of the evaluation and measurement might be utilized as a standard (benchmark) within the format of an online education norm approach by higher education institutions.

Gautam and Tiwari (2016) [10], discussed many elements of an online educational framework, as well as the advantages and disadvantages of an online education framework, in their study. Many brilliant concepts were rejected since they failed to accomplish what they claimed; similarly, an organized online education program may be poorly regarded since it failed to teach effectively. The researchers outlined many benefits for the instructor or organization as well as the learner and claimed that the downsides of online education instructors/organizations are ahead. With learners, expenditures, technological issues, social acceptability concerns, as well as drawbacks, including technical challenges, mobility problems, and a decline in social and artistic engagement. However, the researchers asserted that awareness and comprehension of the five main elements of a system for online learning, namely Audience, Programme Framework, Site Creation, Material Participation, and Usefulness, are essential.

Suhail and Mugisa (2008) [11], conducted an in-depth examination of several elements connected to the deployment of internet-based learning in higher education in both advanced and developing countries. It also conducted a contrast evaluation of the structures and concepts. The investigation proposed a phased transformation paradigm for online education deployment in higher education in Least Developing Countries. It also provided an entire structure that is adaptive in a bandwidth-constrained setting with the use of a hybrid educational method.

2.2. On campus learning

Addis (2009) [12], explored the commonalities and distinctions in the delivery of college-level technology in education programs for fundamental instructors in face to face as well as virtual formats. The overall population size was 46 learners, with 22 learners participating in internet-based instruction and 24 learners participating in classroom instruction. On the following test results, the face to face category beat the virtual group substantially.

Rachmah (2020) [13], conducted a study that concluded that students were in favour of classroom-based instruction rather than online education. The research subjected 16 English Foreign Language students from Ibnu Khaldun University to both a virtual and physical classroom. And examined typical student opinions of online versus offline lectures to determine the efficacy of online versus offline classes. The strategy used to analyse information from surveys utilizing subjective (Likert scale questions) and numerical (open-ended questions) methodologies to assess the general opinions of students. As a consequence, greater numbers of learners identified with in the classroom

lectures. Students were more interested in the session because of improved comprehension, collaboration with both the professor and students and enjoyment throughout the course of study.

3. Objectives

- To evaluate various pedagogical approaches for effective on and off campus learning.
- To analyse the pros and cons encountered by students in the modus operandi devised for teaching and learning process.

4. Methodology

4.1 Research Design

For this study, both exploratory and descriptive type of research is conducted.

The study attempts to explore the different types of pedagogical approaches used by Higher Education Institutions, especially post COVID, still catering to the needs of the students of Punjab.

The study is descriptive based on the responses gathered that strives at delineating the perspective of the respondents towards the pros and cons of on and off campus learning within the selected districts of Punjab.

4.2 Scope of Research

The research was carried out in the selected districts of Punjab: Mohali (Kurali / Kharar / SAS Nagar / Landran / Lalru), Ropar (Chamkaur Sahib / Anandpur Sahib / Ropar city), Amritsar (Beas), Fatehgarh Sahib (Khamanon). The districts were selected to study the objective of perspectives of students about on and off campus learning.

4.3 Need and Significance of Study

It is imperative to explain and comprehend the post COVID transition from on campus to off campus learning models and alternative approaches that the Higher Education Institutions have still adapted to. The various factors cater to the need of the study like:

1. Different approaches of pedagogical approaches used by Higher Education Institutions of Punjab.
2. The advantages and disadvantages of on campus learning.
3. The advantages and disadvantages of off campus learning.
4. To analyse the perspective of respondents who has gone through these two phases of learning process, that is, during and post COVID, including both on and off campus learning.
5. Suggesting various measures based on the study conducted.

The above-mentioned aspects will bring in considerable limelight on the Higher Education Institutions whether they are moving towards or against the direction of NEP 2020 and/or SDG policy of Higher Education.

4.4 Research Methodology

4.4.1 Target Population

Respondents (students, in this study) selected were from the Higher Education Institutions from the selected districts of Punjab in the age bracket of 18-25 years, simply because they have been a part of two phases of learning approaches, that is, during and post COVID period.

4.4.2 Sampling Technique

Purposive Convenience Sampling method of nonprobability sampling technique was used. Purposive, because the research focused on the selected districts of Punjab for the study of on and off campus learning in the Higher Education Institutions, and convenient because of the pre-selected type of respondents, geographical area, availability of respondents, time and resources.

4.4.3 Sample Size: The target size was expected to be 500, however, 766 responses were gathered through Google Form.

4.4.4 Sources of Data Collection

- a) **Primary Data:** The questionnaire was filled through Google form from the respondents. The students were either undergraduates or post-graduates catering to varied professional fields like Law, Pharmaceutical Sciences, Business Administration, Engineering, et cetera.
- b) **Secondary Data:** The second-hand data, facts and information was captured from the published reports of various Higher Education Institutions, Research Articles, e-Newspapers, Government of India websites, web portals of Institutions, Open resources/ Infilibnet like Shodhganga, Science Direct et cetera.

