An Innovative Learner-Centric Framework for Sustainability of Traditional Private Higher Education Institutions post the COVID Pandemic

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Abstract
Post the COVID pandemic the increasing quality and affordability of digital education is not at all great news for traditional brick-and-mortar private higher education. To reposition the pull of such institutions, the research attempts to develop an innovative prototype called 'BLUECHIP' that would systematize a whole-institutional backed choice-based learning at the researcher's host institution. By default, it would empower teachers to decisively use a mix of 'BLUE' instructional approaches comprising Blended (physical-digital), Liberal (flexible and borderless), Ubiquitous (anywhere-anytime) and Experiential (project/problem-centric) for the attainment of higher learning and assessment outcomes. And by design, its CHIP (Creative, Holistic, Insightful, Personalised) based pedagogical applications would consistently add value to teaching-learning practice and praxis. Under in-house grant support of INR 1 million, it would actuate cohesion and coupling of various departments to ensure an annual institutional performance index of at least 1 on the set target-attainments under the institution's sustainability parameters like financials, talent development, and transfer indicators, which would serve as a multiplying factor to the appraised increments of an employee, both teaching and non-teaching. The methodology had involved data-analysis based on the feedback involving more than 3000 stakeholders under relevant sets of variables to impact learner-centricity along with the collective joy of learning. Subsequently, 60 potential change-makers were nominated by the institution to serve as master trainers of BLUECHIP for onward training and teaming of 400 employees to effectively engage a population of 6000 learners in 60 programs with 1000 authored BLUECHIP modules by the end of 2020-21 academic year.

Keywords: Private Higher-Education, Learning-Experience, Learning-Environment, User Experience, Sustainability, BLUECHIP, CHIP

Introduction

Higher Education in Crossroads? Even before the COVID-19, there has been rapid growth and adoption in education technology, with global education technology investments reaching US$18.66 billion in 2019 and the overall market for online education projected to reach $350 Billion by 2025. Whether it is language apps, virtual tutoring, video conferencing tools, or online learning software, there has been a significant surge in usage since COVID-19 (Li; Lalani, 2020). From the other survey of resources (Shah 2019, Impey 2020, Gopinathan 2020, Kandri 2020) it was evident that Massive Open Online Courses (MOOCs) that were born without a business model would make big money. Coursera reportedly is over 1 billion in valuation and it shares with top partner universities 6-15% of the total revenue and 20% of gross profits on its courses. Enrolment at Udemy, another MOOC provider, was up over 400% between February and March 2020. These surges correspond to lockdowns across the world as the pandemic started to rage. Then, Udacity reportedly offers nanodegrees, which are industry-recognized to help students advance their skills that roughly cost US$1,200, and edX 's micro master's degree cost is about $1,000. A nano master's degree would take around 3-4 months involving 10 hours per week whereas a micro master would roughly be equivalent to one semester of a full-time master's program. The pandemic is refocusing attention on the opportunity for MOOCs to democratize higher education, by providing cheap or free access to anyone in the world. Traditional Higher Educational Institutions can question the merit and validity of such nano and micro degrees or MOOCs or such micro-credentials but the reality is that employers are gradually shifting their recruitment preferences for proven skills without any particular bias on the source of certification of those skills. When massive businesses have already moved from offline to online, the moot question is, why are traditional brick and mortar higher education hesitant to accommodate learning credits from online education even post COVID?

