

CEMCA

BLENDED LEARNING POLICY

Templates for Higher Education Institutions
in Commonwealth Asia



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Templates for Higher
Education Institutions in
Commonwealth Asia

CEMCA New Delhi

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ABBREVIATIONS AND ACRONYMS

ADDIE	Analyze, Design, Develop, Implement, and Evaluate
ARCS	Attention, Relevance, Confidence, Satisfaction
ASEAN	Association of Southeast Asian Nations
CC	Creative Commons
CDT	Component Display Theory
CEMCA	Commonwealth Educational Media Centre for Asia
COL	Commonwealth of Learning
CPD	Continuous Professional Development
EASC	East Asia Study Centre
ETR	Emergency Technology Response
GER	Gross Enrolment Ratio
HASS	Humanities and Social Science
HEC	Higher Education Commission
HEI	Higher Education Institution
HOD	Head of Department
IBLP	Institutional Blended Learning Policy
ICT	Information and Communication Technology
IQAC	Internal Quality Assurance Cell
M.Phil	Master of Philosophy
MoE	Ministry of Education
NEP	National Education Policy
NQF	National Qualification Framework
OECD	Organisation for Economic Co-operation and Development
OER	Open Education Resource
PG	Post-Graduate
SABER	Systems Approach for Better Education Results
SAM	Successive Approximation Model
SDG4	Sustainable Development Goal #4
SOLO	Structure of Observed Learning Outcome
STEM	Science, Technology, Engineering, and Mathematics
SWAYAM	Study Webs of Active-Learning for Young Aspiring Minds
UG	Undergraduate
UGC	University Grants Commission
UN	United Nations
UNESCO	The United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund

FOREWORD

As technology develops and spreads its wings further and further, technology-enabled learning will become the way of education. Blended learning is possibly the best technology-enabled learning strategy. Blended learning being a judiciously chosen mix of online and face to face instructional strategy, it weaves a pattern with several methodologies and learning tactics. The braiding of several instructional methodologies and learning tactics supports the learning styles of different types of learners; and thereby improves learning outcomes of visual, auditory, kinesthetic and read and write type learners.

Blended learning is not new. Learners, on their own, blend several learning tactics and strategies like listening to a lecture, reading books, discussing with peers, watching educational television, and now desktop as research and online videos. The blending by students may not match the grammar of instructional design or the accepted definition of blended learning. This variety of impromptu assemblage of methodologies and learning tactics improves students' learning experience, maybe, a shade better. But its total potential remains unexploited. The learning outcomes of students remain less than what they could have been. For greater impact on learning experience and outcomes, it is necessary to adopt blended learning within a scientific instructional design framework.

Adoption of blended learning in higher education can usher in a transformative experience for both students and teachers. Research indicates that blended learning is more joyful and engaging, and students perform better. Teachers find larger space for creativity by transferring the mechanical aspect of workload through technology integration. To achieve this transformative experience, every teacher must muster the art and science of blended learning - knowledge and skill.

Likelihood of success of transformation by adopting blended learning increases when individual teachers' efforts are legitimised and supported by an institutional blended learning policy set within a larger framework of national blended learning policy.

NEP 2020 recommends few initiatives and Blended Learning Models is one of the key initiatives. CEMCA has become the leader by facilitating the formulation of national and institutional blended learning policies; and blended programme, course and unit learning designs. CEMCA decided to opt for creating national and institutional policy templates and blended programme, course, and unit learning design templates. Countries and higher education institutions in the Asian commonwealth can use the templates to create national and institutional blended learning policies, respectively. Deans of faculties, heads of departments and individual higher education teachers can develop the blended programme, course and unit learning designs adopting the respective templates. We hope that the policymakers at the national and institutional levels and the implementers at the faculty, department and individual higher education teachers will find these templates useful for initiating the transformation of higher education in this region.

I sincerely thank Prof Marmar Mukhopadhyay, a technology-enabled learning and blended learning specialist, for accepting this assignment and developing the templates.

I express my gratitude to Dr. Shiffon Chatterjee for coordinating the project and sincerely thank Dr. Manas Ranjan. Panigrahi to finalise the document.

Professor Madhu Parhar
Director-CEMCA

AUTHORS' INTRODUCTORY STATEMENT

This document contains five independent, self-contained modules:

- Module 1. National Blended Learning Policy Template
- Module 2. Institutional Blended Learning Policy Template
- Module 3. Blended Course Design Template
- Module 4: Blended Unit Design Template
- Module 5. Exemplar Blended Unit: Taxonomies of Educational Objectives

Module 1 is addressed to the national expert committee or national institutions like UGC responsible for national policymaking. For example, Bangladesh UGC has enacted a BLD policy. Indian UGC has published a guide for blended learning. The module provides a policy toolbox or template that the policymakers can use for developing a National Blended Learning Policy for their respective countries.

Module 2 is for institutional academic leaders like Vice-Chancellor, Pro-Vice-Chancellor, Deans and university statutory bodies like senate and syndicate, boards of studies, etc., responsible for institutional policymaking. The institutional policymakers can use this template for developing an Institutional Blended Learning Policy for their respective institutions - universities and colleges.

Module 3 is a template for developing a blended course design. Course design is usually done at the Departmental level but needs the approval of the faculty to which the Department

belongs and the Board of Studies or Academic Council. Depending upon the provisions in the statute, course design may need the approval of the statutory bodies like the Syndicate or Senate. The course designing is mostly done at the departmental level involving the concerned course teachers.

Module 4 contains an exemplar blended unit design. The Taxonomies of Educational Objectives has been chosen as the unit. Besides being taught as a unit in educational technology at the PG level, it is necessary for all teachers for developing a blended course design. The unit design is provided in two formats - one for PG classes and another for higher education staff training.

Module 5 contains the concepts and benefits of blended learning, which are common denominators for all stakeholders, that is, national and institutional policymakers, academic leaders in faculties, departments, and teachers. The taxonomy of educational objectives, pedagogy of BLD, and instructional design are of special interest for teachers designing blended courses and the last mile implementers of BLD in higher education. Since the readership and users of the modules are different, it is necessary to retain certain common arguments and associated references across the modules with modifications to suit the differential needs of the users.

MODULE 1

NATIONAL BLENDED LEARNING POLICY TEMPLATE

INTRODUCTION

The learning styles and preferences of 21st century learners and the pedagogy of the industrial education model are incompatible. The industrial model assumes that every student is a human replica. It recommends one curriculum, one instructional approach (monologue lectures), and one examination and creates one consistent product that can fit into the business and production machinery and state bureaucracy.

Bowles and Gintis (1976) described how schools prepare the workforce for the capitalist production system of the economy for a "life of exploitation," in their work *Schooling in Capitalist America*. Carnoy (1974) saw schooling as a means of colonising students' minds that serves the capitalist system; schooling is meant to centralise and concentrate power in the hands of a few nations and the ruling elite in those nations. Freire (1970) professed the pedagogy of liberation and education as cultural action for freedom.

21st-century learners demand independence to choose what to learn, how to learn, when and where to learn, and when and how to assess learning outcomes, thus creating an individualised learning pathway and portfolio. Conventional pedagogy with stiff stereotypes is an obstruction in the path of 21st century learners. Hence, the traditional pedagogy stands seriously challenged.

Developments in technology, adaptability and continuous integration in education support the learning ambitions, styles, and preferences of 21st century learners. They find technology-mediated and integrated learning consistent and aligned with a technology-enriched society and a technology integrated lifestyle. However, technology development and integration in education and conventional pedagogy are in conflict. Increasing preferences for online education by students and teachers provide proof of this.

The conflict between pedagogical practices and possibilities becomes sharper when examined against the backdrop of enormous developmental disparities. The disparities are very complex. For example, there is a vast disparity in the per capita income of average Commonwealth Asian and African countries vis-à-vis OECD countries. However, the OECD countries import many expert human resources from these impoverished and developing countries, e.g., global leaders in IT industries like Microsoft, Google, and others.

Within this larger context of disparities, there is a silent but definite emergence of one world. The labour migration from executive to technical to the service providing level (semi and unskilled workers) is compelling the world to set common or comparable standards for skills and qualities. The Washington Accord, Dublin Accord, and global educational service providing industries like Coursera, FutureLearn, edX, and Udemy are a few examples.

UN's Sustainable Development Goals show human ambition for creating one world with an acceptable quality of life. Education (SDG4) is the ambitious policy goal for achieving this.

Education can play a vital role as the most powerful lever of change only with a new age pedagogy that facilitates learners' freedom to evolve as lifelong self-learners fit for global citizenship in a fast-changing world driven by technological developments and accelerating human aspirations. Blended learning is technology-mediated, flexible, and deconstructable. The opportunity to earn accredited Micro-credentials is the best response to the challenges of lifelong self-learning of 21st-century learners for one globalised world. It is no more a choice; it is a necessity. Hence, a pedagogical policy is necessary for transforming higher education for achieving these objectives.

OBJECTIVES OF HIGHER EDUCATION

The percentage of the graduate population in any country is a significant determinant of the country's economic development and overall progress. Compared to the OECD countries (38 per cent),¹the graduate population in the Asian Commonwealth countries is much lower,² especially among the E-9 members of the Asian Commonwealth countries. One of the objectives of higher education is to increase the proportion of the graduate population. The Asian Commonwealth E-9 countries are setting ambitious targets for increasing their graduate population. For example, India has set a target of 50 per cent GER in higher education by 2035 (MoE, 2020).

Along with the number, an equally important objective of higher education is cultivating desirable graduate attributes, especially generic attributes like self-awareness and lifelong learning, employability and

professional development, global citizenship and engagement, and academic and research literacy (Wong et al., 2021). According to Stirling University, innovative and creative, socially intelligent, digitally literate, and responsible for higher education institution behaviour and futures³ are also important graduate attributes.

It should be evident that most institutions, if not all, emphasise generic skills that influence growing up as global citizens and globally employable graduates. The effect of the instructional process becomes more important than the content. For example, collaborative learning helps develop cooperation and collaboration, working in teams, interpersonal relationships, leadership, and other skills. Similarly, research and innovation skills are better developed through Internet-based learning and desktop research.

Higher education graduates are future thought leaders and innovators. Hence, another objective of higher education is developing thought leadership and innovation skills, for which an instructional strategy is a critical factor. The instructional strategy needs to change to equip learners to acquire, deepen, and create knowledge moving beyond the current practice of receiving and storing knowledge ('basic education': Kozma, 2011). Instructional practices need reorientation for developing students' learnability - exploring and finding, processing information, reflecting, contemplating, innovating, and creating new knowledge.

University graduates are shapers of the future of human society. They lead employment in the organized sector. They are also steadily emerging as leaders in the start-up spectrum. Most importantly, as the fragmented world evolves as one world, an important challenge for higher education will be developing globally employable youth with global citizenship attributes.

1 https://www.oecd-ilibrary.org/docserver/eag_highlights-2010-6-enpdf?expires=1643263354&id=id&accname=guest&checksum=A61BBB5DA8722D3AB111E8676E0A4C29#:~:text=%E2%80%93%20On%20average%20across%2026%20OECD,Portugal%20and%20the%20Slovak%20Republic.

2 Comparative and reliable data are not available. For example, different reports indicate that India has 15.1 per cent and another report says it has a 4.5 per cent graduate population in the country. That Pakistan has set its target at 15 per cent graduate population in 2030 is an indication that as of now, the graduate population is below 15 per cent.

3 <https://www.stir.ac.uk/student-life/careers/careers-advice-for-students/graduate-attributes/>

Hence, there is a need to reconsider the teaching-learning processes and practices in higher education. Global research evidence favours blended learning for its effectiveness (Bernard et al., 2014; Brodersen & Melluzzo, 2017; Stockwell et al., 2015); flexibility for students to choose the content and progress at their own pace (Caulfield, 2011; Glazer, 2012; Linder, 2017), and engagement in active learning (Namyssova et al., 2019).

BLENDED LEARNING

Blended learning has been frequently defined as blending the face-to-face mode of learning with online education. Garrison and Vaughan (2008) clarified blended learning as a “thoughtful fusion of face-to-face and online learning experiences”. During the online and the “technology-mediated components of these learning experiences, students are not required to be physically together in one place but may be connected digitally through online communities” (Cleveland-Innes & Walton, 2018). These definitions assume face-to-face and online education as a single-mode delivery system. There is a large repertoire of more than 70 face-to-face and technology-mediated learning

tactics. Learners blend a variety of learning tactics – more than 70 – from face-to-face and technology-mediated learning repertoires (Mukhopadhyay, 2022). Blended learning should blend learning tactics from face-to-face and technology-mediated learning for meaningful student engagement and pre-specified learning outcomes.

CONTEXTUALISING BLENDED LEARNING

Though blended learning with robust research evidence has emerged as a preferred response to the challenges of meeting the objectives of higher education, it is not a panacea. Its effectiveness depends on the contextualization and choice of the blended learning model.

Blended learning has been defined as an informed choice of face-to-face learning with online education. Thus, blended learning is one form of technology-integrated education. Arguably, blended learning is a sub-set of ICT in education. Further, the ICT policy in education is a sub-set of the national policy on education set in the socio-economic and cultural ecosystem (Figure 1.1).

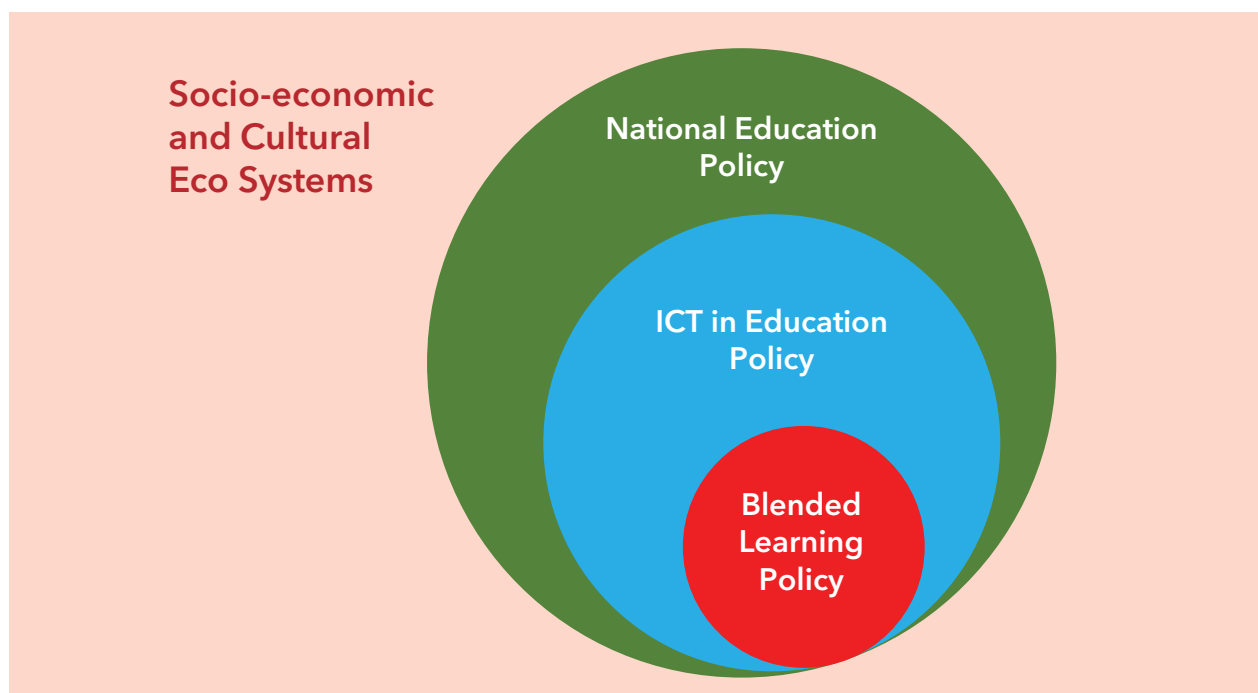


FIGURE 1.1. CONTEXTUALISING BLENDED LEARNING POLICY

Source: Author

Higher education institutions are of different types - by disciplines like science, technology, engineering, and mathematics (STEM); humanities and social sciences (HASS); medicine, agriculture, law, etc.; by structures like universities, constituent faculties, constituent colleges, affiliated and autonomous colleges, diploma institutions (for example, polytechnics); by management like government, private, and public-private partnerships; affiliating and unitary universities; by size (for example, large, medium, and small institutions); and single versus multi-faculty. The nature and type of higher education is another domain of contextualization.