5. Data Analysis & Interpretation

The data was collected from undergraduate and post-graduate students through questionnaire method. The collected data was tabulated and its analysis and interpretation has been outlined in subsequent section of the study.

5.1 Data Analysis of Student Respondents: Questionnaire designed for students consisted of total 13 questions out of which 4 were correspondent to demographic profile, of which 2 were close-ended and 2 were open-ended.

[A] Profile of Student

5.1.1 Gender: The following Table 3 represents the frequency of respondents based on their gender.

Table 3: Gender-distribution

| Gender | Frequency | Percentage (%) |
|--------|-----------|----------------|
| Female | 255 | 33.3 |
| Male | 511 | 66.7 |

The above table 3 depicts that out of 766 responses, 255 were female respondents, that is 33.3%, and male respondents were 511, that made up to 66.7%. This implies that majority of respondents were found to be males.

5.1.2 Age Group: The following table represents age-wise distribution of the respondents

Table 4: Students - Age Group

| Age (in years) | Frequency | Percentage (%) |
|----------------|-----------|----------------|
| 16-19 | 327 | 42.7 |
| 20-25 | 432 | 56.4 |
| 26-30 | 6 | 0.8 |
| 31-34 | 0 | 0 |
| Above 35 | 1 | 0.1 |

Table 4 depicts that out of 766 respondents 432 that is, 56.4% pertain to age group '22-25' and 327 pertain to age group '16-19', that is, 42.7%. That means majority of respondents are in the age of "20-25" years.

5.2 Data Analysis

5.2.1 According to you is on campus learning more effective than off campus learning?

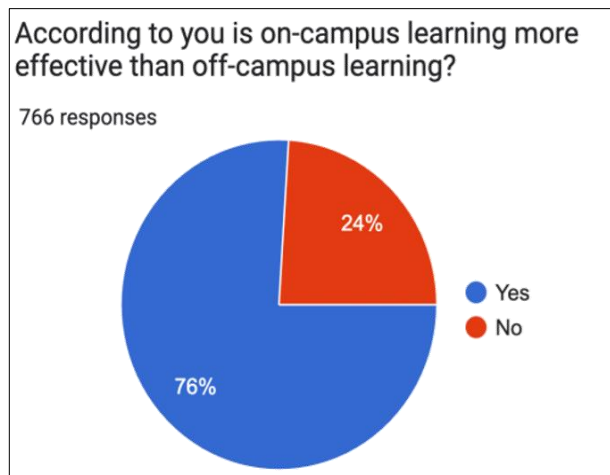


Fig 1: On campus over off campus learning efficiency

Figure 1 depicts the percentage of efficiency of on campus learning over the off campus learning. 582 respondents out of 766, that is, 76% were in favour of on campus learning and just 184 respondents, that is, 24% believed off campus learning is more efficient.

5.2.2 Which mode is better in terms of providing quality learning for better results?

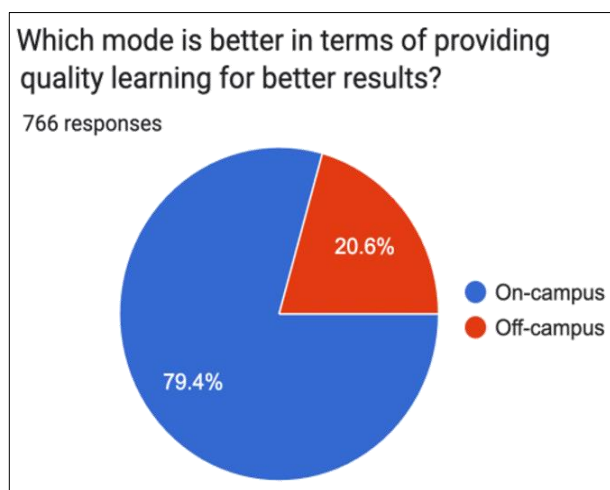


Fig 2: Better quality-oriented mode

Figure 2 depicts the percentage of better quality that is rendered by on campus and off campus learning. It demonstrates that out of 766 respondents, a frequency of 608, that means 79.4% believed on campus mode of learning to be better in providing quality rather than 158, that is, 20.6% who thought off campus learning is better in terms of providing quality. It means that the majority of respondents believed on campus learning as mode of conduct is above in providing better quality than the off campus learning.