The Future is Digital. Due to the COVID situation, it is widely believed that the rate of growth of digital production and consumption shall increase manifold. As part of our social responsibility, we cannot afford to have digital laggards and digital illiteracy. According to the resources referred (KPMG 2019; Pew Research Centre 2020; Statistica 2020; LiveMint 2020, Computer World 2020) the future is digital. More than half of the 5 billion mobile devices are smartphones and the number of smartphone users in India is estimated to reach 442 million in 2022. People in advanced economies are more likely to have mobile phones – smartphones in particular – and are more likely to use the internet and social media than people in emerging economies. For example, a median of 76% across 18 advanced economies surveyed have smartphones, compared with a median of only 45% in emerging economies. Indians on average consume over 11 GB data per month and 4G data constitute 96% of the total data traffic consumed across the country. By 2030, a billion Indians will have access to the internet, about 839 million will be regular smartphone users, and over 500 million will access digital content in regional languages. 5G will be expected to be available in India by 2021 that would ensure peak data speeds of up to 10 Gbps – up to 100 times faster than the 100 Mbps of 4G. Given the trends, the rise of smart machines, robots, AI, cognitive computing, etc. are certain to beat us in the future.

Pre-COVID Analysis. Our research objective was to rank as per significance the factors that mattered to a learner at the author's institution. A comprehensive list of 59 curricular, co-curricular, and extra-curricular factors (variables) was collated based on the general expectations from accredited professional higher education institutions, especially the self-financed ones. In 2018, more than 3000 students had participated in that survey questionnaires including binary variables as well as few continuous variables on a 5 point Likert scale and the samples were drawn based on convenience sampling. The findings were as below.

- 59 variables from X1 to X59 was categorically regressed using different predictive data modeling to see the effects on our Binary Study Response Variable Y [if satisfied = 1, if not satisfied = 0].
- Based on the analysis we were able to improve especially on the factors that were significant with negative effects (see Table 1) like mapping of affordable MOOCs and other online resources for teaching courses (X16, X59), Continuous evaluations outside pen-paper types (X8), Modernization of cafeterias, labs, and classrooms (X48, X49), Introduction of Centres of Excellence (X23, X37), and other activity-based learning like problem-based flipped-classroom, etc. (X55).
- The working with Table 1 factors also added to the sustained emphasis on factors that were significant with positive effects (see Table 2). For example, the above Centres of Excellence also contributed to X4, X5, and X56. The introduction of 8 am-8 pm learning day helped X6, X50, and X3, the impetus on LMS (Learning Management System) that was actuated in 2017 was further made effective with demanded features for better outcomes with X54, besides additional surveillance systems, security monitoring, and safety audits ensured that the top priority for the learner, X14 was taken care of.
- Only 19 out of the 59 factors were found to be significant for a learner.

Table 1: Factors significant with negative effects by priority

Variable	Factor
X16	Payable Faculty guided international study programs
X8	Helpfulness of internal examination
X23	Development of English communication
X49	Lab and learning infrastructural facilities
X48	Good Canteen services
X37	Yoga and meditation camps
X59	Relevant academic certifications with additional fees
X53	Maintenance and protection of utilities
X55	Classroom-activity based learning

Table 2: Factors significant with positive effects by priority

Variable	Factor
X14	Over all safety-security inside the campus
X6	Initiative to provide additional development
X4	Language learning and communication skill development
X50	If initiative taken for lab and infrastructural facilities after college hours
X5	Adequate social and cultural events organized
X56	Scope of Learning performing arts
X14	Requirement for Technology based teaching skills
X1	Requirement of more industrial exposure
X2	Requisite interest in your program of study
X3	Need of conducting enough industry interactive sessions

Post-COVID Analysis. The Annual Academic Survey was conducted from May - June 2020, with 5805 students with a primary focus to help gauge the significance of online education – involving the LMS, pre-produced content, online teaching, e-assessments and its overall effectiveness as whole technology enabled academic delivery system. The questionnaire was e-mailed to all respondents and it used a multiple-choice response: Strongly Agree, Agree, Cannot Decide, Disagree, Strongly Disagree, and No Comments. The majority preference with 'Agree' and 'Strongly-Agree' feedback was for the following:

- The effectiveness of using technology for academic delivery.
- Addition of interactive assessments like online quizzes, polls etc.
- 3-4 hours of online-teaching (curricular) a day and a maximum of 5 days a week.
- Tailor-made pre-produced content on curricular-topics in LMS

The Problem. In light of the above situation we the traditional brick and mortar higher educational institutions were mandated to adapt quickly to the digital future, while retaining our differentiators vis-à-vis online education and distance education for our sustainability in the new normal era. Either we have to perform or perish. To address that the internally funded project entitled "BLUECHIP" was undertaken at the author's institution.