Access to technological resources, especially the Internet connectivity and bandwidth - both institutional and home - is a major issue in contextualizing the blended learning policy. Important determinants of successful adoption of blended learning are human, material, and financial resources; access to digital devices⁴ and environmental resources; learning resources, especially online videos, textual material, images, slides, games, simulations, and apps; and online and offline tests and quizzes.

Global trends, especially developments in technology and associated policies, are other dimensions of contextualisation of the blended learning policy. The Asian situation and initiatives add another dimension for the Asian Commonwealth countries.

GLOBAL MOVEMENT

UNESCO, UNICEF, OECD, and the World Bank provide useful guidelines on the framework of ICT in education policies. Singapore's four-stage ICT Master Plan and the World Bank's SABER-ICT models (Trucano, 2016) take almost a grammar book approach to Kozma's (2011) Knowledge Ladder Model. The British document, *Realising the potential of technology in education: A strategy for education providers and the technology industry (2019)*, also provides

a sound framework for educational technology policy.

"The serious involvement of international agencies like UNESCO, UNICEF, OECD, World Bank indicates global interest and conviction of potential of ICT in education as a means for educational and national development" (Mukhopadhyay, 2022, p, 499). Hence, there is a serious global interest in ICT in education policy and technology-integrated education. The recommendations of all these global agencies provide a reference point for the need for ICT in Education Policies (Mukhopadhyay, 2022).

OPEN EDUCATION RESOURCES

A vital innovation, Open Education Resources (OERs in repositories) and OER policies need to be factored in when designing a Blended Learning Policy. OERs are online repositories of various learning materials of significance, especially since online learning is a component of blended learning. For example, India's SWAYAM courses - from Class 9 to the post-graduate level- contain video lectures, specially prepared reading material that can be downloaded/printed; self-assessment tests and quizzes; and an online discussion forum.⁵ Khan Academy is a popular destination, especially for digital content.⁶ Precious academic documents and material by international agencies like UNESCO, COL, and others provide free access to high-quality material.

Several countries have enacted OER policies and/or established OERs in school and higher education. Comprehensive documentation on OER was done by Dhanarajan and Porter (2013) for COL from an Asian perspective. Mukhopadhyay et al. (2018) provide a review of OER in a case study of OERs in two open universities in India. Repurposing resources in OER repositories can be an input for blended learning.⁷

4 Students in remote villages who attend colleges, maybe in the block headquarters, do not get Internet connections unless they sit on the bank of a large pond (water tank) or on the branches of tall trees as installing towers in rural areas is not profitable for telecom companies.

5 <https://swayam.gov.in/>

6 <https://www.khanacademy.org/>

7 <https://open.usq.edu.au/course/view.php?id=208>

ASIAN INITIATIVES

Asian Commonwealth countries have expressed ICT in education policies differently. For example, Bangladesh enacted the Master Plan for ICT in Education (2012-21) and reviewed its progress in 2019. India has an articulated policy on ICT in school education (2012) but not in higher education. India articulated her ICT in education policy in NEP (2020) in both school and higher education. Singapore’s four-stage model is another important plan of action (Huat, undated)(Figure 1.2).

education in particular (Akram et al., 2021; Jumani et al., 2018; Shaikh & Khoja, 2011). It is a similar case in other Asian Commonwealth countries.

BLENDED LEARNING POLICIES

Technology-mediated education was forced on higher education globally, including Asian Commonwealth countries, when the institutions had to be closed down due to the COVID-19

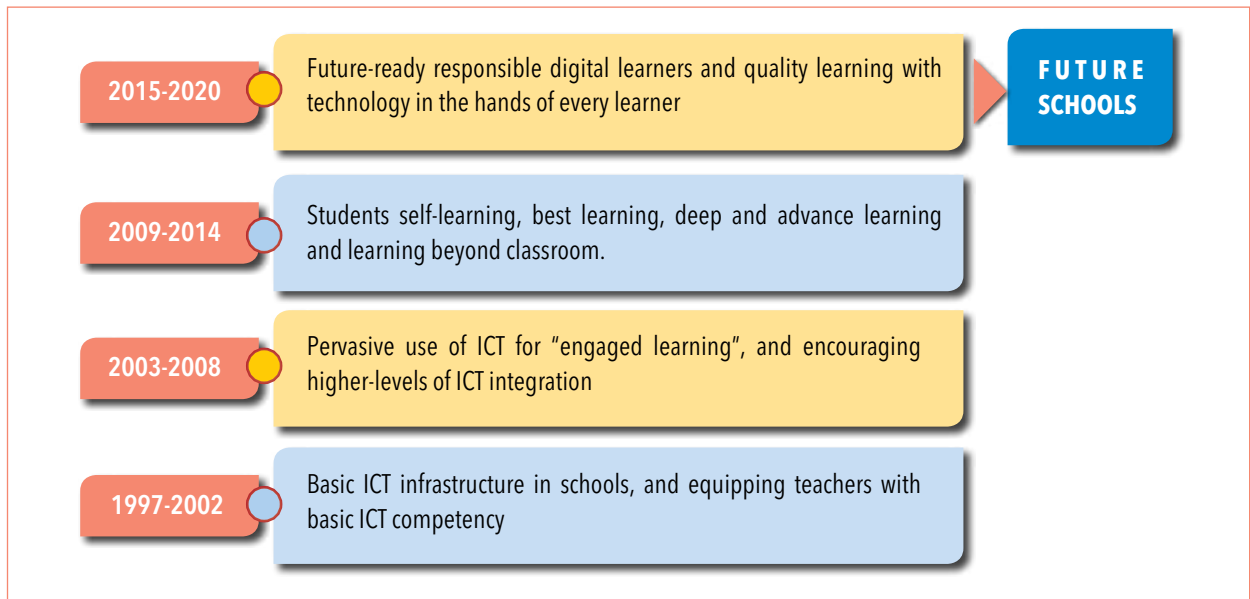


FIGURE 1.2. SINGAPORE'S FOUR-STAGE MODEL OF ICT IN EDUCATION

Source: Mukhopadhyay (2022).

The Sri Lankan ICT in Education Policy implementation was organised in three stages: Stage 1: 2002-03, Stage 2: 2004-05, and Stage 3: 2006-07.⁸ "But the effect of ICT in higher education was dramatically increased from 2009 to 2013. Instead of traditional teaching and learning methods, new technology was introduced into the Sri Lankan higher education sector to produce undergraduates and graduates that can compete in the rapidly changing world" (Prageeth & Udara, 2020, P1).

Several publications by scholars from Pakistan’s higher education institutions indicate the impact of ICT in education in general and in higher

pandemic. Classroom lectures were replaced by online lectures in a webinar (lecture) format and not interactive video conferencing in meeting format through platforms like Zoom, Google Meet, Webex etc. It was more of an *emergency technology response* (ETR). Though many people claimed it to be online education and blended learning, this transition to an online monologue is an apology for blended learning as it is without the power of the blended learning pedagogy.

Blended learning is a scientific instructional design that engages students happily and

8 http://www.infodev.org/sites/default/files/resource/InfodevDocuments_883.pdf

enthusiastically in learning tasks, providing self-regulated learning. This happy engagement leads to improved learning outcomes while inculcating generic graduate skills of collaboration and cooperation, team learning, digital literacy, self-learning skills, etc.

Instant ETR proved it had the power and comfort of technology, hopefully reducing technology 'allergy' and shyness among students and the teaching community. However, the impact of technology integration in education through blended mode can be fully realized only when technology tools and face-to-face learning methods are fitted into an instructional design framework to achieve pre-defined learning outcomes, especially higher-order cognition.

Blended learning has been adopted in experimental modes regularly by teachers in various higher education institutions. However, such innovative efforts are restricted only to innovators and early adopters of innovations (Rogers, 1962). These scattered efforts by a few creative teachers need to be upscaled and made a part of higher education pedagogy. National Blended Learning Policy is necessary for transforming a country's higher education system.

The Bangladesh UGC enacted the National Blended Learning Policy. The COL published Guidelines on Blended Learning (Cleveland-Innes & Wilton, 2018). The Indian UGC has come out with Guidelines for Blended Learning. Though India does not have any documented National Blended Learning Policy, there are important policy statements in NEP (2020) on technology

induction in higher education. UGC circulars that a certain percentage of courses have to be taken online linked to credit accumulation and credit transfers. SWAYAM, with 1,000 courses and 10 million registered learners from different Indian universities, is the fifth largest online learning platform globally (Table 1.1).

Policies bring inclusiveness in transforming the system. Innovators and maverick educators are the torchbearers and path-finders. They create bright islands in the education landscape with research evidence. These path-breaking innovations need to be backed by a well-scripted policy to suit situational variations among the higher education institutions in the Asian Commonwealth countries with adequate flexibility to adapt to the variations of institutions, say, a few reputed institutions in the metropolitan cities and a large number of average institutions in, semi-urban, and rural areas.

This module provides a template for developing a National Blended Learning Policy that can be adopted or adapted to suit the differential conditions and contexts in the Asian Commonwealth countries.

NATIONAL BLENDED LEARNING POLICY STATEMENT IN HIGHER EDUCATION

The National Blended Learning Policy will be spelt out as Policy Goals, Policy Statements, and Enabling Policies.

TABLE 1.1 ENROLMENT, COURSES, MICRO-CREDENTIALS, AND DEGREES OFFERED BY VARIOUS ONLINE EDUCATION PROVIDERS

Agencies	Learners	Courses	Micro-credentials	Degrees
Coursera	45 million	38,00	420	16
edX	24 million	2,640	292	10
Udacity	11.5 million	200	40	1
Future Learn	10 million	880	49	23
SWAYAM	10 million	1,000	0	0

Source: Shah (2019).

POLICY GOALS⁹

The goals of the National Blended Learning Policy are to:

1. Increase the outreach of higher education and improve the transition rate of students from school to post-secondary education.
2. Improve the quality of higher education in the country.
3. Increase the graduation rate and thereby the percentage of the graduate population in the country.
4. Improve student engagement in learning activities, thereby improving learning outcomes.
5. Help students take the onus of learning on themselves and evolve as lifelong self-learners.
6. Help students achieve higher-order learning and emerge as knowledge creators.
7. Help teachers and students align with the global trend of technology-mediated teaching-learning.

NATIONAL BLENDED LEARNING POLICY STATEMENTS

The national policy statements are overarching statements of intentions. Such overarching purposes need to be supported by statements of enabling policies.

Policy Statement 1: All post-secondary (higher) education institutions will adopt Blended Learning in all Certificate, Diploma, Undergraduate and Post Graduate Courses/ subjects.

Policy Statement 2: All higher education students will earn ...(e.g. 20 or 30 or 40%) credits through online education.

ENABLING POLICIES

A few of the enabling policies are stated below under a few major heads. These heads of enabling policy statements are indicative. Countries can add, modify, or change them according to their national education policies, national ICT policies in education, and educational and other ecosystems.

1. INSTITUTIONAL READINESS

Enabling Policy Statement 1: *Every Higher Education Institution (HEI) will develop institutional readiness for adopting a blended learning design.*

The adoption of blended learning will demand a new set of teachers' and students' skills, institutional readiness, and a change prone environment. Like other innovations, blended learning will upset the dynamic equilibrium of the academic processes of the institutions and trigger resistance. Hence, developing institutional readiness for implementing blended learning will be necessary. There are several dimensions of institutional readiness for blended learning.

For example, the Bangladesh National Policy on Blended Learning mentions legal readiness - the need to modify laws and bye-laws governing curriculum formulation, instruction, and assessment systems to suit flexibility, self-learning, self-assessment, own time assessment, and micro-credentials associated with blended learning.

Teacher professional learning and readiness is another vital component of institutional readiness for blended learning. The science of instructional design must find its place in the practices of higher education institutions.

Every institution has a unique culture. Changing from a conventional to a blended learning model is a culture shift. According to Lokuge and

⁹ These are a few exemplar policy goals. Every country must state her own policy goals.

Sedera (2020), cultural preparation is critical in adopting or adapting innovations like blended learning.

Resource readiness is another component. All higher education institutions must have a technology platform to mount courses and a video/web-conferencing facility with stable and robust Internet access to digital devices.

Blended learning is characteristically flexible; it enriches the learning experience by drawing resources from multiple sources. Hence, developing partnerships with sister institutions is another way of developing institutional readiness.

As there is wide divergence and disparities among the higher education institutions, each institution needs to choose the blended learning model¹⁰ appropriate to its context. Partnerships and networking with sister institutions and experts should help in this contextualisation.

Managing institutional innovations - switching from conventional to blended learning - is complex and challenging. Every higher education institution needs a strategic plan for implementing blended learning (Mukhopadhyay, 2021).

2. ICT INFRASTRUCTURE

Enabling Policy Statement 2: *Requisite ICT infrastructure will be developed in all higher education institutions. It will be ensured that all teachers and students have access to digital devices with Internet connectivity.*

Since blended learning is a technology-mediated model, it needs technology infrastructure. Every higher education institution needs to have a technology platform to mount the courses. Several free platforms like MOODLE, Google classroom, Sakai, and Zoomla exist. There are several other paid platforms too¹¹. Every higher education institution will have to subscribe

to a videoconferencing platform and use the interactive meeting mode. Other technology tools that facilitate blended learning include interactive presentation software (for example, Mentimeter, digital textbooks, simulations, video and computer games, online tests and quizzes, and e-portfolios).¹² These need to be available to teachers and students. Teachers and students need to explore the free ICT tools for education (Koech, 2020; Pappas, 2012).

Every higher education teacher will have a personal blog for uploading academic notes on the units she teaches.

3. TEACHER PROFESSIONAL LEARNING AND CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)

Enabling Policy Statement 3: All teachers will be equipped with knowledge about the science of human learning and ICT skills necessary for implementing blended learning.

Teachers are the implementers of blended learning. Hence, all teachers will have to be equipped with pedagogical knowledge and technology skills to implement blended learning. Along with content specialization, higher education teachers will need to be acquainted with the science of human learning. Particular emphasis will be on understanding schools of learning - constructivism, constructionism, connectivism, self-regulated learning, reflexive¹³ and critical pedagogy, and online education pedagogy (Bates, 2016; Guardia, 2016; Marr, 2018; Teachonline, 2020). This theoretical foundation will be reinforced by orientation, demonstration, and reskilling “to internalise blended learning as the new teaching-learning normal and solve problems that facilitate digitalisation” (Lokuge et al., 2019). Yeap et al. (2020) found a “lecturer’s mindfulness and readiness are crucial factors to foster change and increase Higher Education Institution

¹⁰ <https://www.dreambox.com/resources/blogs/6-models-blended-learning>

¹¹ <https://zapier.com/blog/online-course-platforms/>

¹² Technologies for Blended Learning. <https://openbooks.col.org/blendedlearning/chapter/chapter-5-technologies-for-blended-learning/#:~:text=Nevertheless%2C%20digital%20textbooks%20will%20be,in%20online%20and%20blended%20learning.&text=Blogs%20and%20wikis%20are%20online,collaborative%20research%20and%20writing%20activities.>

¹³ Facilitate the development of critical thinking through the emergence of new possibilities for a learner to find meaning in the construction of his or her knowledge. Thus, the pedagogy mobilized ensures that a student goes from understanding the content she learns, to why she learns this content, and to doing what with it. <https://www.igi-global.com/dictionary/reflexive-pedagogy/81329>

commitment for teaching effectiveness.” All teachers will be oriented and trained to:

- Design blended programmes, courses, and unit designs.
- Include digital learning and assessment activities in blended learning designs.
- Design, plan, and use digital tools to support in-class learning, for example, digital presentations, polling tools, clickers, and video and computer games.
- Access and curate appropriate online digital learning resources evaluating the accuracy, relevance, accessibility, attractiveness (attention retention), and effectiveness of OERs.
- Develop and adapt copyrighted digital learning resources according to learners’ needs without copyright violations.
- Design activities for supporting student engagement in acquiring and deepening their knowledge through desktop research.
- Collaborate with other teachers and educational technology professionals to refine blended learning designs to improve learners’ technology-mediated learning skills and learning outcomes.
- Use online and offline digital tools (for example, quizzes, polls, self-assessments, peer assessments, e-portfolios, and peer reviews and give feedback via synchronous and asynchronous modes) for learning assessment to support students’ self-assessment of learning progress.
- Mentor and guide students to adopt digital modes of collaborative learning.