5.2.3 Do you think there is less or no interaction in off campus learning?

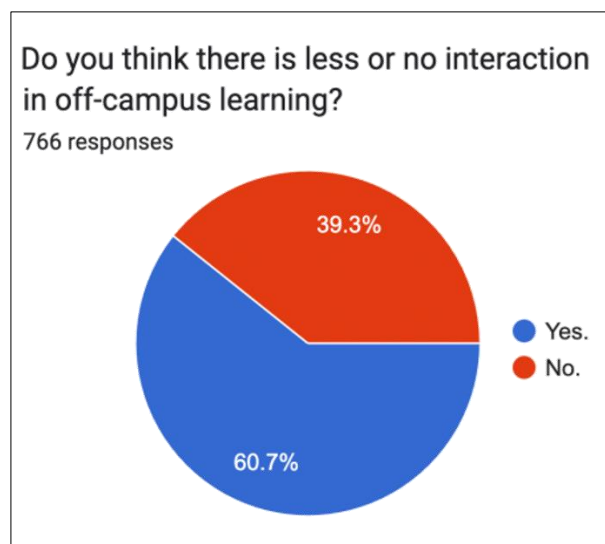


Fig 3: Little or no Interaction in off campus learning

The figure 3 represents that out of 766 respondents 465, that is, 60.7% believed there is either little or no proper interaction in the off campus learning mode, however, 301, that is, 39.3% believed there is a good interaction in off campus learning mode of conduct. This data suggested that about 39.3% respondents felt that off campus learning can be thought to be one mode of conduct while interaction is concerned.

5.2.4 Which mode do you think is appropriate for training and education?

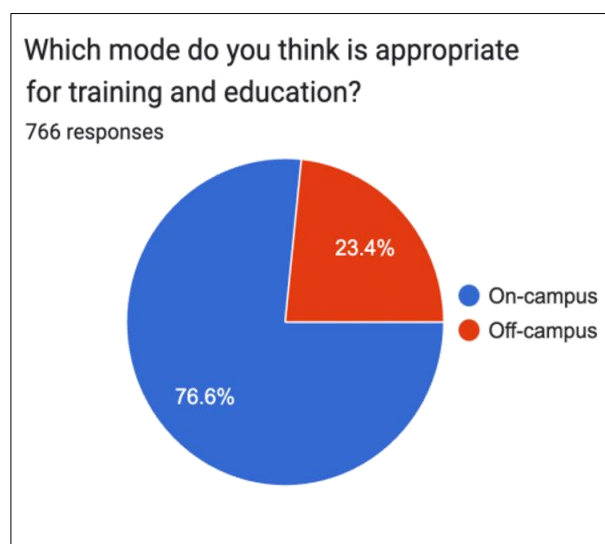


Fig 4: Better mode relevant for training and education

Figure 4 depicts the perspective of respondents to choose which mode is relevant in providing training and education. Out of 766 respondents, 587 that is, 76.6% felt that on campus learning is appropriate for training and education, rather than, 179 respondents, that is, 23.4% who believed off campus could be appropriate for training and education.

5.2.5 Is there misconduct like cheating / dishonesty / violation / copying during online exams in off campus mode?

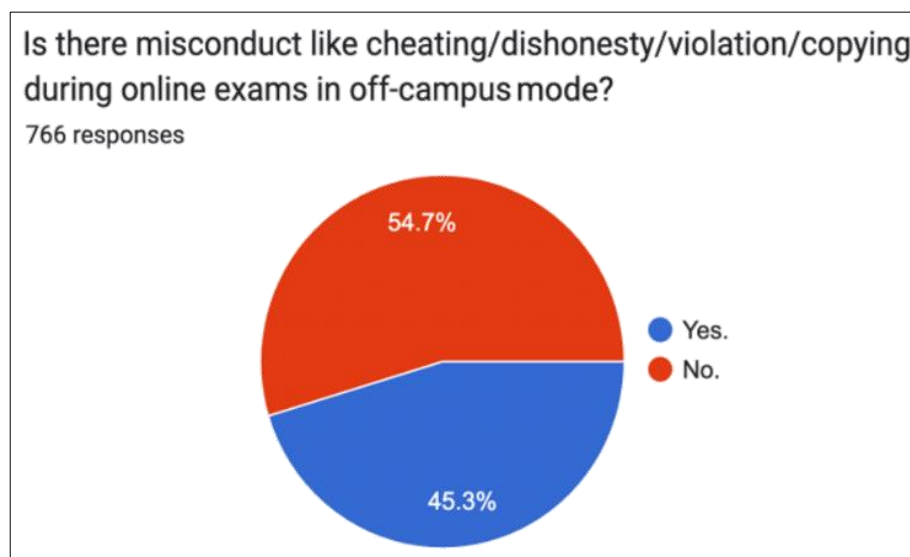


Fig 5: Views on Misconduct in online mode of exams

Figure 5 depicts the perspective of respondents who believed if there is any kind of cheating, misleading behavior, fraud or misconduct while examinations are conducted in online mode during off campus learning. It demonstrates, that out of 766 respondents, surprisingly, 347, that means, 45.3% only believed there is misconduct while 419, that is, 54.7% believed there is not such misconduct in the online exam mode.