Methodology

BLUECHIP. We introduced an innovative Learner-Centric Framework named BLUECHIP for future-proofing of traditional private higher education institutions post the COVID Pandemic (See Figure 1). Where the BLUE (Blended, Liberal, Ubiquitous, and Experiential) components as a combination shall provide for an integrated environment for learning and the CHIP (Creative, Holistic, Insightful, and Personalized) design shall cater to the learning experience. As the physical-digital ecosystem, BLUE shall always be accessible to all and is expected to gain more significance and technology-muscle for the continuous quality improvement in higher education. However, it cannot merit becoming a unique differentiator for us. Whereas, CHIP can. It will signify the ingenuity of user experience design for consistently enhancing the learners' experiences. Synergizing the two together as BLUECHIP, there shall be a higher probability for our institution's sustainability in the future. Traditional higher educational institutions with CHIP value shall predominantly bring

personalized teacher-student interaction to the fore compared to online education and distance learning institutions.

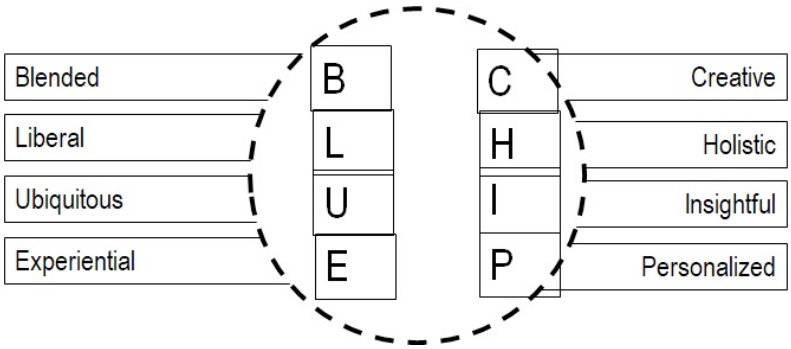

Figure 1: BLUECHIP components

Step 1: Positioning the BLUECHIP. We reviewed the literature to form a perspective as an integrated BLUE environment for learning and doing alternatives and CHIP for yielding learner-centric value propositions based on those alternatives in the context of a digital future.

Blended Learning

Garrison (2004) defined blended learning as "the thoughtful integration of classroom face-to-face learning experiences with online learning experiences". Blending as the "new normal" in course delivery was identified pre-COVID in terms of the hybridization of online and face-to-face discourse, delivery media, and instructional methods (Norberg, Dziuban, & Moskal, 2011; Graham 2006; Cross, 2006). The diversity of blends reflected the range of possibilities for transforming learning experience in particular and the learning effectiveness, learner satisfaction, faculty satisfaction, access, and cost-effectiveness in general. The 'how-people-learn' framework focused on the development of learner-centered, knowledge-centered, assessment-centered, and community-centered learning environments (Bransford, Brown, & Cocking, 1999; Bunderson, 2003). A review of the literature, in general, informed that there was not any perfect model to guarantee the efficacy of blended learning (Zhang, Zhu 2017).

Liberal Education

Liberal education is based on the liberal arts that had formed the basis of education since the ages, which had been about enabling free-thinking and noble actions for a quality living of all. Further study of various literature (Sorgner, 2004; Barnes 1984; Antony, 1990; Isaiah 1969) expanded the idea of liberal education as momentary and lifelong freedom associated with various stages of life with corresponding values and interests that changed with time.