4. CHOICE OF BLENDED LEARNING MODELS

Enabling Policy Statement 4: *Every HEI will choose a Blended Learning Model to suit its context - rural and urban institutes, large or small institutions, uni-or multidiscipline institutions.*

Every higher education institution will choose one or more blended learning models to suit its contextual realities and demands. There are several blended learning models, such as face-to-face, rotational, flex, online lab, self-blend, online driver (Box 1.1),¹⁴ a la carte, and enriched virtual.¹⁵ The face-to-face driver model and the online driver model are the two ends of the continuum of blended learning. Certain blended learning models have been further classified based on the specialisation approach.

BOX 1.1. BLENDED LEARNING MODELS

Face-to-Face Driver Model

As the name suggests, this model is like a traditional pedagogical structure. Classrooms are diverse, and students’ ability levels vary. It provides appropriate challenges to capable students, while those with low capabilities are given remedial skills to accelerate their learning. It blends lectures with remedial learning techniques like tutorials and counselling.

The Rotation Model

Under this blended learning model, students have a set timetable and learn from their teachers’ face-to-face teaching. Later they move to online learning. This model is being used at all levels of education. The rotational model has been classified into station rotation, lab rotation, flipped classroom, and individual rotation.¹⁶

14 <https://www.dreambox.com/resources/blogs/6-models-blended-learning>

15 <https://www.raiseyourhandtexas.org/blended-learning/understanding-different-models-blended-learning#:~:text=Four%20Models%20of%20Blended%20Learning,La%20Carte%2C%20and%20Enriched%20Virtual.>

16 https://www.lisc.org/media/filer_public/99/02/990296e9-9471-45f8-ac5b-5a92babe501a/schoolbuild_additional_resources_blended_learning_design_guidelines.pdf

The Flex Model

The flex model is usually adopted by institutions supporting “non-traditional and at-risk students’ education. In this model, learning material is delivered online to the learners. The teachers or tutors are available for individual consultations and mentoring in their respective rooms. This reversal of the conventional mode (flipped learning) shifts the onus and initiative of learning to students; teachers work as facilitators and counsellors besides designing and/or curating online learning material. The enriched virtual model is very similar to the flex model.

Online Lab School Model

This is the primary online delivery of an entire course. Students can take/complete a course they might have missed in the institution. Students can visit the computer lab for completing their course work and assignments if such facilities are not easily available at home. In this mode, institutions can offer courses where there are no teachers and teaching is done under the supervision of some adults.

Self-Blend Model

In this model, students create their own blending. They attend classes other than what is provided in the institution’s timetable. They complement and enrich face-to-face learning with self-chosen online courses from remote sources and learning in peer groups. Students usually adopt this model with initiative and motivation to achieve higher grades. This model also helps students learn subjects outside the given course catalogue and structure. The self-blend model is very similar to the a la carte model.

The Online Driver Model

This is the opposite of a traditional face-to-face instructional environment. In this model, students receive learning material online and engage in chats with teachers online, although face-to-face interactive opportunities may also be available. This model is useful, especially for students who need more flexibility and take responsibility for their learning.

One blended learning model may not fit all programme subjects or units of the same course. The nature of the content will inform the choice of the blended learning model, availability of ICT facilities, and teachers’ and students’ skills and attitudes towards ICT in education.

5. CURRICULUM RECONSTRUCTION

Enabling Policy Statement 5: *HEIs will reconstruct the curriculum to facilitate the policy goals and align with the features and attributes of blended learning, for example, the flexibility of choices.*

Blended learning aims to improve learning efficiency; its reference point is achieving higher-order cognition. As blended learning moves more and more from face-to-face driven to online driven, the dominance of technology

will increase, changing the learning scenario from teacher to student-centric processes with students taking the onus of learning through the self-regulated learning model (Zimmerman, 2002).

The curriculum will be reformed, enabling students to study one course in a year in one institution and switch to another institution for another course in the following year. There will be “no hard separations between arts and sciences, curricular and extracurricular activities, vocational and academic streams, etc., to eliminate harmful hierarchies among, and silos between different areas of learning” (MoE, 2020, p. 5). Thus, a degree with a liberal combination of subjects will receive the same recognition and equivalence as conventional discipline-based degrees.

To derive the best advantage of blended learning and for achieving higher-order multidisciplinary and interdisciplinary learning, universities will design curricula with flexibility and learnable meaningful units facilitating the collection of micro-credentials adding to the credits.

6. BLENDED PROGRAMME, COURSE, AND UNIT DESIGN

Enabling Policy Statement 6: *Every HEI will adopt blended programmes, blended courses, and blended unit designs.*

Units are the building blocks of papers, courses, and programmes. A programme may comprise three or four courses (for example, physics, chemistry, and mathematics for BSc); each course comprises several papers, each having several units.

HEIs will adopt blended programmes, courses, and unit designs. This implies that a programme may comprise a few courses delivered fully face-to-face and a few others delivered fully online or in different combinations of blending; the same flexibility of choice of blending will be followed in the course and unit designs.

7. BLENDED LEARNING DESIGN AND OER

Enabling Policy Statement 7: *A national repertoire of blended programmes, courses, and unit designs will be created. The blended programmes, courses, and unit designs will be uploaded on a common platform under a CC license. All teachers and HEIs can access, use, and modify the blended learning designs.*

Though each HEI designs its own undergraduate and post-graduate courses, there is a lot of common content in a subject across the universities/institutions. As each institution develops blended programmes, courses, and unit designs, there will be multiple designs on the same or similar units and programmes. The quality of these designs will vary widely. HEIs will benefit from mutually sharing blended learning design resources on a digital platform. It will help save costs and reduce teachers' workload.

Following the fundamental principles of OER, a teacher or a department in another university will be able to use the blended learning design with due acknowledgement with the facility of modifying it to suit the demands of the local situation, depending on the CC specifications, for example, CC-BY and CC-BY-SA.

CEMCA, the nodal agency with the charter for promoting technology-enabled learning and facilitating open education, should consider hosting an inter-country (Asian Commonwealth countries) OER of blended programmes, courses, and unit designs.

8. MODIFYING THE ASSESSMENT SYSTEM

Enabling Policy Statement 8: *The assessment system will be modified to make the best use of blended learning; students will be eligible to take online on-demand tests, collect micro-credentials, and benefit from the assurance-based credit scheme.*

Adoption of blended learning in higher education warrants changing the conventional assessment system. Degree-granting institutions will introduce online tests alongside traditional assessments in an on-demand assessment format. A learner will be able to take online tests approved by the degree-granting university anytime and collect and accumulate credits. Further, students will get multiple opportunities to improve their grades by taking online examinations. With the increasing improvements in and application of artificial intelligence, students can choose an online test for advanced or ordinary level micro-credential certifications.

The assessment system will need to be aligned with the flexibility of the curriculum and blended learning. A learner should be able to collect micro-credentials on her/his own time, create credit equivalents, and ask for university certification.

9. PLANNING AND MANAGEMENT

Enabling Policy Statement 9: *HEIs will develop a plan to implement the National Blended Learning Policy.*

There are often wide gaps between policy intent and impact, and these are universal. There is no reason to assume that enacting a National Policy on Blended Learning will change the learning landscape in HEIs. There has to be a strategic plan and interventions for translating the policy into action.

The prospective implementers react to innovative practices differently. Drawing from Roger's (1962) classification of adopters of innovation (Figure 1.3):

- a relatively small community of teachers and academic leaders -innovators and early adopters, 2.14 and 13.59 per cent respectively - receive innovative practices with enthusiasm.
- Two small communities of laggards (2.14 per cent) and strong resisters (13.59 per cent) resist and refuse to implement the changes.
- A good majority (34.13 per cent) prefer to wait and watch for evidence and then adopt blended learning (early adopters).
- Another about 34.13 per cent, called the late majority, waits to be compelled to implement,

often with the risk of losing the innovative spirit of blended learning.

Innovative practices follow a path comprising of installation or awareness, mental trials and decisions, field trials, evaluation, implementation, evaluation, and institutionalisation (Figure 1.3).

Implementation of blended learning in higher education will need a strategic plan to deal with different types of implementers and monitor the pathway or the implementation process. Adopting innovations like blended learning is a function of a growth mindset (Dweck, 2006). Academic leaders and teachers with a fixed mindset are likely to resist and maintain traditional lecturing practices.

CONCLUSION

In this module, the main argument is the demand for a new pedagogy to suit the learning styles and preferences of 21st century learners, thus fully exploiting the benefits of technology-integrated learning. Blended learning is a potent response to constructing a new pedagogy. This module also flagged the need for a pedagogy that facilitates the development of globally employable higher education graduates and their emergence as thought leaders for research and innovations.

There are cases of individual teachers and institutions in all the Asian Commonwealth countries adopting blended learning, not as

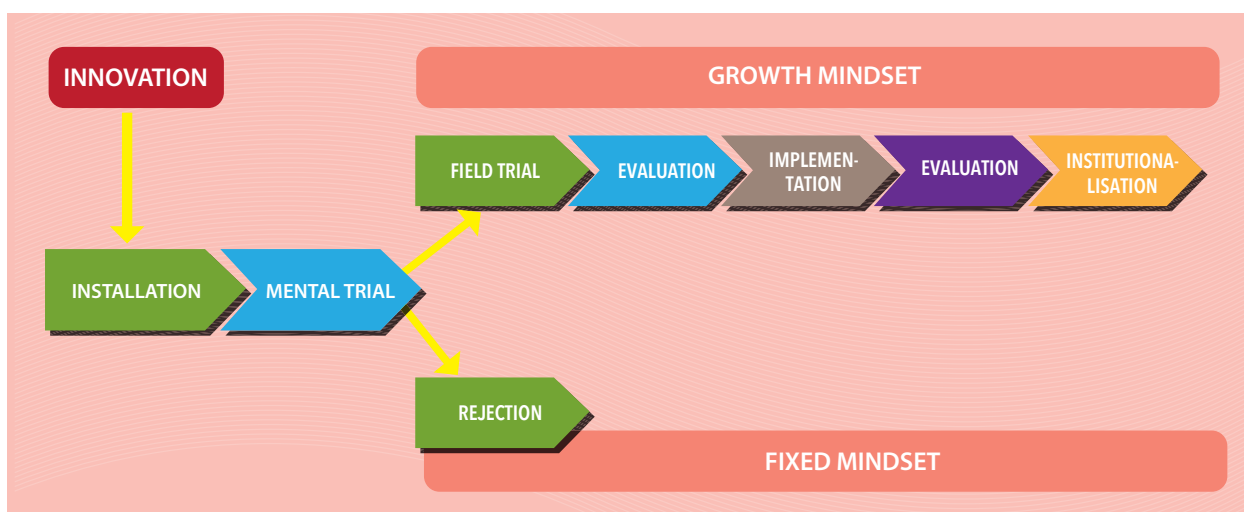


FIGURE 1.3. PATHWAY OF ADOPTION OF INNOVATION

Source: Author

an obligation to any stated blended learning policy goals. This adoption is more experimental by innovation prone teachers in progressive institutions. As the Asian Commonwealth countries aspire to enlarge the proportion of graduates in their respective countries to match the developed countries (OECD countries, for example), they also need to improve the quality of education. Content enrichment alone is not enough. There is also a need to change higher education's instructional and assessment frameworks. HEIs need to adapt to blended learning as a pedagogical policy.

Blended learning is a sub-set of ICT in education, which is a sub-set of the national educational system and national education. Hence, the blended learning policy should be set in the larger canvas of national higher education policies and ICT in higher education policy inclusive of OER policy and repositories.

A clearly articulated blended learning policy is not yet common. The Bangladesh UGC has enacted a National Blended Learning Policy. In higher education, blended learning is practised in Pakistan, Sri Lanka, Malaysia, Singapore,

and Brunei. India has an implicit policy asking students to compulsorily collect 40 per cent credits from online courses from the world's 5th largest online education platform, SWAYAM.¹⁷ However, there is no officially articulated national policy on blended learning in India.

This module provided a template of a National Blended Learning Policy with exemplar policy statements supported by nine enabling policy statements on institutional readiness, infrastructure, human resource development, choice of blended learning models, curriculum reconstruction, modifications in assessments, blended programmes, courses, and unit designs, OER, and strategic planning and management of the implementation of the blended learning policy.

Every country needs to develop its blended learning policy according to the uniqueness and situational demands of the higher education system and the national educational policy's goals. This module provided a template and a framework for developing the National Blended Learning Policy.

17 <https://www.efos.in/news/40-credit-will-be-allowed-through-swayam-platform-99>

MODULE 2

INSTITUTIONAL

BLENDED LEARNING

POLICY TEMPLATE

INTRODUCTION

Popularly, blended learning combines in-person face-to-face learning with online education, especially after the emergence of Internet-delivered online education. Blended learning, according to this definition, is about 30 years old. The serious and rigorous research literature on blended learning started appearing in the early 2000s (Garrison & Vaughan, 2008; Graham, 2006; Owston et al., 2006).

Etymologically, blended learning means when two or more learning tactics and strategies are blended to make learning joyful, exciting, and deepening with evidence of improved learning outcomes (Box 2.1). From this standpoint, blended learning is as old as human learning in its true spirit. Hastana Satak of the Mahabharata

times (more than 2,500 years ago) described human learning as blending teacher lecture or discourse, self-study, peer group or collaborative learning, and experiential learning. Multi-channel learning is usual or common in human learning (Anzalone, 1995).

Research evidence indicates that blended learning enhances student engagement and learning outcomes; it also develops 21st-century life skills of collaboration, cooperation, teamwork, and leadership. Because of its flexibility, blended learning increases access and achieves equity with quality while reducing the cost of education. Hence, there is strong advocacy favouring blended learning at all levels of education, especially higher education (Cleveland-Innes, 2018; UNESCO, 2016).

BOX 2.1. BLENDED LEARNING

Blended learning has been frequently defined as blending the face-to-face mode of learning with online education. Garrison and Vaughan (2008) maintain that blended learning is a “thoughtful fusion of face-to-face and online learning experiences.” During the online and the “technology-mediated components of these learning experiences, students are not required to be physically together in one place but may be connected digitally through online communities” (Cleveland-Innes & Walton, 2018). These definitions assume face-to-face and online education as a single-mode delivery system. There is a large repertoire of over 70 face-to-face and technology-mediated learning methods. Learners blend a variety of learning tactics - more than 70 - from face-to-face and technology-mediated learning repertoires (Mukhopadhyay, 2022). Blended learning should blend face-to-face and technology-mediated learning tactics for meaningful student engagement and pre-specified learning outcomes.

To provide a sound basis for implementing blended learning, the recommended practice is enacting an Institutional Blended Learning Policy (IBLP). HEIs in many countries have developed and approved blended learning policies. Besides creating an institutional obligation, the policies provide a framework for implementing blended learning in HEIs. The module selectively reviewed and analysed 10 IBLPs to create the blended learning policy template and COL's OER policy template.

CONTEXTUALISING IBLP

IBLP must be contextualized as the HEIs vary widely in the guiding policy frameworks, regulatory authorities, and National Qualification Frameworks (NQFs). HEIs in the eight Asian Commonwealth countries are guided and regulated by their respective governments or government-designated regulatory authorities like UGC in Bangladesh, Sri Lanka, and India; the higher education commission in Pakistan; the ministry of higher education in Malaysia and Maldives; and the Brunei Darussalam national accreditation council. The association of Indian universities and the National Assessment and Accreditation Council (India) also play important roles in shaping the quality of higher education in India.

There are several reference points for contextualizing IBLP:

- For Examples, National Educational Policies and Sector Plans, NEP (2020) in India, the Maldives Education Sector Plan (2019-23), and Bangladesh's Blended Learning Policy.
- NQF articulates the expected learning outcomes for a particular level of qualification.
- Graduate attributes.
- Structure of a HEI demonstrating inter-structural linkages.
- Socioeconomic and cultural backgrounds of the beneficiaries and the stakeholders.

Thus, the blended learning policy must be aligned to the national higher education policy

and NQF in the given socioeconomic and cultural backdrop where the institution is located.