5.2.6 Where do you think there is more distraction?

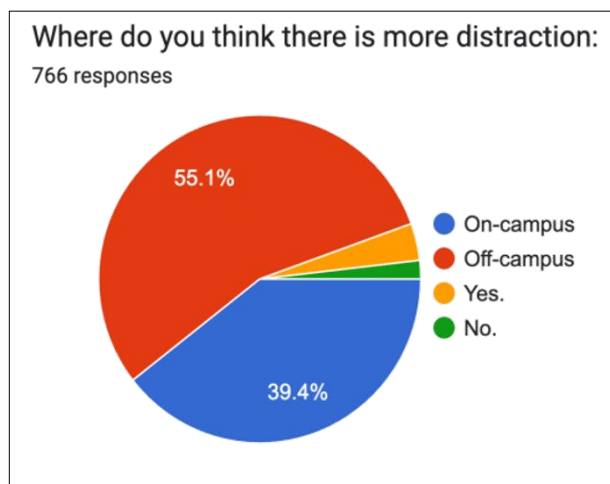


Fig 6: Higher level of distraction

Figure 6 depicts the representation of distraction levels which is more either in on or off campus. According to this chart, out of 766 respondents, 422, that is, 56.1% believed that there is more distraction in off campus learning mode, 302, that is, 39.4% believed that the distraction is more in on campus learning mode. While roughly 3.7% believed there

is some distraction in both and 1.8% denied any kind of distraction.

5.2.7 Which mode provides you more exposure?

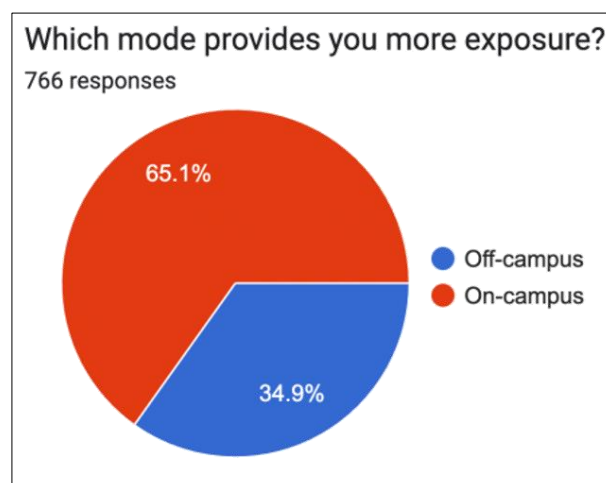


Fig 7: Exposure-oriented mode

Figure 7 represents which of the two modes provide more exposure to its learners. It illustrates that out of 766 respondents, 499, that is, 65.1% thought there is more exposure in the on-campus learning mode, while 267, that is, only 34.9% believed that there is exposure in off campus learning mode. That means majority of the respondents thought there is overall more exposure in the on campus learning mode.

5.2.8 Off Campus learning may lead to following consequences. How do you agree or disagree?

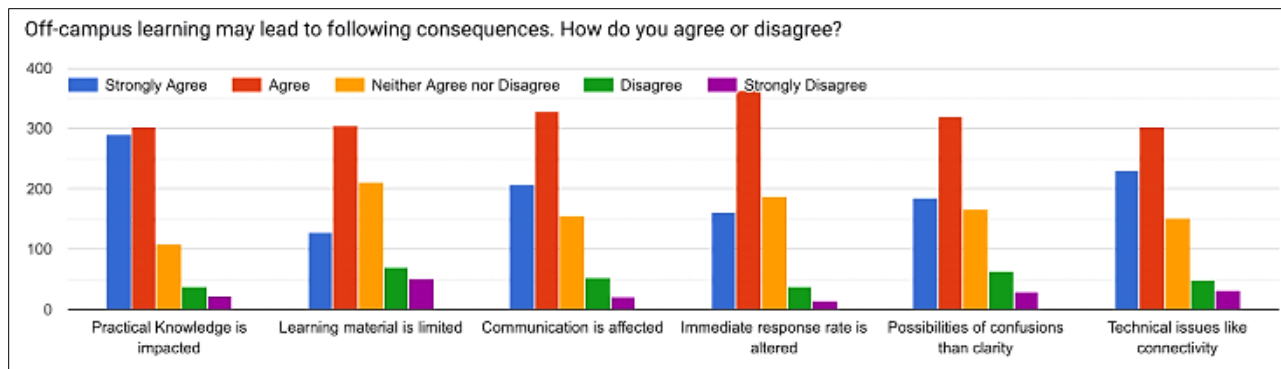


Fig 8: Off-campus learning may lead to following consequences. How do you agree or disagree?

- **Practical knowledge is impacted:** As per the bar graph showed, out of 766 respondents, 291 respondents strongly agreed that practical knowledge is affected, 304 agreed to the fact, 109 represented a neutral response to neither agree nor disagree while about 30 of them has disagreed to the statement.
- **Learning material is limited:** As per the bar graph presented, it reveals that out of 766 respondents 128 respondents strongly agreed that the learning material is limited in off campus learning, 305 agreed to the fact, 212 revealed a neutral response to neither agree nor disagree while about 121 of them has disagreed to the statement.
- **Communication is affected:** As per the bar graph furnished, out of 766 respondents 206 respondents strongly agreed that communication is affected in off campus learning, 329 agreed to the fact, 156 represented a neutral response to neither agree nor disagree while about 75 of them has disagreed to the statement.
- **Immediate response rate is altered:** As per the bar graph given, out of 766 respondents, 163 respondents strongly agreed that immediate response rate is affected in off campus learning, 362 agreed to the fact, 187 represented a neutral response to neither agree nor disagree while about 54 of them has disagreed to the statement.
- **Possibility of confusion is more than the clarity:** As per the bar graph conferred, out of 766 respondents, 186 respondents strongly agreed that there is more possibility of confusions than clarity in off campus learning, 320 agreed to the fact, 166 represented a neutral response to neither agree nor disagree while about 94 of them has disagreed to the statement.
- **Problems of technical issues like connectivity:** As per the bar graph rendered, out of 766 respondents, 230 respondents strongly agreed that there are technical issues like connectivity in off campus learning, 303 agreed to the fact, 152 has represented a neutral response to neither agree nor disagree while about 81 of them has disagreed to the statement.