Ubiquitous Learning

As a new learning environment, ubiquitous learning integrated the benefits of e-learning and mobile learning and enhanced context-aware and seamless learning from any location at any time. According to various studies (Ahonen, 2005; Bomsdorf, 2005; Brusilovsky, 2003; Kappel, 2002) both space and the learner took different roles in adaptation, where learner used the learning system accessing the space to perform related activities. Besides, the plasticity of digital learning spaces or

repositories took into account the learners' choices on selection and adaptation and promoted cooperative learning.

Experiential Learning

The concept of experiential learning was that learning should be a continuous process involving students in the co-creation of knowledge as they integrated theory and experience by doing (Kolb, 1984; Kolb, 2005; Kolb, 2008; Valkanos, 2007). The metrics of experiential learning had to be at best qualitative because it involved spontaneous and multiple interactions among students, business and faculty in the problem-solving process (O'Brien, 2017).

The CHIP

CHIP is posited as a virtual integrated intelligent circuit that will be 'Insightful' in designing value for all participants in the knowledge chain. Where the 'Personalized' demand would come from learners and 'Creative' supply would be from 'Holistic' knowledge sources comprising, an organically formed network of educators, experts, AI bots, digital repositories, etc. Thus the CHIP's Creative, Holistic, Insightful, and Personalized teaching-learning attributes would be taken as a composite unit to deliver user experience through the BLUE learning environments. Graham Wallas' Art of Thought (1926) had laid a four-stage model of the creative process (Preparation, Incubation, Illumination, Verification) that later became a five-stage model with the Intimation stage presented as a general conceptual architecture within which relevant concepts and theories from more recent creativity research, including neuroscience and intuition, were positioned and from which a number of implications were drawn (Sadler-Smith, 2016). The CHIP model (Figure 1) would be well-formed with the addition of a sixth-stage in form of the Collaboration stage for higher learner-centricity with a conscious accommodation of Bloom's taxonomy levels (Anderson et.al, 2001). The two primary ends of the CHIP's knowledge chain would be the co-creators of new testable and usable content akin Neil Fleming's VARK (Visual, Auditory, Reading/writing, Kinesthesis) at basic, intermediate, and advanced levels.

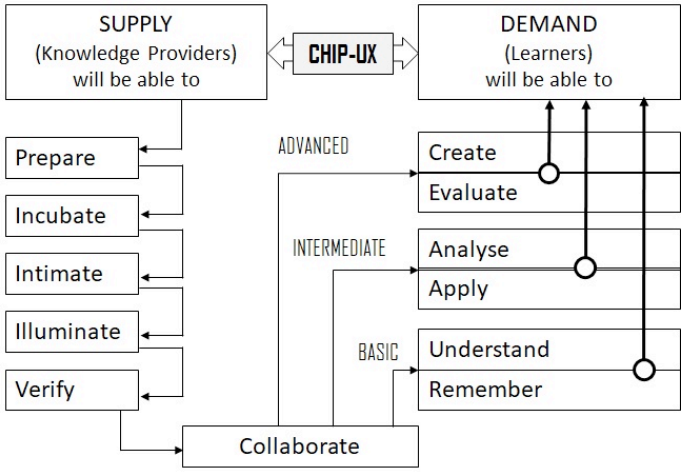

Figure 2: CHIP Model for Learner Centricity

Table 3: A typical BLUECHIP Dashboard

Code	SPA	A	B	C	D
SPA-F	**Financials**				12
Listing of all Sustainability Performance Areas (SPAs) under SPA-F_{1-n} with the pre-set target A values (fixed). The B and C values of SPA –F_1-$_n$ will dynamically get updated.					
SPA-A	**Academic**				25
Similarly, listing of all SPAs under SPA-A_{1-n} with fixed A and dynamic B, C					
SPA-G	**Governance**				10
SPAs under SPA-G_{1-n} with fixed A and dynamic B, C					
SPA-S	**Support Services**				08
SPAs under SPA-S_{1-n} with fixed A and dynamic B, C					
SPA-P	**Placements & Partnerships**				15
SPAs under SPA-P_{1-n} with fixed A and dynamic B, C					
SPA-W	**WoW Factors**				20
SPAs under SPA-W_{1-n} with fixed A and dynamic B, C					
SPA-R	**Response System**				10
SPAs under SPA-R_{1-n} with fixed A and dynamic B, C					
				Total of D	**100**