IBLP TEMPLATE

This module provides a template for developing IBLP for higher education institutions. A review of IBLPs of 10 HEIs institutions in Ireland, Rwanda, the West Indies, Australia, and the UK (Tables A2.1a & A2.1b in Appendix A2.1) was done for constructing this IBLP template. IBLP should consider a cluster of issues under a few heads:

- **National Backdrop:** National Educational Policy, NQF.
- **Institutional Background:** vision and mission of the institution, graduate attributes, institutional structure, socioeconomic and cultural backdrop, and the rationale for an IBLP.
- **Policy Statements:** Definitions of terms associated with blended learning, policy declaration, policy goals, policy statements, assumptions, and scope.
- **Policy Implementation:** Planning for implementation, roles and responsibilities, leadership, teachers, students, and parents.
- **Related Issues:** Challenges, data protection and privacy, policy analysis, review and impact evaluation.

The IBLP template comprises 15 items. Each item is described and illustrated with examples wherever necessary. An activity follows each such description of items. The output should be an institutional policy on blended learning (IBLP) on completing all 15 activities. Since formulation and implementation of IBLP is a complex and creative endeavour, the institution must ensure the involvement of all stakeholders. Initially, the institution must identify a unit like IQAC or create a committee or team for developing IBLP. The IBLP team will have to draft an IBLP consultation with all stakeholders and steer its implementation. The academic leadership's role is vital in developing and implementing IBLP. Hence, an institution's academic leadership must encourage, facilitate, and participate in preparing IBLP.

NATIONAL EDUCATION POLICY

Every country has an education policy or a framework. For example, the Indian NEP (2020) specifies flexible course choices leading to liberal graduation and the adoption of blended learning. The Indian UGC has provided guidelines for the implementation of a blended learning policy. Thus, Indian HEIs get policy support from NEP (2020), which obliges all HEIs to adopt blended learning.

NQF

NQF is another reference point. Brunei Darussalam, Bangladesh, Malaysia, the Maldives, Singapore, and Pakistan have framed their respective NQFs. The national higher education qualification framework is being prepared in India. To illustrate, there are NQF documents of Sri Lanka (UGC 2015)¹⁸ and Pakistan (HEC 2016)¹⁹ for bachelor's degrees (Table 2.1).

TABLE 2.1. NATIONAL QUALIFICATION FRAMEWORKS OF SRI LANKA AND PAKISTAN

Sri Lanka Level 5: Bachelor	Pakistan Level 5: Ordinary Bachelor
The purpose of this qualification is to prepare a graduate with a broad knowledge of theory, practice, and methodology of disciplines that enables them to bear responsibility in an academic or professional environment.	<p>Purpose:</p> <p>The Bachelor Degree qualifies an individual who applies a broad and coherent body of knowledge in various contexts to undertake professional work and as a pathway for further learning.</p>
Should know about the well-established principles and content in their fields of study.	<p>Knowledge:</p> <p>Graduates with Bachelor Degree will have a broad and coherent body of knowledge, with depth in the underlying principles and concepts in one or more disciplines as a basis for independent lifelong learning.</p>
Should be information literate; what they can do with what they have acquired from wide learning, use appropriate techniques to initiate and undertake an analysis of information, to identify problems and find solutions for them.	<p>Skills:</p> <p>Graduate or a Bachelor Degree will have:</p> <ul style="list-style-type: none"> • Cognitive skills to review critically, analyse, consolidate, and synthesise knowledge; cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas. • Cognitive and creative skills to exercise critical thinking and judgment in identifying and solving problems with intellectual independence. • Communication skills to represent a clear, coherent, and independent exposition of knowledge and ideas.

18 UGC (2015), Sri Lanka Qualifications Framework. https://www.ugc.ac.lk/attachments/1156_SLQF_2016_en.pdf

19 <https://www.hec.gov.pk/english/services/universities/pqf/Documents/National%20Qualification%20Framework%20of%20Pakistan.pdf>

Sri Lanka Level 5: Bachelor	Pakistan Level 5: Ordinary Bachelor
Should display qualities and skills necessary for employment or further learning. Should be able to communicate information effectively to specialists and wider society.	<p>Application of knowledge and skills.</p> <p>Graduate of Bachelor Degree will demonstrate the application of knowledge and skills.</p> <ul style="list-style-type: none"> • With initiative and judgment in planning, problem-solving and decision making in professional practice and/or scholarship. • To adapt knowledge and skills in diverse contexts. • With responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters²⁰.
Should be able to acquire additional competencies, pursue further learning, be a change agent, and assume responsibility for decision making.	

Pakistan spelt out the learning outcomes for graduates in terms of knowledge, skills, and application. Though not classified under knowledge, skills, and applications, the Sri Lanka NQF also mentions learning outcomes in terms of knowledge, skills, and applications.

ACTIVITY 1

IBLP Team: Please explain how IBLP will facilitate achieving the national education, policy goals and the expectations of NQF in your country.

INSTITUTIONAL BACKGROUND

The institutional background should comprise the institution's vision and mission statements, graduate attributes, institutional structure, socioeconomic and cultural background, and the rationale for an IBLP.

VISION AND MISSION OF THE INSTITUTION

IBLP should contribute to the translation of the vision and mission of the institution (Table 2.2).

TABLE 2.2: VISION AND MISSION OF SELECTED UNIVERSITIES OF ASIAN COMMONWEALTH COUNTRIES

	Vision	Mission
Delhi University (India) ²¹	"Be an internationally acclaimed University, recognised for excellence in teaching, research and outreach; provide the highest quality education to students, nurture their talent, promote intellectual growth and shape their personal development; remain dedicated and steadfast in the pursuit of truth aligned with the motto of the University of Delhi 'Nishtha Dhriti Satyam' and serve humanity through the creation of well-rounded, multi-skilled and socially responsible global citizens."	"Foster all-round development of students through a multi-faceted education and sustained engagement with local, national and global communities, and nurture lifelong inspired learners from across the globe in line with our cultural ideal of 'Vasudhaiva Kutumbakam.'"
Dhaka University ²² (Bangladesh)	We seek to create a research and academic institution dedicated to understanding Bangladesh's relations with East Asian and ASEAN countries in multidisciplinary and interdisciplinary areas with cross-cutting implications based on the spirit of promoting areas studies for peace and development.	The mission is to transform the East Asia Study Centre (EASC) based in the University of Dhaka into a centre for the excellence of global knowledge in East Asia and its linkages with Bangladesh and South Asia.
Quaid-e-Azam University Pakistan	Vision²³ "Taking Pakistan forward by providing an affordable, high standard education to students from all corners of the country, creating interprovincial harmony, providing solutions through research relevant to the national needs, towards the transformation of the country into a knowledge-based economy."	Mission²⁴ <ul style="list-style-type: none"> • Functioning as a research oriented institution dedicated to academic excellence, open-mindedness and equality. • Maintaining and fostering highest moral and practiced values while teaching students to seek knowledge logically, be imaginative, and converse effectively to meet the promising needs of society. • Ensuring and supporting faculty and staff to continue their professional and intellectual development. • Helping society through creating harmony between people by bringing them together from every corner of the country.

This Blended Learning Policy is committed to providing flexibility in course choices, learning resources and strategies, joyfully engaging learners in learning activities, and improving learning outcomes. The institution encourages and supports teachers and students in adopting blended learning.

21 <http://www.du.ac.in/index.php?page=Vision-and-Mission>

22 https://du.ac.bd/mission_vision/320

23 <https://qau.edu.pk/vision-statement/>

24 <https://qau.edu.pk/mission/>

ACTIVITY 2

IBLP Team: Please carefully study the official statement of vision and missions of (your) institution and explain how IBLP will contribute to the translation of the vision and mission into action.

GRADUATE ATTRIBUTES

Graduate attributes are a set of articulations of expected outcomes of the system. For example, UCSI University, Kuala Lumpur has stated effective communication skills, creative and critical thinking abilities, ethical and civic responsibility, knowledge of disciplines, interpersonal skills, lifelong learning, engaged global citizen, leadership, entrepreneurship and management skills as the nine graduate attributes.²⁵ UCSI University further elaborates each attribute into micro-skills (Appendix A2.2). For example, effective communication skills are described as “The ability to present information in a highly coherent manner across different contexts:

- To speak proficiently
- To convey written information competently
- To utilise various information technology skills
- To present information precisely and accurately.”

According to UGC (India)²⁶ a graduate of an Indian higher education institution should demonstrate comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study; have the ability to express thoughts and ideas effectively in writing and orally; apply analytic thought to a body of knowledge; analyse and evaluate the reliability and relevance of evidence; apply competencies to solve different kinds of unfamiliar problems; draw valid conclusions and support them with evidence and examples; develop research skills of asking relevant questions and recognize cause-and-effect relationships; analyse, interpret, and draw conclusions from quantitative/qualitative data; plan, execute, and report the results of an experiment or investigation; work effectively and respectfully with diverse teams; use ICT in a variety of learning situations; work independently and identify appropriate resources required for a project; effectively engage in a multicultural society and interact respectfully with diverse groups; embrace moral/ethical values in conducting one’s life; demonstrate leadership readiness and qualities; and acquire knowledge and skills, including “learning how to learn,” that are necessary for participating in learning activities throughout life.

A careful analysis shows that curricular content contributes to only one of the graduate attributes, “Knowledge of Disciplines” (UCSI University, Kuala Lumpur) and “comprehensive knowledge and understanding of one or more disciplines” (UGC, India). Graduate attributes are developed through instructional and learning assessment activities and co-scholastic, co-curricular activities, and incidental learning from the institutional environment.

²⁵ <https://www.ucsiuniversity.edu.my/campuses>

²⁶ UGC (no date), Learning Outcomes-based Curriculum Framework for Undergraduate Education. https://www.ugc.ac.in/pdfnews/4598476_LOCF-UG.pdf (pp 2-4).

ACTIVITY 3

IBLP Team: Please spell out how IBLP will help achieve some of the graduate attributes specified by the institution and national authorities like UGC or HEC.

Institutional Structure

In the same country, universities are classified as research-intensive and teaching-intensive. Colleges are classified as constituent colleges, affiliated colleges, and autonomous colleges. These structural differences in colleges and policies, rules and regulations, funding procedures, quality assessment and control, and accreditation norms are significant influencers of choice and adoption of innovations like blended learning.

Socioeconomic and Cultural Backdrop

The location of the institutions - metropolitan cities, urban, semi-urban, or rural areas and students' socioeconomic background significantly determine access to technology and digital skills. For example, electric power supply and the reliability of Internet connectivity vary considerably between metropolitan cities and rural areas. Students' access to Internet-enabled digital devices differs due to their economic situation and the location of their homes and colleges or universities.

ICT skills of teachers, their attitudes and disposition to technology-enabled learning, their learnability, and their access to technological devices and the Internet are other influencers in implementing blended learning.

Academic leadership is the most critical determinant of any change in HEIs. The orientation and beliefs of the head of the institution about technology-enabled learning significantly change the processes of planning, executing, evaluating, and reorienting technology-enabled learning, namely blended learning.

ACTIVITY 4

IBLP Team: Please critically analyse and comprehensively document the context in which the institution is situated. The IBLP document must include contextual descriptions of:

- a. Type of the higher education institution - university or college, or any other post-secondary institution;
- b. Size of the institution - number of affiliated, constituent, and autonomous colleges associated with the university, number of programmes and courses, number of students and teachers;
- c. Institutional infrastructure, especially ICT facilities and Internet connectivity and digital resources in the institution;
- d. Teachers and students' ICT skills and access to Internet-enabled digital devices; and
- e. Students' socioeconomic background, their career aspirations, and gender equity.

Understanding and documenting the context helps choose a blended learning model (Box 2.2) that is implementable in a given situation.

RATIONALE FOR IBLP

Given the heterogeneity in their backgrounds, IBLP should help students learn to fulfil the mandates of NQF and graduate attributes. The drafting team must document its arguments - how IBLP will help a student fulfil curricular expectations, qualification frameworks, and graduate attributes.

ACTIVITY 5

IBLP Team: Please document the rationale for developing and adopting an IBLP, Definitions of Terms Associated with Blended Learning

Since IBLP must mean the same thing to all stakeholders in the institution – students, teachers, leadership teams, and parents, the IBLP drafting team must define all the terms associated with blended learning used in the IBLP document. Some of the important terminologies are:

1. **Blended Learning-** Blended learning has been defined as “the thoughtful fusion of face-to-face and online learning experiences” (Garrison & Vaughan, 2008, p. 5). According to Graham (2006, p. 5), “Blended learning systems combine face-to-face instruction with computer-mediated instruction.” It is not a mere mix of online and face-to-face modes, but it refers to a well-planned combination of meaningful activities focusing on learning outcomes.
2. **Flipped Learning** technically means turning over or flipping the sequence of learning events. The usual sequence is (a) students listen to the teacher in the classroom; (b) they follow it up by reading at home or doing their homework. In flipped learning, this sequence is reversed. Students learn in advance at home, followed by learning in the classroom. This sequencing has also been termed individual learning at home, followed by group learning in the classroom (Mukhopadhyay, 2022).
3. **Hybrid Learning Model: Some students attend classes in person in the Hybrid Learning model,** while others join the classes virtually. Educators teach remote and in-person students simultaneously using video conferencing tools. In some cases, hybrid classes include asynchronous learning elements like online exercises and pre-recorded video instructions to support face-to-face classroom sessions.
4. **Blended Programme- a programme as a UG or PG course in science or humanities. Blended learning programmes** incorporate both online and on-campus study in the constituent courses. Students take part in online assignments, discussions, and collaborative projects with faculty members and classmates. They come to campus for one intensive on-campus meeting following a fixed schedule.
5. **Blended Courses-** A course is a component of a programme. For example, physics is a course of a BSc programme. “A blended course is designed such that some in-class time is substituted by equally meaningful online activities. This means that the in-class and online portions of a course are complementary and have been thoughtfully combined to meet the learner’s needs and the course’s goals.”²⁷ Some blended courses often have a fixed number of classes that learners need to attend in a college or university. They combine online study with on-campus classes or attend an organization where they can do research or get involved in an internship or apprenticeship.
6. **Face-to-face Learning:** Face-to-face learning is an instructional approach where a teacher teaches a group of students at a designated place and time, transacting the prescribed courses and curriculum. Face-to-face learning allows synchronous interaction between students and teachers and among students.
7. **E-Learning:** E-learning delivers learning and training through electronic devices such as computers, tablets, and even cellular phones connected to the Internet. This makes it easy for users to learn anytime, anywhere, with few restrictions. E-learning is training, learning, or education delivered online through computers or other digital devices.

27 <https://tlss.uottawa.ca/site/what-is-a-blended-course#:~:text=A%20blended%20course%20is%20designed,the%20goals%20of%20the%20course.>

- 8. Synchronous Interaction** involves the learners and instructor being present face-to-face or online simultaneously and communicating in real-time. Synchronous interaction is not implementable in every situation, but it is the only solution when live interaction is essential. However, the learners can get immediate feedback since it allows real-time interaction.
- 9. Asynchronous Interaction: Asynchronous** interaction refers to the interaction that occurs at different times, not in real-time. This is the primary form of interaction in computer-mediated communication. This form of interaction is often closely associated with distance learning as it provides plenty of flexibility to the learner in the online learning environment. The advantages of asynchronous interaction include flexibility, time to reflect, anonymity or pseudonymity, no time-zone constraints, situated learning, and cost-effectiveness. Numerous tools can be used for asynchronous interactions like emails, bulletin boards, newsgroups, web pages, collaborative workspaces, and blogs (weblogs).

These are just a few sample terminologies. There are many other terminologies associated with blended learning.

ACTIVITY 6

IBLP Team: Please undertake desktop research to identify terms associated with blended learning and define each term referring to authentic sources. The definitions of the terms should be unambiguous.

POLICY GOALS

The IBLP document should spell out the policy goals – what the institution can achieve by implementing IBLP. The drafting team may draw the policy goals from the robust body of research on blended learning, shedding light on the benefits and challenges (Box 2.2) (Namyssova et al., 2019).