5.2.9 On campus learning may lead to following merits. How you agree or disagree?

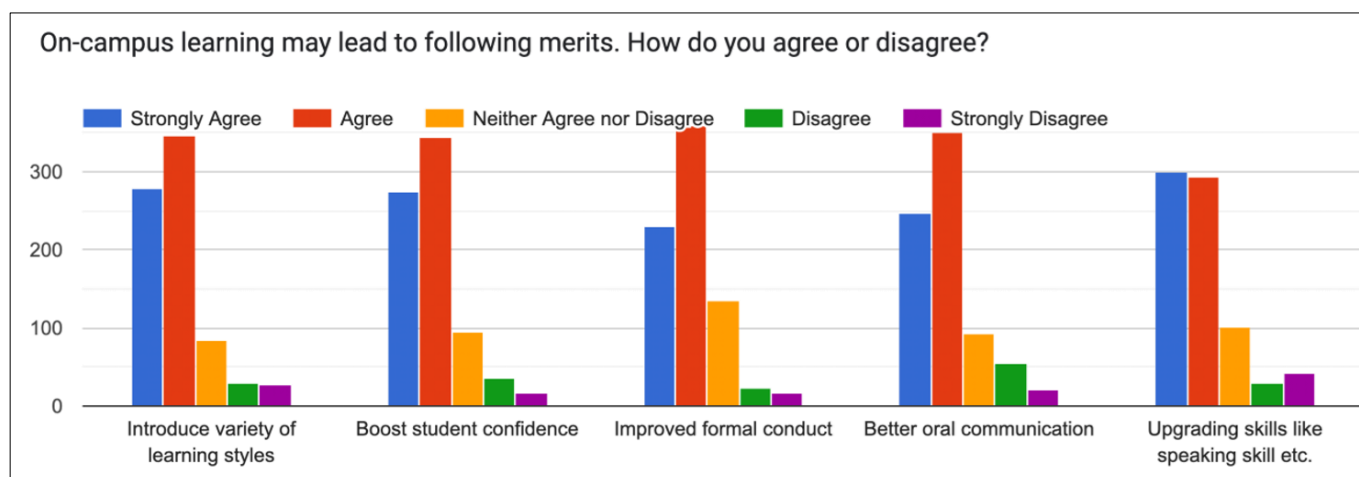


Fig 9: On-campus learning may lead to following merits. How do you agree or disagree?

- **Introduce a variety of learning styles:** According to the bar graph presented, out of 766 respondents, 278 strongly agreed that there can be a variety of learning styles introduced in on campus learning mode, 346 agreed to the fact, 85 showed a neutral response as they have neither agreed nor disagreed, and 57 disagreed to the statement.
- **Boost the student confidence:** According to the bar graph presented, out of 766 respondents, 274 strongly agreed that on campus learning mode can boost the confidence of the students, 344 agreed to the fact, 96 showed a neutral response as they have neither agreed nor disagreed, and 52 disagreed to the statement.
- **Improved formal conduct of the students:** According to the bar graph presented, out of 766 respondents, 231 strongly agreed that on campus learning mode improves the formal conduct of the students, 359 agreed to the

fact, 135 showed a neutral response as they have neither agreed nor disagreed, and 41 disagreed to the statement.

- **Better oral communication:** According to the bar graph furnished, out of 766 respondents, 248 strongly agreed that on campus learning mode induces better oral communication in the students, 350 agreed to the fact, 92 showed a neutral response as they have neither agreed nor disagreed, and 76 disagreed to the statement.
- **Upgrades skills like speaking skills et cetera:** According to the bar graph presented, out of 766 respondents, 300 strongly agreed that on campus learning mode upgrades technical skills like speaking skills and more in the students, 293 agreed to the fact, 101 showed a neutral response as they have neither agreed nor disagreed, and 72 disagreed to the statement.

5.3 Data Interpretation

It is quite evident from the data analysis that both genders, male and female student respondents gave their responses as per their knowledge and experience.

It is clear in Q1-Q4 that majority of respondents believed that on campus is more effective than off campus learning mode, provides better results in terms of its quality, is more interactive as compared to off campus learning in which there is little or no interaction, and is better platform as and when training and education is concerned.