Index	
A	Performance Target Value (PTV) followed a standard unit of measure. For qualitative measures the PTV was defined as a number in a scale of 1-5, (representing 20 – 100 percent).
B	Actual fulfilment as on the instant against the corresponding A
C	Performance score against the concerned A as on the instant = B/A
D	Relative weightage of SPAs (was fixed at the time of SPAs and PTV finalization).
E	Average Performance Score for a SPA group. For Example, $E_{SPA-F} = \sum C_{SPA-F1-n} / n$
F	Net Performance Score for a SPA group. For Example, $F_{SPA-F} = D_{SPA-F}/100 * E_{SPA-F}$
Institutional Sustainability Performance (ISP)	
ISP = Average ($F_{SPA-F,}$ $F_{SPA-A,}$ $F_{SPA-G,}$ $F_{SPA-S,}$ $F_{SPA-P,}$ $F_{SPA-W,}$ F_{SPA-R})	

Step 2: Model Framework. The sustainability of private higher education primarily depended on the students' fees unlike the case with government-aided institutions. The BLUECHIP perspective model (see Table 3) assured the entire organization for ensuring higher intake-capacity occupancy with an enhanced learning experience. Subsequently, the author organization's functional units had identified its Sustainability Performance Areas (SPAs) as SMART (Specific, Measurable, Attainable, Relevant, Time-bound) goals at the start of the academic year of 2020-21.

Step 3: Appraisal System. A new system of performance-appraisal of our employees would be in vogue that will bring the best motivation for all in the organization to contribute and secure an ISP score of more than or at least equal to 1. Logically, the obtained ISP shall be the multiplying factor to the number of annual increments merited by an employee as per the BLUECHIP's HR increment policy of the organization. For example, it has been mandated that all teachers have to attain the

certification of ‘BLUECHIP Teacher’ based on their CHIP-UX work evidence in order to be considered for any increments, etc. Aside from that, the policy ensured periodic training and development of all employees based on their needs assessment vis-à-vis the relevant SPAs. The ‘A’ value fixation of the SPAs followed a participatory process and was fixed at the start of the academic year. While the actual values ‘B’, ‘C’, ‘D’, and the ISP score will get populated as per the progress status inputs. All employees of the organization were trained to access the BLUECHIP management system and generate progress status query reports under as well shall be visible to all employees for needful corrective, collaborative, and cogent actions. The appraisal year with BLUECHIP was notified to all concerned, which was October 2020-September 2021.

Results

The SPAs as per the above model (Table 3) for the said appraisal year beginning October 2020- September 2021were finalized. In that pursuit, under one of the goals of SPA-A, the organization got its online-education audited by QS-iGauge and received its E-Lead (as E-Learning Excellence for Academic Digitization). Besides, with respect to another goal relating the pedagogy, the routine was initiated in three zones- Z1: 8 am – 10 am, Z2:10am - 4 pm and Z3: 4 pm – 8 pm. The bands Z1 and Z3 were with a choice based selection from a bouquet of short certification courses with CQ (Career Quotient) points and Z2 were earmarked for curricular courses and compulsory finishing sessions for employability readiness. Further, a new normal pedagogy approach that included the BLUE environments and the CHIP design experience (see Figure 2) was under prototyping. The Z1-3 learners were motivated to attain minimum CQ points. Furthermore, all programs were mapped with relevant MOOCs and digital repositories, 3-year degree Bachelors’ programs were upgraded as per CBCS (Choice Based Credit System) with 140 credits. Aside from that, 60 potential change-makers were selected as master trainers of BLUECHIP for the development of 400 employees to actuate the BLUECHIP SPAs. The expected results among others based on quantifiable pieces of evidence were to improve the experiences of 6000 learners in 60 programs with 1000 in-house VARK modules under the overall motivation for the organization towards achieving an ISP of at least 1 or more than 1 by September 2021.