BOX 2.2. BENEFITS AND CHALLENGES OF BLENDED LEARNING

1. Blended learning is more effective than face-to-face and online learning (Bernard et al., 2014; Brodersen & Melluzzo, 2017; Means et al., 2013; Stockwell et al., 2015).
2. Students enrolled in blended learning courses perform better than face-to-face or online methods (Means et al., 2010; Smith & Hill, 2019).
3. Students find overall satisfaction in blended learning courses than face-to-face lecture mode (Martinez-Caro & Campuzano-Bolarin, 2011).
4. Students feel more independent and find opportunities to progress at their own pace (Caulfield, 2011; Glazer, 2012; Linder, 2017).
5. Students prefer blended learning because it involves students in “active learning through diverse learning approaches that include active peer communication, processing the information gained by constant self-reflection and checking their understanding, organising their knowledge, and making connections with what they already know” (Glazer, 2012, p.3).

CLEVELAND-INNES (2018) COUNTED FIVE BENEFITS OF BLENDED LEARNING:

1. Opportunity for collaboration at a distance.
2. Increased flexibility: Allows students to learn anytime, anywhere with the possible support of in-person engagement.
3. Increased interactions: Offers better opportunities for synchronous and asynchronous interactions between students and teachers and among students.
4. Enhanced learning: Improved engagement helps students achieve higher levels of learning.
5. Learning to be virtual citizens: "Learners practice the ability to project themselves socially and academically in an online community of inquiry. Digital learning skills are becoming essential to lifelong learners, and blended courses help learners master the skills for using various technologies" (P5).

INSTITUTIONAL BENEFITS OF BLENDED LEARNING

Research studies have also shown the institutional benefits of adopting BL.²⁸ Dziuban et al. (2011) maintain that blended learning provides opportunities to enrol more students without expanding the classroom space, thus increasing access to higher education. As students enrolled in blended learning courses perform better (Means et al., 2010; Smith & Hill, 2019), blended learning enhances institutional effectiveness.

Thus, the policy goals may be stated in terms of students and teachers, and institutional benefits, for example:

1. Students will be able to deepen their knowledge through peer communication, reflecting on and comparing their new knowledge with existing knowledge.
2. Students' learning outcomes will improve.
3. Students will be able to engage more deeply in learning activities and be more satisfied.
4. Students will feel more independent in progressing at their own pace.
5. Students will be able to engage in collaborative learning across distances.
6. Students will learn self-regulated learning and evolve as lifelong self-learners.
7. Students will access learning OERs from across the globe.
8. Students will develop as global citizens.
9. The mechanical workload of teachers will reduce freeing time for creatively developing the instructional design.
10. Teachers will empower students by facilitating students' self-learning and group-based and technology-enabled learning.
11. The institution will increase access to higher education without increasing the expenditure proportionately.
12. The institution will develop as a learning organization

²⁸ Morgan, P. (2021). Key benefits of blended learning in higher education. <https://www.software2.com/resource-centre/remote-learning/blended-learning-benefits>

ACTIVITY 7

IBLP Team: A few sample policy goals are given above. Given the institution's policy framework, NQF, and socioeconomic and cultural background, the IBLP drafting committee should state the IBLP's goals in terms of benefits for students, teachers, and the institution.

POLICY STATEMENTS

Three exemplar policy statements:

- **Policy Statement 1:** Blended learning will be the pedagogical policy of the institution.
- **Policy Statement 2:** The institution (university/faculty of/ department of ... /college) will adopt blended learning in all or selected programmes, courses, and units in all subjects and at all levels (for example, UG, PG, MPhil, and doctoral).
- **Policy Statement 3:** Every student will take ... per cent of the course online.

ACTIVITY 8

IBLP Team: Please make policy statements for your institution to meet the policy goals in keeping with your institution's vision and mission(s).

ASSUMPTIONS

For IBLP's formulation and successful implementation, certain assumptions must be listed and checked for validity. Some of these assumptions are: students have digital literacy and skills and access to Internet-powered digital devices; teachers have the skills and appropriate attitude to adopt blended learning, and the institution has a technology-friendly ambience where the staff is ready to learn and use technology for teaching-learning processes and other activities at the institution.

Another set of assumptions is that all students and teachers have digital identities and regularly use emails, WhatsApp, and Facebook; they collaborate and help each other through group chats via WhatsApp / Facebook / Telegram groups.

The institution will provide online classes through Google Meet, Zoom, CISCO Webex, Jamy, Talky, Lifesize, and Toasty platforms for online classes and virtual discussion forums.

ACTIVITY 9

IBLP Team: Please state the assumptions about infrastructure and institutional arrangements, students' skills, attitudes and behaviours, and likely reactions of teachers, students, and the leadership team to blended learning. Please include your assumptions about parents' reactions, support, and resistance to blended learning and any other assumptions relevant to the situation.

SCOPE

IBLP must state the scope of the policy. For example, unless there is sanctioned exemption supported with reason, under IBPL:

- All programmes will be reviewed and redesigned as blended programmes;
- All courses will be reviewed and converted into blended courses;
- All units in all courses will be transacted through blended learning; and
- All students and teachers in all courses and programmes will adopt blended learning.

ACTIVITY 10

IBLP Team: Please specify the policy scope specific to your institution.

ENABLING POLICY STATEMENTS: PLANNING FOR IMPLEMENTATION

The policy statement supported by assumptions and scope should be followed by a set of enabling more action-oriented policies and statements of a plan for implementation.

Implementing IBLP will require human, material, and financial resources. The institution will have to make provisions for online learning infrastructure, develop a repertoire of learning resources, especially OER based resources, train teachers, and create an overall atmosphere of technology-integrated education. A few exemplar implementational policy statements are:

1. The institution will involve all relevant stakeholders in formulating IBLP, especially teachers and students.
2. The institution will launch an advocacy programme or campaign to generate awareness and benefits about blended learning among students, teachers, and parents, thereby generating a supportive atmosphere for adopting blended learning.
3. The programmes, courses, and units will be reviewed and remodelled into blended programmes, blended courses, and blended units.
4. The institution will develop infrastructure, study material, technical support, and uninterrupted broadband connectivity.
5. The institution will live-stream face-to-face classes for students who cannot attend classes physically so that they may learn through digital devices from wherever they are located.
6. All students, teachers, and staff members will access personal digital devices with Internet connectivity 24x7. The institution will adopt extended and flexible working hours to increase students' and teachers' access to Internet-enabled devices.
7. Teachers will be provided training in ICT skills and blended learning.
8. All students will access relevant e-learning resources, especially those available in the OER repositories, to achieve the desired learning outcomes.
9. Teachers will create and access online resources, especially OERs, to guide and facilitate students' benefits from blended learning.
10. Learning resources and assignments will be accessible online. Students can access them at any convenient time.
11. Students will submit their assignments online on time for teachers' evaluation and feedback.
12. The institution will set up an institutional mechanism for monitoring and quality assurance of blended learning.

ACTIVITY 11

IBLP Team: A few enabling statements for implementing IBLP. The IBLP drafting team will state the enabling policies that should work as an implementation plan specific to the institution's situation.

ROLES AND RESPONSIBILITIES

Several stakeholders are involved in developing, implementing, reviewing, evaluating, and modifying IBLP. It is necessary to carefully identify and document the role of the institutional leadership teams, teachers, students, and parents. A few sample roles and responsibilities are:

LEADERSHIP

The leadership team's role is to create the necessary ICT infrastructure, learning resources, and academic environment to facilitate developing, implementing, reviewing, and evaluating the blended learning policy.

The leadership team needs to create an institutional mechanism like the IBLP implementation committee comprising the head of the institution, deans and HODs, registrar and controller of examinations, and the internal quality assurance cell, wherever applicable, for developing, implementing, monitoring, and reviewing progress in IBLP's implementation. Deans of faculties and heads of the constituent departments are responsible for developing blended programmes; HODs will develop blended courses involving the teachers.

The deans and HODs, in their capacity as teachers, should implement blended learning in their subjects and classes as pacesetters.

The leadership team should work with teachers and encourage them to adopt appropriate blended learning consistently. They should also support and help in the professional learning of the academic staff and support staff members wherever necessary. The leadership team should take it upon itself to speak with students and parents, motivating and inspiring them to adopt this new way of learning. The leadership team is also responsible for mentoring, monitoring, and reviewing the development, implementation, review, evaluation, and modification of IBLP.

TEACHERS

Teachers need to understand and appreciate technology to reduce their mechanical workload of repeating the same lecture repeatedly; they should design and develop blended programmes, blended courses, and blended units to provide students with a high-quality (blended) learning experience. Teachers should actively engage themselves in self-regulated professional learning for mastering the knowledge and skills of blended learning and actively participate in the faculty development programmes organized by the institution.

Teachers' role is to engage with students and parents convincing them of the benefits of blended learning, ensuring the meaningful engagement of students with technology-enabled learning, and providing students with timely feedback to help them achieve the standards of the qualification framework.

STUDENTS

Students' roles and responsibilities may constitute ensuring access to Internet-connected digital devices; collaborating and sharing digital resources with peers who may not have access to them; attending face-to-face classes or synchronous online classes from convenient locations; checking asynchronous modes like emails, WhatsApp, websites, and teachers' blogs regularly and actively participating in consulting on online learning resources and in discussion groups; complete online assignments and submit them on time; and regularly interact with teachers in both synchronous and asynchronous modes.

PARENTS

Parents need to provide Internet-connected devices to their children as far as possible; provide a learning space at home relatively free of noise and distractions; mentor and monitor their wards' engagement in their learning tasks and assignments; and ensure a stress-free learning environment at home. Parents should encourage and create opportunities for peer group collaborative learning at home, and educated parents should also engage in the learning tasks with their children.

TEACHERS' ASSOCIATIONS AND STUDENTS' UNIONS

Teachers' Associations and Students' Unions are powerful forces in HEIs in many countries. The teachers' and students' leaders are ascribed to leaders. They carry the power of influencing their peers. The teachers' and students' unions should be involved in formulating and implementing IBLP.

ACTIVITY 12

IBLP Team: Please specify the roles and responsibilities of members of the leadership team, teachers, non-teaching staff, students, and parents. The statements of roles and responsibilities should be specific for policy development and implementation. This may require identifying institutional units like departments, a small group of teachers and students with expertise in certain areas, and individuals.

ASSOCIATED ISSUES

There will be several other challenges, including data protection and privacy, policy analysis, review, and impact assessment.

CHALLENGES

Some challenges:

1. **Creating Acceptability among Teachers and Students:** Teachers and students are used to a certain teaching-learning process. Blended learning will upset this equilibrium. They may resist IBLP or revert to the conventional teaching-learning process. Teachers and students must be involved in developing and implementing IBLP. Advocacy, action research for creating evidence, watching videos, and open-minded discourses will help.
2. **Programme and Course Review and Developing Blended Programmes and Courses:** Undergraduate and post-graduate programmes offered by the colleges (especially autonomous colleges) and universities need to be reviewed and reconstructed into blended programmes and courses. This will demand a new set of skills and a proneness to change.
3. **New Blended Course Design:** Higher education institutions can develop new credit or non-credit blended learning courses, for example, helping students build life skills and developing and assessing their employability skills.
4. **Blended Unit Design:** As a natural follow up to the blended programmes and blended course designs, each unit of a course also needs to be designed in blended learning mode specifying the expected learning outcomes and combination of in-person, technology-enabled (maybe offline), and online learning corresponding in the learning outcomes; and offline and online formative assessment tests and quizzes to self-determine and monitor progress in learning.
5. **Continuous Professional Development of Staff:** Staff members must be trained in blended learning. They can be trained through conventional face-to-face workshops. Alternatively, they can be trained through blended learning. Teachers should be encouraged to take free online courses like TEL MOOC offered by Athabasca University in collaboration with COL. Online, blended learning adds the value of experiential learning - faculty members experience the process of learning, providing them with a metacognitive opportunity.

6. **Quality Assurance of Learning Material:** Learning material plays a vital role in blended learning. A major challenge is for teachers to identify, evaluate, and curate textual, video, and other digital learning materials in offline and online formats available in OER repositories and beyond.
7. **Digital Divide and Generation Gap:** The utilization of digital resources in blended learning is a function of access to devices, ICT skills, and an appropriate attitude. There are digital and generational divides. Students possess higher ICT skills and a positive attitude towards digital learning but lack access. Teachers and institutional leadership teams lack ICT skills and appropriate attitudes but enjoy better access to digital devices (Box 2.3).

BOX 2.3. DIGITAL DIVIDE: FACT CHECK

The author visited a rural college on an OER study mission and met 81 distance education students enrolled in NSOU's teacher education programme. The students regularly attended tutorials conducted by the teachers of the study centre (college teachers) every weekend.

Students did not know that the NSOU website had all textual course material and videos. They were not informed about this. The vice-chancellor also mentioned that not many students knew that they could access online course material, both in textual and video formats, on the NSOU website.

The author asked whether students had Internet-connected phones and could explore the NSOU website. Within a few minutes, all students, except one, were deeply engaged in watching digital course videos on their mobile phones. They accepted and repented, "we wish we knew such good lectures are available we could have watched and listened to anytime, anywhere" (Mukhopadhyay et al., 2018).

All students, except one, had access to devices; this shows the myth about the conventional concept of a digital divide. No teacher accessed and informed the students about the online learning resources, confirming an unfavourable digital skill and attitude divide among the staff members.

BRIDGING THE DIGITAL AND GENERATION GAP IS VITAL FOR THE SUCCESS OF BLENDED LEARNING.

8. **ICT Infrastructure and Institutional Support Framework:** HEIs need a robust ICT infrastructure, especially a stable power connection and Internet connectivity with an adequate bandwidth. Students' access to the Internet and digital devices are significant challenges in rural areas. Technology glitches are not unknown. It is challenging to manage the glitches and fully use technology's potential.
9. **Formative Assessment and Feedback:** As the onus of learning shifts to students, a major challenge will be learning management. Several learning management systems take care of the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programmes, and learning and development programmes through software applications. The major challenge is conducting the formative assessment and providing feedback. Teachers should be prepared to adopt both in-person and online feedback based on formative assessment outcomes.
10. **Personalised Curriculum:** Blended learning allows students to frame their personalised curriculum by choosing credit-linked modular courses, taking online examinations, and collecting micro-credentials leading to certification to fulfil the credit requirements. Managing flexibility is a big challenge. Another challenge is guiding the students to construct a personalized curriculum, focusing on the disappearing and emerging vocations, professions, and students' aptitudes.

11. **Standard Setting and Certification:** Setting sustainable standards is another major challenge in a flexible blended learning environment. Standard setting and advocacy, quality assessment and assurance of every component of inputs and processes, and formative and summative assessments are other major challenges. The IBLP implementation unit or Internal Quality Assurance Cells (IQAC) should be strengthened and empowered to take charge of this domain.
12. **Developing Acceptability and Planning for Implementation:** For IBLP's successful implementation, the acceptability of the policy and plan of implementation by the teachers, students, and parents is necessary. Any top-down approach is unlikely to succeed as higher education teachers are conscious and possessive of their academic autonomy. Hence, blended learning policy formulation and implementation plan should be a participative process.

ACTIVITY 13

IBLP Team: Please identify the challenges specific to your institution and possible responses to those challenges.

DATA PROTECTION AND PRIVACY

The Institutional Blended Learning Policy document should contain detailed statements on data protection and privacy guidelines. For example:

- Staff members will be trained in and advised to keep their devices secure, for example, keep the device password-protected, ensure that the hard drive is encrypted, and keep the operating system up to date.
- Staff and students should be advised not to collect and share personal data.
- Teachers should be oriented to copyright acts lest they unwillingly become victims of plagiarism. Teachers should appropriately acknowledge the source, preferably following APA7 style, including those available in the OERs.
- The institution should protect important data, learning material, online assessment tools, chatbots, discussion forum material, and websites from hacking, cyberbullying, and other sabotaging activities. The institution may need to create a skeleton but competent dedicated IT cell or reskill IT staff members for data protection and privacy.

ACTIVITY 14

IBLP Team: Please identify steps for data protection and privacy.

Policy Analysis, Review: A major challenge is periodic policy analysis, review, and modification. The IBLP implementation unit and IQAC should engage in periodic reviews of the experiences subsuming new developments to make blended learning more effective.

Besides continuous mentoring and monitoring, there should be a formal and professional assessment of the impact of the blended learning policy at certain intervals comparing the actual outcomes with the expected outcomes.

ACTIVITY 15

IBLP Team: Please describe the strategic plan – how you will carry out policy analysis, policy review, and impact evaluation of your Institutional Blended Learning Policy.