However, respondents showed an ambiguous response in case of misconduct of the examinations either intention or behaviour related or because it connected the students' own behaviour while response were gathered from them, therefore it is skewed information. Quite a number of

research by now have proved that there are different kinds of cheating styles that occur in online examination even before COVID, during and persists in an online examination conduct and there are various facilitators to cheating sources (Noorbehbahani, Mohammadi, and Aminazadeh, 2022) [14].

Again, in Q6 and Q7 it is evident that respondents believed there is more exposure in on campus learning mode and more distraction in off campus learning mode.

Finally, in Q8 and Q9, it is apparent, that respondents agreed majorly to the cons of off campus learning and pros of on campus learning mode. However, the data is little skewed in Q8 for those respondents who demarcated their response in terms of just agreeing to the statements and not strongly agreeing which interprets that there is a room for either an improvement of possibility of utilization of both methods to balance the skewness in order to bring the value in equilibrium as almost similar number of respondents showed their confusion by either marking "neither agree nor disagree" or "disagree" and "strongly disagree". Hence, the results point the outcome of the study towards on campus learning mode for maximum benefits of the respondents, however, one cannot just rely on one mode of conduct. That is because it is not important that on campus learning can be the only mode of conduct while learning material, communication, interaction is concerned which can be improved in off campus learning as well. Refer table 1 for advantages of off campus learning

6. Pedagogical Approaches post-COVID 19 used by Higher Education Institutions

| | | | |
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| Lovely Professional University ^[15] | Classroom Teaching | | LPU official website |
| | Blended Approach | Classroom teaching + Web-based content | |
| | Integrative-based pedagogy | Workshops / Seminars / Guest Lectures / Extension Lectures for knowledge sharing | |
| | Innovative Pedagogy | Virtual labs for communication skills use audio/video recording equipment to improve communication skills of students | |
| | Experimental pedagogy | Use experiments and field work for application of theory | |
| | Classroom-based guided questioning pedagogy | Continuous assessment via Quiz / Games / Viva / Interaction / Open book test | |
| | Critical incident-based pedagogy | Brainstorming i.e., one problem with multiple solutions; critical thinking, creative idea, multi-dimensional exploration, and devise alternatives | |
| | Inductive & Reflective pedagogy | Archive based class discussion for sequential teaching | |
| | Collaborative pedagogy | Via Group Discussion to enhance interpersonal skills; logical & assertive approach, | |
| | Subject matter- based pedagogy | Case-based, problem solving: Theory + Real world; analysis of case done in advance- enable problem solving/ decision-making | |
| | Digital based pedagogy | Simulation: Concept + formulation in professional field, Example, role playing, software-based modelling, Presentation/Video films, demonstration of equipment or models or processes | |
| | Experiential Learning | | |
| | Integrative pedagogy | Internship to feel working with corporate/ organizations in related field working on specific project for a specified duration, mock interviews (give virtual corporate environment) | |
| | Field-based pedagogy | Industrial Visits/ field trips to acquaint them with industry demand, national & international tours. | |
| | Project-based pedagogy | Intensive, active learning, written in final product form. Therefore inculcate ‘learning by doing’ attitude, | |
| | Research-based pedagogy | Literature survey, write term paper based on selected literature/research topic/research orientation. | |
| | Classroom based Stimulus activities | Media watch Clippings and quiz taken from students based on their updated knowledge acquired through newspapers, TV, radio, internet & their comments or opinions are entertained, E-bulletin also introduces on UMS. | |
| | Innovative Pedagogy based on Cutting Edge | Web based learning for instance, Disc catalogues, desktop publishing, industry-based office software Web 2- social media for knowledge sharing & engaging in activities like summer internship, expert sessions, virtual learning student development programmes etc | |
| | Social Constructivist-based pedagogy | Small group activities to encourage collaboration, cooperative learning and evaluated based on team performance. E.g., GD, group quiz, case study etc. | |
| | Inquiry-based, Critical-thinking pedagogy | Student record files for technical subjects like Mechanical engineering, Physiotherapy, Architecture, students prepare case files in their respective fields with | |