Identity Icon	Approach Design	Description
	EDUTORIUM	Education technologies transform the website to *edutorium* - as the one-stop digital campus for a learner mirroring authentic physical campus.
	HYBRID CLASS	Blending the pre-produced and live content, especially for practical and demonstrative sessions with a provisioning for both physical and virtual participation
	My-CALL	Learner is able to prepare dashboard based on choice on electives, projects, prototypes, performances, etc. and a choice of career and is able to monitor, evaluate, and share
	My-T.KIT	Learner has the technology requisites to access the internet, apps, content, storage, support, e-learning and e-assessment and also for authoring content
	My-LIFE	Life-changing experiences for all types of personas with usable value propositions and measurable evidences for quality living
	LMSing	LMSing will be about learning and exchange of nano and micro modules in anytime and anywhere mode: micro-credentials, authenticated by credible institutions
	HOTShoT	Learning with HOTS (Higher Order Thinking Skills) for holistic transformation of the learner for effective outcomes involving the self, enterprise, and society.

Figure 2: New Normal Pedagogy Approach using BLUE Environments and CHIP Experience

Conclusions and Discussion

Higher Education, post-COVID should actually be put to testing and evaluation based on the desired experiences of learners so that there is higher assurance on intake-pull even during unfavorable or disruptive times. The present situation compelled us to look at new user stories, problem scenarios, and alternatives that would lead to effective value to all participants adding to the vitality and viability of the organization. In this regard, BLUECHIP should be an innovative deployment, especially for private higher education institutions, where the sustainability is majorly dependent on student fees at one side and on the other dependant on overcoming the competition, especially from the high quality to cost propositions of online education.

BLUECHIP is intended to widen and deepen the collaboration among the learners, researchers, teachers, staff, and alumni. Besides, other stakeholders like parents, higher education officials, industry associates, and partners. There will be different user stories based on specific scenarios and solutions (see Figure 3-Appendices), which will be important inputs for actuating valuable user experience. The graduate

attributes have to focus more on learner-centricity and on the quality of knowledge-transactions as posited with the CHIP model. Problems will keep on changing, and more so, after every major disruption. Accordingly, any actionable learner-centric model under the BLUECHIP perspective has to be agile enough to suitably adapt to any change and transformation. A country like India with the highest population in the age group of 18-25 years has an opportunity to maximize its gains from its new National Education Policy 2020 (NEP), again a transformative change, to fructify its ambition to be part of the comity of developed economies in the near future. For that, higher education institutions have to play a significant role. Where, the learner-centric attributes have to be derived from NEP as exemplified below, which should become the source for BLUECHIP's SPAs.

- Multi-disciplinary education ensuring the unity and integrity of all knowledge.
- Life skills such as communication, cooperation, entrepreneurship, resilience, ethics, empathy, social service, sports and wellness, creative and performing arts, respect for public property, scientific temper, liberty, responsibility, and pluralism.
- Recognizing, identifying, and fostering the unique capabilities of each student, and to promote each student's holistic development in both academic and non-academic spheres.
- Flexibility, so that learners have the ability to choose their learning trajectories and programs, and thereby choose their own paths in life according to their talents and interests.
- Emphasis on high-order assessments for conceptual understanding rather than rote learning and learning-for-exams.
- Creativity, critical thinking to encourage logical decision-making.
- Extensive use of technology in teaching and learning and increasing inclusion.
- Continuous professional development and positive working environments.
- Efficiency of the educational system through autonomy, good governance, empowerment, audit and public disclosure, quality accreditations, and continuous review. Some of the instrumenting UX verbs for the SPAs in the SPA-A category can be:

i) Catalyze – multifarious user activities under focussed goals by deploying state-of-the-art technology, resources, processes, means, and machinery.
ii) Cultivate - intellectual capital to enrich and employ users to add to the body of knowledge and understanding.
iii) Design - environment to provide user-centric quality of services under an inter-disciplinary eco-system of joyful participation, co-creation, and usable solutions.
iv) Enhance- the user access with equal opportunity, inclusion, fellowship, the voice of reason, the spirit of inquiry and exploration.
v) Foster- user-industry linkages for value generation in curricular and co-curricular deliverables, incubation of ideas, internships, placements, etc.
vi) Deliver – local and global insights and exposure to users for real-life problem solving by way of investigation, experimentation and validation.
vii) Create – provisions to promote innovation and change

All the eight education and learning components of BLUECHIP were empirically proven before and are available in various literature studied here. Based on that BLUECHIP it will be a value proposition for organizations in general and educational ones, in particular, involving the whole organization under one common motivation of learner-centricity. Moreover, as a synergistic combine BLUECHIP is expected to

create new vistas for research, innovation, and development in the wider the interest of all higher education participants, councils, regulators, industry associates, entrepreneurs, online education business, grant providers, etc. and thus becoming the new elixir of sustainability of traditional higher educational institutions.

Appendices

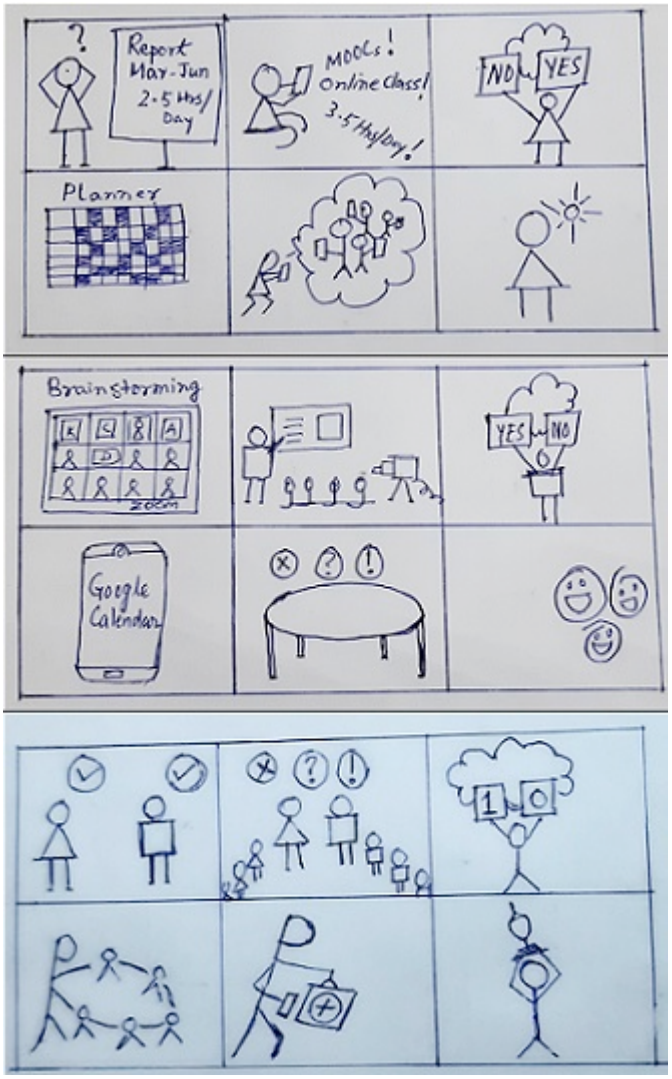

Figure 3: Instance about User Stories under CHIP

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