CONCLUSION

The institution should create a dedicated IBLP implementation unit or assign the internal quality assurance cell the rights and responsibilities of planning IBLP's implementation. The unit should create a strategic plan in consultation with teachers, staff members, leadership teams, students, and parents for developing IBLP and its implementation plans. Advocacy, orientation and skill development, technology infrastructure provision, and research and development funding are prerequisites for implementing the BL policy.

Despite the evidence that students' learning gains are higher with blended learning, changing the conventional format will not be easy. Teachers and other stakeholders react differently to an innovation; blended learning is no exception. Every HEI has a few innovators and early adopters among its teachers who will be keen to implement and practise blended learning; there will be another good majority, called the early majority, who will accept and adopt blended learning only after they see the evidence; and there will be another group, called the late majority, who will not adopt blended learning unless forced to by a policy and other such commanding methods. There will also be a small group of persons, called laggards, who will refuse to adopt and deliberately make a mess of it to prove the futility of blended learning.

It is a significant challenge for the leadership team to support the innovators and early adopters among the teachers, mainstream the late majority, and arrest the adverse effects of the laggards in implementing IBLP.

The strategic plan should adopt Kaizen to arrest resistance, encouraging and facilitating the innovators and early adopters to implement the policy on a pilot basis to create experience and evidence of the feasibility of adopting blended learning and learning gains and satisfaction among students.

APPENDIX A2.1

TABLE A2.1A: HEADINGS AND SUB-HEADINGS OF IBLPS OF SELECTED HEIS

	University of Kigali ²⁹ Rwanda	James Cook University Australia ³⁰	University Of The West Indies, Cave Hill Campus ³¹	GMIT ³² Ireland	Hugh Baird College ³³ UK
1.	Preamble	Intent	Introduction	Introduction	Statement of Intent
2.	Strategic Direction	Scope	Levels of Blended Learning	Definitions	Definitions of Blended Learning
3.	Policy Statement	Definitions	Quality Elements	Overview	Scope
4.	Guiding Principles for the implementation	Policy	Definitive Policy Statements	Principles	Guidance
5.	Governance and Administration	Blended Learning Approaches	Indicators of success	Academic Standards	Responsibilities
6.	Implementation of the E-Learning Policy	Blended Learning Course & Subject design	Review of policy	Programme design and delivery	General Guidelines and Expectations
7.	Academic Standards	Implement Blended Learning Institutionally		Student Information/ Support	
8.	Infrastructure			Assessment of Students and Requirements	
9.	Student support			Staff Professional Development	
10.	Monitoring and Evaluation				
11.	Privacy and security				
12.	Review of policy				
13.	Quality Assurance & Evaluation				

29 <https://uok.ac.rw/wp-content/uploads/2020/11/UoK-Blended-and-Online-Learning-Policy.pdf>

30 <https://www.jcu.edu.au/policy/learning-and-teaching/blended-learning-policy>

31 https://www.cavehill.uwi.edu/cetl/resources/blended_learning/blended-learning-policy_ch,-august2016.aspx

32 <https://www.gmit.ie/sites/default/files/public/general/docs/online-policy-final.pdf>

33 https://www.hughbaird.ac.uk/user/pages/publications/_downloads/Distance%20Learning%20and%20Blended%20Learning%20Policy.pdf

TABLE A2.1B: HEADINGS AND SUB-HEADINGS OF IBLPS OF SELECTED HEIS

Marino Institute of Education ³⁴ Ireland	Wyke ³⁵ College UK	North Warwickshire and South Leicestershire College ³⁶ , UK	South Thames College Group ³⁷ UK	Kingston Maurward System ³⁸ UK
Context	Purpose	Purpose	Intent	Purpose and Introduction
Purpose	Expectations	Aims of the policy	Scope	Aims of the policy
Benefits	Additional Learning Support	Accessibility to Online Learning	Definitions	Definition of blended learning
Principles	Marking, Feedback and Assessment	Potential Stages of Curriculum Delivery	Principles	Guidance on Approach
Definitions	Training	Related Policies, Procedures and Documents	Blended Learning Procedure	
Policy	Monitoring and Review			Responsibility
Responsibility	Related Documents			
Related Documents				

There are eight identifiable headings: Context, Intent, Scope, Definitions, Role and responsibilities, Principles, Safeguarding and Guiding Principles for implementation.

Context: There is an introductory heading in every IBLP under different terms like Introduction, Context, and Preamble. The University of the West Indies, Cave Hill Campus included Strategic Context, Strategic Imperatives, Definition and Benefits of Blended Learning, Policy Scope and Framework in the introduction. GMIT had the Intent and Objectives of the policy in the introduction, and Kingston Maurward System merged its Purpose with the Introduction. Marino Institute of Education used the term Context and described the present scenario of the institute and why this policy. GMIT included Context as

a sub-item of Overview and explained the legal, policy and strategic Context. To prepare an IBLP, '**Context**' suits best for IBLP.

Intent, Purpose, and Aims: These three words cover the Objectives, Needs or Purpose of the policy. The word '**Intent**' includes Policy statements, Policy Goals, Policy Frameworks, Policy Expectations, and related policies. The intent is used by James Cook University and South Thames College Group. Huge Bride College uses the term Statement of Intent. Marino Institute of Education uses the word Purpose. The North Warwickshire and South Leicestershire College & Kingston Maurward System use the Purpose and Aim of the policy - both words separately.

34 https://www.mie.ie/en/about_us/quality_assurance/policies_procedures/blended_and_online_learning_quality_assurance_policy.pdf

35 <https://wyke.ac.uk/wp-content/uploads/2021/08/Blended-Learning-Policy-v1-10mar2021.pdf>

36 <https://www.nwslc.ac.uk/wp-content/uploads/2021/01/Blended-Learning-Policy-2020-1.pdf>

37 <https://stcg.ac.uk/about/policies-and-procedures/161-blended-digital-learning-policy-2020-21-1/file>

38 https://www.kmc.ac.uk/college/wp-content/uploads/sites/2/2021/01/KMS-070-Blended-Learning-Policy_Accessible_CC_Jan21.pdf

Scope refers to the policy's coverage area or where or for whom the policy will be implemented. Only three institutes (James Cook University, Hume Baird College, and the South Thames College Group) have used this term.

Several terms are used in the IBLPs. Some may be new to students or teachers. Hence, IBLPs define the terms related to blended learning. Out of 10 institutions, six used the term Definitions. The University of Kigali included a Definition of Key Concepts under the Preamble. The University of West Indies included this as a sub-point of the Introduction. So, most institutions define the terms under separate headings.

Roles and responsibilities include the roles and responsibilities of Students, Teachers, Parents, Administrators, Leaders, Subject Leaders, and Supporting Staff to succeed in the policy's intent. Every policy is discussed in this domain but under different headings. The University of Kigali discusses this under the Implementation of the E-learning Policy. Hume Baird College, Marino, and Kingston Maurward discuss Systems separately.

Principles are the main points of a policy. GMIT, the Marino Institute of Education, and the South Thames College Group include principles as an independent heading, but James Cook

University, Australia, treats principles as a sub-point under policy headings - Policy, Principles, Definitive Policy Statement, and Policy Statement. However, Principles are all about academic standards, programme design and delivery, institutional support framework, faculty support and training, student support and accessibility, assessment and training and monitoring and reviewing the policy. Some policies use these terms as separate headings or sub-headings. For example, the University of Kigali discusses Academic Standards, Student Support, and Monitoring and Evaluation as independent items.

Safeguarding includes the safety of various domains, especially for online or remote learning, like Privacy, Intellectual Property, Security and Copyright, Data Privacy or Data Protection, and Students' Health. The University of Kigali includes Privacy, Intellectual Property, Security, and Copyright as separate points. Wykes College mentions General Data Protection Regulations. Other policies do not discuss this issue a lot, which is very important.

Every policy needs **Guiding Principles for implementation, but few policies** (University of Kigali, Kingston Maurward System) focus on this. Other institutions do not discuss this issue, which is significant.

APPENDIX A2.2

A2.2: GRADUATE ATTRIBUTES OF UCSI UNIVERSITY, KUALA LUMPUR, MALAYSIA

<p>Effective Communication Skills</p>	<p>The ability to present information in a highly coherent manner across different contexts:</p> <ul style="list-style-type: none"> • To speak proficiently • To convey written information competently • To utilise various information technology skills • To present information precisely and accurately
<p>Creative and Critical Thinking Abilities</p>	<p>The ability to analyse, assess, and utilise different thinking skills to determine the value of information and ideas:</p> <ul style="list-style-type: none"> • To utilise analytical thinking skills in different contexts • To employ problem solving skills to resolve issues • To think creatively to generate new ideas • To use critical thinking skills to formulate alternative approaches to learning
<p>Ethical and Civic Responsibility</p>	<p>The ability to function as responsible individuals with ethical values who are accountable to the local, national, and international community:</p> <ul style="list-style-type: none"> • To strive for justice, equality, honesty, and integrity in all personal and professional pursuits • To acknowledge and accept common responsibility to preserve the environment and its surroundings • To actively contribute to the development of societal concerns
<p>Knowledge of Disciplines</p>	<p>The ability to demonstrate sound understanding of concepts, theories, and skills with effective application in relevant areas:</p> <ul style="list-style-type: none"> • To possess an in-depth knowledge of the discipline for effective decision-making • To transfer skills across different disciplines • To articulate pertinent interdisciplinary issues • To generate new knowledge in different disciplines
<p>Interpersonal Skills</p>	<p>The ability to work effectively and productively as a member of a group:</p> <ul style="list-style-type: none"> • To interact and collaborate with others • To commit and focus on group tasks or decisions • To uphold the integrity and passion for individual and group work • To acknowledge and appraise the contribution of others
<p>Lifelong Learning</p>	<p>The attitude of having a high regard for and commitment to continuous learning:</p> <ul style="list-style-type: none"> • To actively seek new learning opportunities • To apply reflective thinking to generate new learning • For continuous engagement in learning new knowledge • To learn independently

Engaged Global Citizen

The ability to function in an international context with a deep appreciation for diversity:

- To develop a greater appreciation for cultural and racial diversity
- To communicate effectively in cross-cultural contexts
- To think across national and international borders
- To function in a global environment
- To become more knowledgeable about international current issues

Leadership

The ability to lead in different contexts to innovate and create change:

- To initiate responsible actions to create change for the common good
- To adopt and adapt to change to motivate others
- To initiate the development of new ideas
- To lead with a high regard for ethical standards

Entrepreneurship and Management Skills

The ability to create and restructure a context and/or an organisation to innovate and generate business ideas:

- To evaluate the context and viability of an organisation or business
- To optimise available resources in a constrained environment
- To engage with risks and reality in decision making
- To seek and network with different sources
- To generate new ideas for a new business venture
- To negotiate effectively

Source: <https://www.ucsiuniversity.edu.my/graduate-attributes#>

MODULE 3

THE BLENDED

COURSE DESIGN

TEMPLATE

INTRODUCTION

The 21st century learners need a 21st century pedagogy for developing 21st century skills. Blended learning responds to the pedagogical challenges of educating 21st century learners.

21st-century learners do not necessarily learn the same way as previous generations did, as the new generation has unlimited access to learning resources. Environmental factors continuously excite the brain neurons, leading to new brain patterns. Developments in technology have opened seamless opportunities for interactions and collaborations.

This module deals with the blended unit, course, and programme design. Blended programmes and course designs are the domain of boards of studies and the concerned faculties in universities and autonomous colleges. Blended unit designs are the domain of all teachers. This module, hence, is primarily addressed to practitioners – academic leaders in the faculties, departments, and classroom teachers.

Accordingly, the module is structured in the backdrop of 21st-century learners, skills, and learning with the science of human cognition or taxonomy of educational objectives, pedagogy, and benefits of blended learning and steps in creating blended learning designs. The learning opportunity of the module is further reinforced

with a sample blended unit design on learning taxonomies that is basic to blended learning designs for units in all subjects.

21ST CENTURY LEARNERS, SKILLS, AND LEARNING

The 21st-century learners, 21st-century education, and 21st-century skills have been popular themes of reflection and research by several scholars.³⁹

The ten most commonly observable attributes, expressed in terms of skills, are:

- **Digital Skills:** Digitally better skilled than their parents at home and teachers in the institution; information literate – know where and how to find information; and media literate – competent social media users.
- **Learning Skills:** Prefer to and can learn independently (Mitra, 2003; Zimmerman, 2002) and with peers than being taught and effectively use digital skills to acquire, deepen, and create knowledge (Kozma, 2011).
- **Independence: They want a say in their education** (construct their curriculum) and dislike memorizing and rote learning; they demand the freedom to experiment and demonstrate creativity.

³⁹ Eaton (2011); Heick (undated); Palmer (2015); Sumardi et al. (2020); Law et al. (2002); Schleicher (2015); Jones (undated); Staufer (2021); Ukoh (2020) and others

- **Lifelong Learners:** Understand the fast-changing world and are aware of their self-learning skills. Evolve as lifelong learners with a preference and abilities for inter-disciplinary learning.
- **Assertive and Questioning:** Instead of obedience and submission, they ask questions, verify existing knowledge, beliefs and practices, and assert their views and values.
- **Taking Responsibility:** To make a difference, they take risks and responsibilities and demonstrate planning and management skills and leadership.
- **Thinking Skills:** Can think critically and creatively, and innovatively solve problems.
- **Mindset:** Demonstrate a growth mindset - can learn and can-do attitude and friendly with innovations and demonstrate change proneness.
- **Communication:** Communicate easily with others - both synchronously and asynchronously- across countries, cultures, linguistic groups, and genders.
- **Social Skills:** Collaborate easily with others; flexible and adaptable, and prefer to work in teams.

21st century education is challenged to align with the attributes of 21st century learner-skills. 21st-century education needs to be flexible to allow a choice of subjects and courses; learning at one's own pace, time, and space; learning through digital and conventional media in collaboration and interaction with peers and experts across physical and geographical boundaries, and work in teams. The 21st-century pedagogy must facilitate learners to acquire, deepen, and create knowledge beyond getting knowledge (Kozma, 2011).

There is no single instructional technique that can support all levels of learning. Blended learning has emerged as the 21st-century pedagogy to respond to the challenges of helping 21st-century learners achieve sustainable higher-order learning. The taxonomy of educational objectives will help understand higher-order learning and develop blended learning designs.

TAXONOMY OF EDUCATIONAL OBJECTIVES

Taxonomy is the science of classification. The Benjamin Bloom Committee pioneered this concept in education by identifying and organizing the educational objectives in a hierarchy.⁴⁰ Taxonomy of educational objectives was initially organized at six levels - knowledge, comprehension, application, analysis, synthesis, and evaluation. The six-layer taxonomy is popularly known as Bloom's Taxonomy in the name of the Chairperson of the Committee (Bloom et al., 1956). However, several others contributed to an understanding of human cognition later.

Gagne's (1971) Hierarchy of Learning⁴¹ provides a taxonomic learning structure. Biggs and Collis' (1982) SOLO Taxonomy explains taxonomy in five stages: pre-structural, uni-structural, multi-structural, relational, and extended abstraction. Human cognition needs some content to hold on to and climb from lower to higher orders. This content dimension was missing in Bloom's Taxonomy of 1956. David Merrill's (1983) Component Display Theory (CDT) offers a matrix structure linking different levels of cognition with contents organized in a hierarchy of complexity - facts, concepts, procedures, and principles. Anderson and Krathwohl (2001) came up with a revised Bloom's Taxonomy in 2001, adapting David Merrill's matrix framework (Figure 3.1)

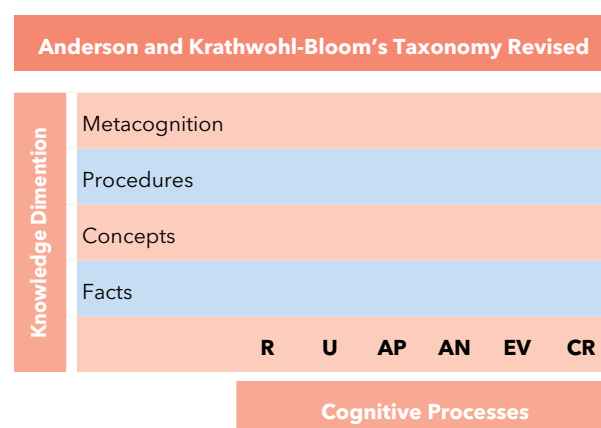


FIGURE 3.1: ANDERSON AND KRATHWOHL'S (2001) REVISED BLOOM'S TAXONOMY
Source: Mukhopadhyay (2022).