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| | Experiential learning pedagogy based on competency & skill | solution and discuss with fellow beings and faculty for its assessment Student-run Ventures on campus to stimulate professional orientation & entrepreneurship- expedite theoretical knowledge into practical application | |
| Chandigarh University ^[16] , Mohali | Integrative pedagogy | Industrial Trainings like Industry expert sessions, Android Application Development at Google visit for organization's exposure Co-curricular: TEDx, Seminars, Workshops, Management Conclaves, Hackathon, Whiz Quest (student research club), GD et cetera | Through social media presence ^[17] Official webpage of Chandigarh University on Facebook |
| | E-Portfolio pedagogy | E-Library, repositories, web content for distance & open learning/ Online education ICT driven-Online expert video lectures, like NPTEL, online discussion, MOOC, e-Journals. | |
| | Experiential learning | Through capstone projects, internships, live projects, industry interface, sessions with academic experts & corporate Gurus, | |
| | Inquiry-based pedagogy | Gamification, Role play, Quiz, management and learning games, Role plays: career interview practice, marketing (sales representative), retailing (merchandising, sales manager or representative), counselling, teaching (administrator, teacher, student or parent roles), debates | |
| | Project-based critical thinking pedagogy | Critical thinking strategy- Tie up with emerald emerging case studies subscription for analytical thinking & reflective judgement in fields like marketing, finance, HR, and Internation Business | |
| | Field-based Self-directed pedagogy | Industrial premises & corporate field: Learning through observing that is by visiting esteemed businesses that grew in which they would work, interact and grow. | |
| | Experimental pedagogy | Online tests, Project Exhibitions on days like Engineers Day, Innovation Day, Tech Invent | |
| | Knowing by Doing approach ^[18] | Create own website, conduct search engine optimization; using analytics matrices analyse performance of website; using statistical tools assessing company's financials; blueprinting business ideas and industries using software's | |
| | Constructivism/ Teaching-Learning Pedagogy | Assignments via Bloom's Taxonomy either written or via Blackboard LMS in form of case study, project or application-based questions. | |
| | Digital-based pedagogy ^[19] | Teaching Learning tool for Practical Courses with help of lab manual and tools, step-by-step demonstration session wise of machines, equipment, chemicals, processes, precautionary measures etc. | |
| Guru Nanak Khalsa College affiliated to Guru Nanak Dev University ^[20] , Jalandhar | Innovative Pedagogy | Via animations, like educational & motivational documentaries are shown in auditorium and seminar halls | Self-Study Report, GNDU (NAAC) GNDU, syllabus |
| | Multi-culturally based pedagogy | Commemorating birth anniversaries of revered Guru and holy saints | |
| | Cultural and Value-based | Organize collective recitals, path of Sukhmani Sahib on Sankranti and Akhand path sahib once every year Interactive festive celebrations-Lori, Diwali, Teej etc. Celebrate national & international days like Women's Day | |
| | Community-based pedagogy | Community engagement via community conscious and awareness drives through blood donation camps, swachh bhara abhiyaan. | |
| | Classroom-based Interpretive trails | Based on inclusive strategy through tours organized for office management, computer science, history et cetera to visit museums, art galleries etc. | |
| | Inclusive-based pedagogy ^[21] | Peer leadership discussion & observation method on topics like Grading procedures, classroom management, and use of technology in classroom et cetera. | |
| | E-portfolio pedagogy | e-Blogs for sharing academic information, concerns & opinions, Infilbnet, CAD. | |
| | Flipped classroom pedagogy | Analyse one policy document (National or International) that is diversity related and present its report | |
| | Experiential based pedagogy | Competitions based activities like essay writing, quiz, poster making to nurture skills. | |
| | Integrative-based pedagogy | Vocational internship conducted, for example, university collaborated with RUDSET Institute to offer 2 employment-oriented courses for girls: i) 3-week course on Tailoring & Dress Designing, and ii) 1-month Beauty Parlour Management Course. | |
| | Interactive pedagogy | Active learning based on social justice pedagogy for critical issues like gender, environment organized via seminars, inviting experts etc. | |
| | Problem-based pedagogy | Case studies, viva, assignments, quiz, discussions, role-plays et cetera. | |
| Punjabi University ^[22] , Patiala | Flipped Classroom pedagogy | Project-based by preparing brief write-up, Student engagement activities like academic reading, case study analysis, class discussion, quantitative analysis of a problem. | |
| | Integrative pedagogy | For skill enhancement- Workshop, Seminar, webinar, online discussions, national & international conference, special lectures & talks. | |
| | Research-based pedagogy ^[23] | Sophisticated Instruments Centre (SIC) to carry out experiments including Equipments like HPTLC, Fluorometry etc. and Fossil Museum. Publication Bureau to facilitate publishing research papers, books and journals. How to write term papers, research question designing, hypothesis building et cetera. | |
| | E-portfolio pedagogy/ Digital pedagogy-ICT enabled | Enabling Open Education Resources like MOOCs, SWAYAM projects, INFLIBNET, classroom-like engagement through online modules. Digital via DTH 6- VIDHIK and EMRC (Educational Multimedia Research Centre)- Country Wide Classroom (CWC), enable e-content and e-videos, Gyan darshan, EDUSAT. | |
| | Leadership readiness pedagogy | Organizing leadership training camps, academic, administrative and leadership skills-based seminar, workshops and symposia | |
| | Visual art pedagogy ^[24] | Celebrating national and international days through Nukkad Natak, skits, role plays, festive dance, group exhibits via stage plays et cetera. | |
| | Innovative pedagogy | Field-based brainstorming via hiking, trekking, mountaineering and rock-climbing courses. | |
| | Sports-integrated pedagogy | Community engagement by organizing Inter-college competitions, gamification, inter university, national and international games. | |
| | Multi-culturally based cutting- | By introducing language software (transliteration) for Punjabi, Urdu, Hindi & Sindhi. | |

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| | edge pedagogy | | |
| | Blended learning pedagogy | Transition from classroom to distance learning is mediated only for M.A. courses | |
| | Interdisciplinary pedagogy | Allow inter-disciplinary programmes like mechatronics, digital electronics, diasporic issues like culture, film studies, literature et cetera. | |
| | Hybrid learning pedagogy | Co-teaching, virtual mode, classroom learning and online evaluation, online assessment, e-videos. | |
| Chitkara University 25, Rajpura | Critical Pedagogy | Signature Pedagogy of Apprenticeship through Industry-oriented courses via corporate lectures with collaborated partners like CISCO, NVidia, Sun Microsystems that are technology based, Quiz etc. | |
| | Project-based & Applied pedagogy | Learning by doing, hands-on approach. Focus on increasing open category credits | |
| | Hybrid pedagogy | Online learning through Google, Zoom, Cisco, Webex and active classroom learning | |
| | Digital pedagogy ^[26] | Open Education Resources (OER) via MOOCs, LMS and ERP system, e-videos and e-content that is classroom based recorded content. | |
| | Integrative pedagogy | Guest lectures (national and international delegates), entrepreneurs, HR managers to acquaint latest trends to students. Global Engineering Week is regular yearly feature. Summer internship, research projects, report writing. | |
| | Experiential pedagogy | Through role plays, discussion, GD, case-based approach, short projects, practical assignments. | |
| | Anticipatory pedagogy | Demonstration to connect theory with observation via Theatre technique. | |
| | Innovative pedagogy/Creativity pedagogy ^[27] | Virtual labs for soft skills enhancement, employability skills, interview preparations, GD, presentations. Practical exercises in labs via simulation software like LABVIEW, MATLAB, Cadence design tools like STAD PRO. Also, patent intensive, tie up with Professional Patents Attorney (conduct campus visits) | |
| | Research-oriented pedagogy | | |
| | Interdisciplinary pedagogy ^[28] | Nano technology, bio informatics algorithm, micro array gene expression, Engineering geomorphology et cetera possible with help of hi-tech labs, ICT enabled rooms, simulations, demonstrations, experimentation et cetera. | |
| | E-portfolio-ICT enabled pedagogy | University ERP-Chalkpad for online content, information, discussion and records, webinar and online content, NPTEL resources on university website and robust campus internet facility. | |
| | Embodied pedagogy | Creative learning by brainstorming via, gamification (management games), Debate competition (Parliamentary Debate), GD (virtual corporate interview prep) | |
| | Critical-based outdoor pedagogy | City tours, educational tours, industrial visits to engage learners with real-life corporate environment, enable demonstration, discussion and problem-solving based on live case-study approach | |
| | Classroom-based art integrated pedagogy/ multi-cultural pedagogy | Competitions, inter-college, inter-university fine arts organized like toy making, doll making, dress designing, puppetry. | |

7. Conclusion

The research was conducted in selected districts of Punjab that catered to both primary and secondary study. Primary study revealed the respondent's satisfaction towards on campus learning over off campus learning in terms of better quality, more learning styles, boosting confidence, face-to-face interaction, appropriate for training and education, no distraction, no misconduct, more interaction et cetera. Through secondary research, going through official websites, journals and research articles published about universities of Punjab, it was observed that on campus and off campus learning has been adopted by institutions post-COVID 19 as a blended mode to some extent. While through literature review it was evident that various pedagogical approaches have their own pros and cons. No matter technology being deprived off the robust infrastructure with good signal, range and width, universities worldwide faced the issue during deliverance of online education like, University of Southern California for whom emergency online lectures were an unchartered territory tested their online platforms to harbor 7,000+ online sessions ^[29], University of California, Berkeley found their Learning Management System (LMS) to be restricted posing challenges in course and event updating for different schools like engineering using Piazza instead of canvas for discussion ^[30] According to research, whenever Technology is incorporated successfully into a top-notch setting, it may assist learners to enhance the subject's expertise, involve learners in the construction of their own expertise, and enhance their growth of advanced cognitive skills (Kozma & McGhee, 2003). Each form of technology has unique opportunities, costs, and limits that impact how instructors

use it in the educational setting. Identifying these interactions cannot be effortless, which means we may need reconsideration in educator training and professional development (Mishra, Koehler, & Cain, 2013) ^[31].

7.1 Way Forward

While NEP 2020 focuses on 24x7 learning, multi-disciplinary education and learning, lab-oriented courses, it is difficult to put everything in one-frame time-bound timetable. In response to this challenge, a hybrid model of teaching and learning can be adopted to divide the timetable and hours of a learner and educator which would require half the time of interaction with the teachers. For Instance, in Sciences, the Performing Arts like Vocal education, fine arts, Instrumental can be on campus, while other subjects like Sociology, Psychology, Political Science, et cetera can be off campus. While for professional courses like BBA, subjects like accounting, statistics, operations research be on campus but principles of management, fundamentals of management, economics, HRM et cetera can be off campus. Similarly, agriculture-based and engineering-based courses (that is pure sciences) should be on campus while a major portion of Management courses (like training and development) can be off campus. In this way, hybrid mode of teaching and learning is suggested to adapt to both on and off campus learning in higher education institutions.

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