40 Initially, the Committee classified human learning into cognitive, affective, and psychomotor domains.

41 Gagne, R. (1971). Learning Hierarchies. NJ: Prentice-Hall.

Anderson and Krathwohl changed Bloom's Taxonomy to Remember (for knowledge), Understand (for comprehension), and Apply, Analyse, Evaluate, and Create (instead of synthesis). They rightly put 'create' as the highest level of cognition. They also changed Merrill's (1983) classification of contents into facts, concepts, and procedures. They dropped principles as one component of content. They added metacognition, justifying it as structural knowledge. The revised version also misses out on certain important contributions of SOLO and CDT. There is, hence, a case for an eclectic taxonomy synthesizing the best elements of all the taxonomies.

Drawing the best from all the taxonomies, this module proposes an eclectic taxonomy with the following contentions:

- The cognitive component should comprise Remember, Understand, Apply, Analyse, Evaluate, Generalize, Construct (synthesis or pre-creation), and Create.
- Creating is multilayer thinking comprising lateral and vertical thinking, divergent thinking, heuristic thinking, and intuitive thinking.
- The content dimension should comprise Facts, Concepts, Procedures, and Principles.
- Metacognition is both cognition and structural knowledge. It should be located at the junction of cognitive and content dimensions.

This module proposes an eclectic taxonomy of educational objectives (Figure 3.2) (Mukhopadhyay, 2022).

Anderson and Krathwohl-Bloom's Taxonomy Revised					
Knowledge Dimension	Create				
	Construct				
	Generalize				
	Evaluate				
	Apply				
	Understand				
	Remember				
		Facts	Concepts	Procedures	Principles
Cognitive Processes					

FIGURE 3.2: ECLECTIC TAXONOMY OF EDUCATIONAL OBJECTIVES

Source: Mukhopadhyay (2022).

This eclectic model is not an alternative or another taxonomy. Hence, a few points need to be flagged here:

- A taxonomic structure indicates a logical sequence of knowledge development.
- Lower-order thinking is necessary for developing higher-order thinking. Hence, to improve learning outcomes, lower-order thinking cannot be ignored. Lower-order thinking provides a sound foundation for higher-order thinking.
- Learning cannot be restricted to lower-order learning; it makes learning superficial and fragile.
- Sustainable deep learning can be achieved only through higher-order thinking. Higher-order thinking must be developed as a habit, and it must be integrated with all learning tasks.

Education's goal is achieving sustainable learning through higher-order cognition. Higher-order cognition cannot be achieved through any single instructional technique. Lectures, the most frequently used technique, facilitate lower-order cognition with low residual learning, primarily supporting auditory learners (Fleming, 2001). Empirical evidence indicates that blended learning is the most promising alternative. It combines the best of face-to-face and technology-mediated learning, supporting learning needs and styles of auditory, visual, kinesthetic, and read and write types of learners (Fleming, 2001).

The taxonomies of educational objectives have been selected for a blended unit design to illustrate this module.

PEDAGOGY OF BLENDED LEARNING

Blended learning has been defined as carefully choosing and blending online and face-to-face learning tactics to achieve desired learning outcomes (Graham, 2013). Depending on the mix of face-to-face and online education, scholars have proposed the Face-To-Face Driver Model, the Rotation Model, the Flex Model, the Online Lab School Model, the Self-Blend Model, and the Online Driver Model as six models of blended learning.



FIGURE 3.3. BLENDED LEARNING THAT IS FACE-TO-FACE DRIVEN TO ONLY ONLINE LEARNING DRIVEN
 Source: Mukhopadhyay (2022).

Blending can have several shades, from primarily face-to-face to exclusively online (Figure 3.3).

Dziuban et al. (2018) did a detailed study of the evolution of blended learning; Cleveland-Innes and Wilton (2018) also deal with the evolution of blended learning.

One form of blended learning is flipped learning. It blends home-based individual learning with group-based classroom learning. “Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject

matter” (Norberg et al., 2011). This sequencing has also been termed individual learning at home, followed by group learning in the classroom (Figure 3.4).

Flipped learning has some significant pedagogical advantages. As students watch and review digital content at home before a class, the lower-order cognition, especially ‘remembering’ and ‘understanding,’ is achieved through self-learning, informal chats with peers, and in some instances, with elders and siblings at home. Higher-order cognition can be built only on lower-order cognition; more classroom time can be devoted to learning activities that facilitate higher-order cognition. Thus, flipped blended learning helps achieve a range from lower to higher-order learning (Figure 3.5).

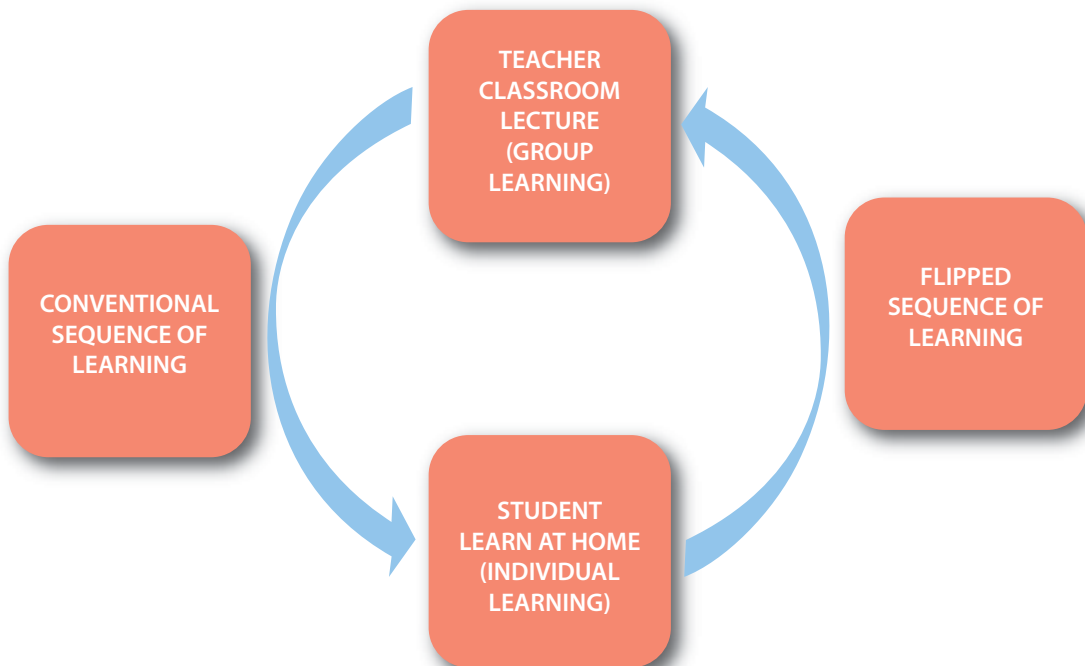


FIGURE 3.4. COMPARATIVE PICTURE OF CONVENTIONAL AND FLIPPED LEARNING SEQUENCES
 Source: Mukhopadhyay (2022).

TEXONOMY OF EDUCATIONAL OBJECTIVES

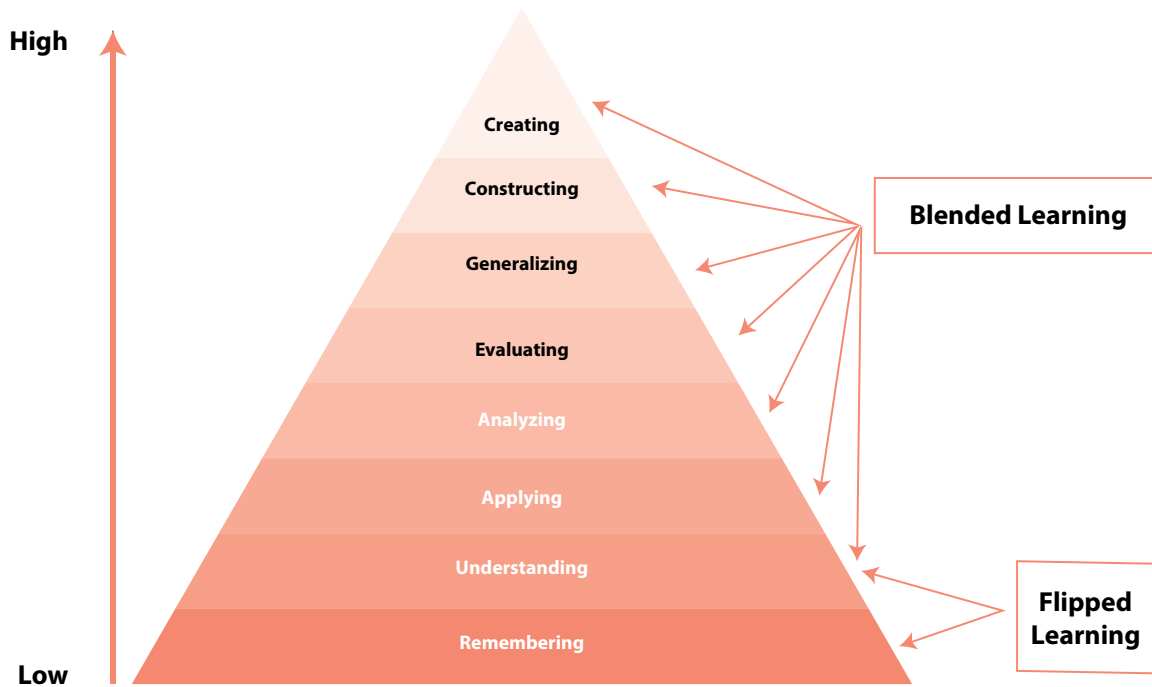


FIGURE 3.5. FLIPPED AND BLENDED LEARNING VIS-À-VIS LEVELS OF COGNITION
Source: Mukhopadhyay (2022).

Pre-class learning lays the foundation for lower-order cognition on which higher-order cognition can be built by directly and deeply engaging students in several learning activities. Several learning activities cannot be accommodated in one period. Hence, planning the entire unit or a sub-unit that may take several periods is necessary.

BENEFITS OF BLENDED LEARNING

Based on research evidence by a large number of researchers,⁴² the following ten benefits of blended learning can be listed (also see Box 2.2):

1. Blended learning is more effective than face-to-face and online learning.
2. Students enrolled in blended learning courses perform better than those learning through face-to-face or online methods.
3. Students find overall satisfaction in blended learning courses than in face-to-face lecture mode.
4. Students feel more independent and find opportunities to progress at their own pace.
5. Opportunities for collaborating at a distance.
6. Provides increased flexibility - allows students to learn anytime, anywhere, with the possible support of in-person engagement. This flexibility helps every student achieve mastery due to freedom from coping with common institutional time and pedagogical modalities. Students can decide to learn following their learning styles and speed and achieve their goals in a different time frame and learning mode.
7. Offers a better opportunity for increased synchronous and asynchronous interaction between students and teachers and among students.

⁴² Bernard et al. (2014); Brodersen & Melluzzo (2017); Means et al. (2013); Stockwell et al. (2015); Means et al. (2010); Smith & Hill (2019); Martinez-Caro & Campuzano-Bolarin (2011); Caulfield (2011); Glazer (2012); Linder (2017); Glazer (2012); Cleveland-Innes (2018) and others.

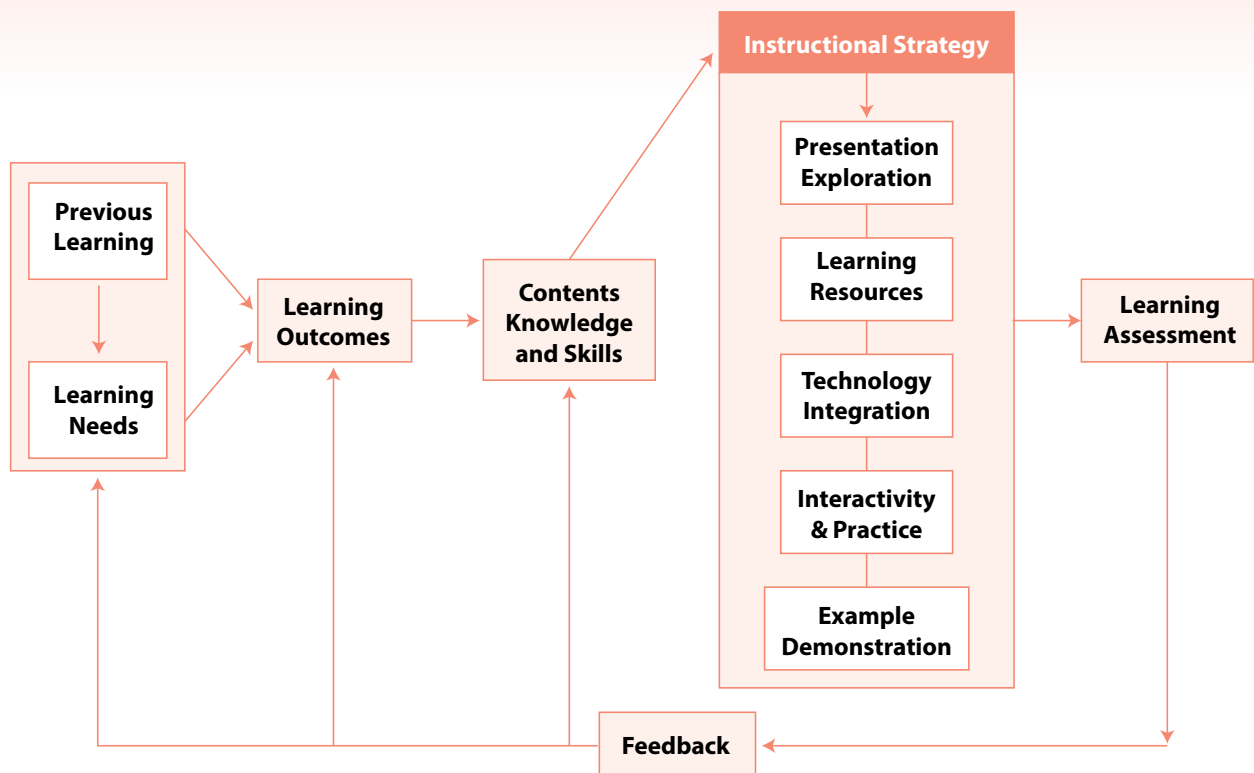


FIGURE 3.6: INSTRUCTIONAL SYSTEMS DESIGN
Source: Mukhopadhyay (2022).

8. Develops digital skills necessary for evolving as lifelong self-learners.
9. Helps learners become virtual global citizens.
10. Learn to collaborate with peers and experts across countries and cultures.

Blended learning also has institutional benefits. HEIs can enrol more students without expanding the classroom space, increasing access to higher education (Dziuban et al., 2011). As students enrolled in blended learning courses perform better (Means et al., 2010; Smith & Hill, 2019), blended learning enhances institutional effectiveness.

INSTRUCTIONAL DESIGN

“Whereas physicians engineer health and architects engineer space, instruction designers engineer human performance” (Van Patten, 1989). Van Patten argues that instructional design is part of design science. “Instruction

design theory offers methods of instruction that will be most likely to foster the desired learning outcomes in different situations.” It derives its logic and substance from several theories like self-regulated learning theories, problem-based learning theories, social interaction theories, simulation theory, and instruction for effect (Reigeluth, 2004). A large number of other scholars have also defined instructional design. An analysis of these definitions indicates some essential components of instructional design -- need analysis, statement of learning outcomes, laying down the pathways of learning - the contents, instructional material, media, learning activities, assignments, group activities, projects, quizzes and self-check tools, and evaluation (Figure 3.6).

There are several models of instructional design. A few oft-mentioned instructional design models are the ADDIE Model, Cathy Moore’s Action Mapping, the Dick and Carey Model, the Kemp Design Model, ASSURE Model,⁴³ Merrill’s First Principles of Instruction Model, Successive

43 ASSURE stands for Analyze Learners, State Objectives, Select Methods, Media, and Materials, Utilize Media and Materials, Require Learner Participation, and Evaluate and Revise.

Approximation Model (SAM), Agile or Rapid Prototyping Model, Gagne's Nine Events in Learning, and ARCS Model of Motivational Design (Mukhopadhyay, 2022).

Thus, a blended learning design should include an assessment of previous learning, the need for learning new knowledge, defining expected learning outcomes, content with a detailed breakdown; learning resources and tactics chosen from the face-to-face and technology-mediated repertoires; and assessment of learning outcomes.

BLENDED COURSE DESIGN

Blended learning has been defined as a carefully planned blending of face-to-face and online learning tactics to enhance students' learning outcomes. This definition can be applied to a blended programme and course design. By implication, students can take some courses in online mode and some others in the face-to-face mode (Cleveland-Innes & Wilton, 2018). Similarly, in blended courses, students may learn some units face-to-face, some other units entirely online, and other units in a combination of face-to-face and online or offline technology-mediated modes. Every unit has several sub-units. Students may study some sub-units in face-to-face classrooms, some through blending, and some through fully online methods. Thus, blended learning applies to programmes, courses, and course units.

The blended course design has been described as a method of delivery that blends online resources and learning opportunities with traditional classroom-based face-to-face teaching methods.⁴⁴ Face-to-face classroom learning is enriched with online learning activities. The blended course design has also been described as "a way to effectively use your time by leveraging in-class and outside-class activities to promote learning."⁴⁵

Theoretically, definitions of a blended programme and course design are valid though this is not recommended. Firstly, there are several learning tactics under each of the face-

to-face and online methods of online course delivery (Mukhopadhyay, 2022). These are not two methods. For example, online education uses watching a video, reading text, online discussions, online tutorials, assignments, assessments, and feedback.

Similarly, teachers use PPT slides for presentation in the face-to-face instructional mode and engage in question-answer interaction, group work, assignments, assessments, and feedback. Thus, in both the modes, blending happens, maybe incidentally. Blended learning brings the best learning tactics from both the sets blending and braiding them for maximum learning gains. Secondly, research shows that students learn and perform better through blended learning than through stand-alone face-to-face or online education. Hence, certain courses in stand-alone face-to-face and certain others in stand-alone online mode are not recommended. Also, this does not provide consistency in learning practices and culture. Ideally, all course units and courses should adopt blended learning with rare exceptions of single-mode delivery. This module provides a template for a blended course design.

PROGRAMME, COURSE, AND UNIT

Defining and differentiating programmes, courses, and papers is not easy. For this module, graduation or post-graduation is a programme. An undergraduate science programme comprises several subjects like physics, chemistry, and mathematics. An undergraduate Arts (BA) programme may include economics, political science, and sociology. A physics course comprises core courses and elective and skill enhancement courses (Figure 3.7). For example, a six-credit (4 theoretical plus 2 practical) core course in Electricity and Magnetism comprises ten units: Electric Field and Electric Potential, Conservative nature of Electrostatic Field, Electrostatic energy of system of charges, Dielectric Properties of Matter, Magnetic Field, Magnetic Properties of Matter, Electromagnetic Induction, Electrical Circuits, Network Theorems,

44 <https://www.hurix.com/steps-designing-blended-learning-courses/>

45 <https://www.ou.edu/cfe/teaching/teaching-support/blended-course-design>

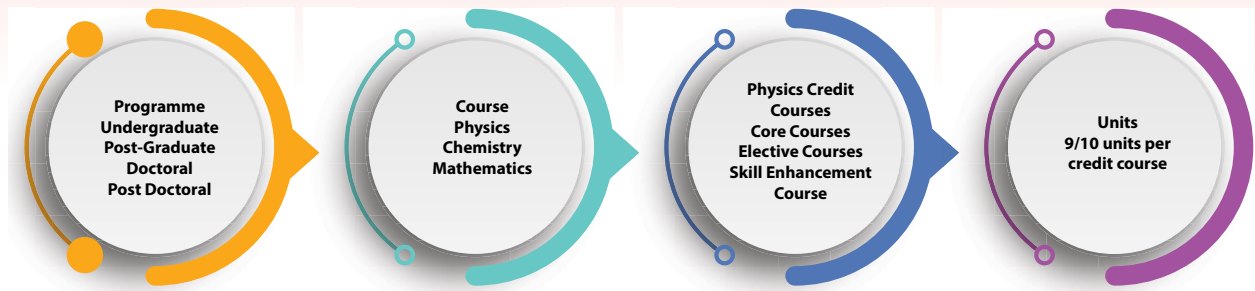


FIGURE 3.7. PROGRAMME, COURSE, AND UNIT
Source: Mukhopadhyay (2022).

and Ballistic Galvanometer.⁴⁶ An economics course as a part of the undergraduate programme in Arts comprises 14 papers and an elective paper. Introductory microeconomics

is a constituent paper of the economics course. Introductory microeconomics consists of six units. Each unit is further made up of several sub-units⁴⁷ (Table 3.1).

TABLE 3.1: SAMPLE PROGRAMME, COURSES, UNITS, AND SUB-UNITS

Programme: BA	Course: Economics	Units Course 1: Introductory microeconomics	Sub-Units: Unit 2 Supply and Demand: How Markets Work, Markets and Welfare
Economics	1. Introductory microeconomics	1. Exploring the subject matter of Economics	1. Markets and competition; determinants of individual demand/ supply
Political Science	2. Mathematical methods in economics-I	2. Supply and Demand: How Markets Work, Markets and Welfare	2. Demand/supply schedule and demand/ supply curve
Sociology	3. Introductory macroeconomics	3. The Households	3. Market versus individual demand/supply
History	4. Mathematical methods in economics - II	4. The Firm and Perfect Market Structure	4. Shifts in the demand/ supply polcurve, demand and supply together
	5. Intermediate microeconomics - I	5. Imperfect Market Structure	5. How prices allocate resources
	6. Intermediate macroeconomics - I	6. Input Markets	6. Elasticity and its application; controls on prices
	7. Statistical methods for economics		7. Taxes and the costs of taxation;

46 https://www.ugc.ac.in/pdfnews/1884134_LOCF-Final_Physics-report.pdf (p27)

47 <https://www.ugc.ac.in/page/model-curriculum.aspx>

Programme: BA	Course: Economics	Units Course 1: Introductory microeconomics	Sub-Units: Unit 2 Supply and Demand: How Markets Work, Markets and Welfare
	8. Intermediate microeconomics - II		8. Consumer surplus
	9. Intermediate macroeconomics - II		9. Producer surplus and the efficiency of the markets.
	10. Introductory econometrics		
	11. Indian economy-I		
	12. Development economics-I		
	13. Indian economy -II		
	14. Development economics-II		
	Elective Papers		

Thus, 'word' is used for describing a subject, for example, physics or economics, and its constituents - credit course. Each credit course comprises several units, and each unit may comprise several sub-units. Arguing in reverse or taking a bottom-up approach, blended unit designs are the building blocks of a blended credit course; blended credit courses will create a blended subject-course design. However, a course has a larger perspective than its constituent credit courses and the constituent units and sub-units of a credit course. For example, graduate attributes as learning outcomes are mentioned under either programme or course designs.⁴⁸ This module provides a generic template for designing blended credit courses and course subjects.

THE BLENDED COURSE DESIGN TEMPLATE

A blended course design template comprises course choice, course data and course faculty, knowledge mapping, course description, course handout or academic not graphic organizer,

statement of learning outcomes, assessment tools and techniques of learning outcomes, learning resources - digital and face to face resources, choice of blended learning models, and blended course design (Figure 3.8).

1. COURSE CHOICE, COURSE DATA, AND COURSE FACULTY

Course data comprises:

1. Programme - UG/PG, science/arts/commerce, etc.
2. Course - for example, physics/chemistry/economics.
3. Credit course - for example, introductory microeconomics/electricity and magnetism.

The specification of course data will depend on whether you plan to create a blended credit course or a blended subject course. The credit course is a component of the subject. For example, introductory microeconomics is one of 14 credit courses. It is advisable to create a blended course where all credit courses are offered through blended learning.

⁴⁸ UGC (2019). Learning Outcomes based Curriculum Framework (LOCF) for Undergraduate Programme B.Sc. (Physics). https://www.ugc.ac.in/pdfnews/1884134_LOCF-Final_Physics-report.pdf (p3)

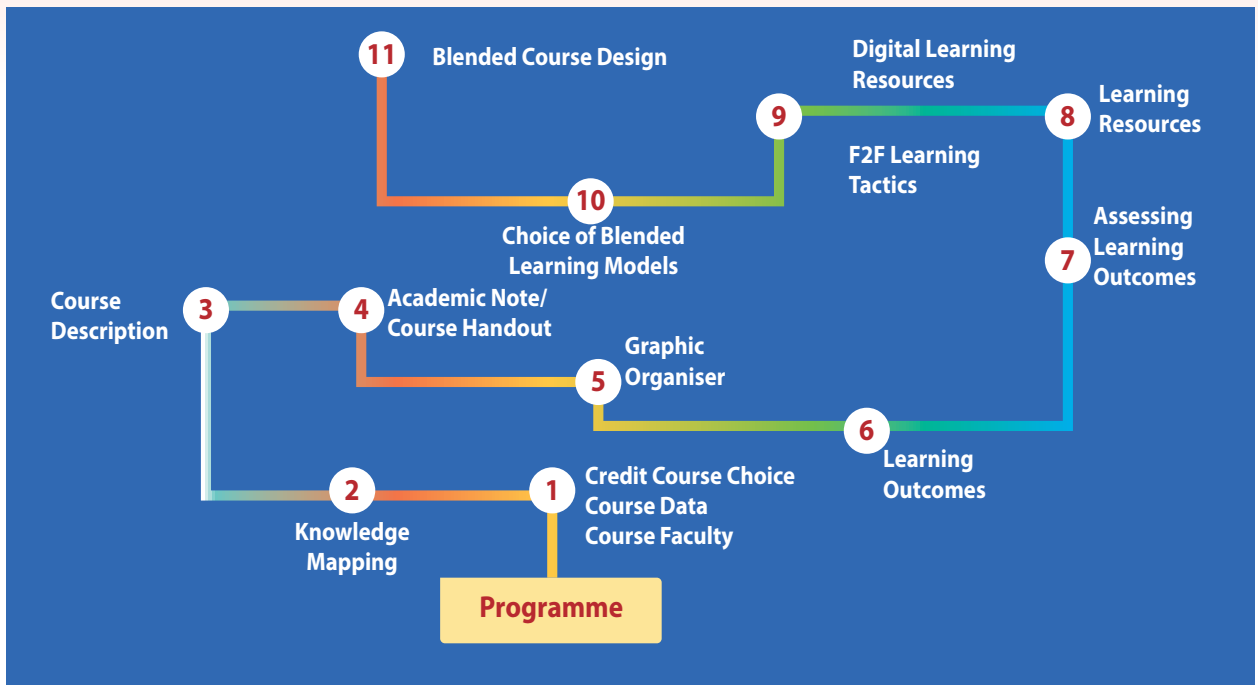


FIGURE 3.8. BLENDED COURSE DESIGN GRAPHIC ORGANISER
Source: Author

PRACTICE ACTIVITY 1

Please fill in the blanks below:

Programme _____ Course Title _____

COURSE FACULTY

Information about the course faculty is helpful in identifying the concerned faculty creating the blended course design. Course faculty information should also have qualifications and subject specializations, years of relevant experience, and preparedness for blended learning (training and experience).

Teaching in a blended mode will change the role of the teacher. Teachers need to assess and be aware of their pedagogical, social, managerial, and technological skills.⁴⁹

PRACTICE ACTIVITY 1A

Please fill in the blanks below:

Name of faculty members _____

Qualifications and specializations _____

Training and experience in blended learning design (please make a few statements) _____

Contact coordinates: WhatsApp number _____
email _____

49 <https://www.uis.edu/colrs/teaching/coursedesign/blendeddesign/>

2. KNOWLEDGE MAPPING

Knowledge mapping is what the students already know (previous knowledge from the higher secondary economics course) and what they are expected to learn from the BA (Hons) in an economics course. Learning is subsuming new knowledge into the existing cognitive structure. Hence, new knowledge must be linked to and built on relevant previous knowledge. This implies mapping the expected prior knowledge and also expected new knowledge to be learnt. Mapping of prior knowledge has been mentioned in several instructional design models like ADDIE (Kurt, 2017), ASSURE (Heinich et al., 1999), and Gagne's Nine Events of Instruction.

Blended course designers should create a knowledge map. Here is an example of a one-credit course on introductory microeconomics from model UG Syllabus in Economics (UGC, undated).⁵⁰ The second column gives the prescribed expected knowledge on completion of the course (Table 3.2). For example, the course designer needs to fill column one, what students should have learned at the higher secondary level about Supply and Demand: How Markets Work, Markets and Welfare (Unit 2). A similar exercise needs to be done for all the 14 credit courses and shared with the students.

TABLE 3.2: PREVIOUS AND NEW KNOWLEDGE (EXAMPLE FROM UG ECONOMICS COURSE)

Expected Previous Knowledge: Please fill this column (only for subject Teachers)	New Content: Unit: Introductory Microeconomics
	1. Exploring the subject matter of Economics: Why study economics? Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce, and how to distribute output; science of economics; the basic competitive model; prices, property rights, and profits; incentives and information; rationing; opportunity sets; economic systems; reading and working with graphs.
	2. Supply and Demand: How Markets Work, Markets, and Welfare: Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus; and the efficiency of the markets.
	3. The Households: Consumption decisions - budget constraints, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects; labour supply and savings decision - a choice between leisure and consumption.

⁵⁰ https://www.ugc.ac.in/pdfnews/9162672_BA-_Hons_-Economics-.pdf

Expected Previous

Knowledge: Please fill this column (only for subject Teachers)

New Content: Unit: Introductory Microeconomics

4. **The Firm and Perfect Market Structure:** Behaviour of profit maximising firms and the production process; short-run costs and output decisions; costs and output in the long run.
5. **Imperfect Market Structure:** Monopoly and anti-trust policy; government policies on competition; imperfect competition.
6. **Input Markets:** Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour markets and public policy.

There may be a gap between expected previous knowledge (taught curriculum) and actual prior knowledge (learnt curriculum). Hence, instead of accepting the taught curriculum as previous knowledge, it is better to assess it. You may (a) ask a few content-based questions, (b) administer a short test, or (c) ask students to discuss in small groups and pairs and report what they already know and what more they want to learn. In case of gaps, it may be necessary to revisit the previous learning to fill the gaps.

PRACTICE ACTIVITY 2

Please note the expected previous learning - what a student should demonstrate as evidence of learning (learning outcomes) before learning the new content. You may consider the higher secondary curriculum to arrive at the expected previous knowledge.

3. COURSE DESCRIPTION AND CONTENT ANALYSIS

There are several possibilities. You may develop a new blended course, for example, photography or modify an existing course, like introductory microeconomics, into a blended course with new and/or modified contents, or you can deliver the course specified by the university through the blended learning mode.

The blended course designer should provide a brief description of the course - an overview of the contents highlighting the important units and credit courses and special features of the course. This should also include teachers' viewpoints about the course, its relevance for students and the discipline to which the subject belongs.

In blended courses, students should be provided with academic notes or handouts. Contents, especially in HASS subjects, are subject to interpretation. A sociological or political theory, history, and economic principles and theories are subjects to interpretation. A left-wing and a right-wing scholar interpret the same principles, theory, and practice differently. Teachers should prepare academic notes and handouts reflecting their worldviews and consistency between what they speak and write. Teachers should upload the handouts on digital platforms with CC licenses for students to access freely.

Content analysis should be done only if the blended course designer finds it necessary to spell it out in further detail, such as a unit into smaller sub-units.

PRACTICE ACTIVITY 3

Please provide a brief description of the course chosen in Activity 1. Please mention the special features of the course and the details of specific units if considered necessary.

Please prepare handouts for each credit course unit and upload them on the institutional platform or your blog.

4. COURSE HANDOUT OR ACADEMIC NOTE

An instructional process is an event of communication. Hence, understanding models of communication is relevant and valuable for teachers. There are several models of communication (Mukhopadhyay, 2022). The Gerbner's General Model deserves a special mention. According to this model, the communicator selectively chooses the contents and interprets them based on her/his worldview based on thinking, knowledge, and experience since childhood. Thinking is how we make meaning of the world.

Interpreted knowledge is easily visible in social sciences, especially history. The same history syllabus unit gets different meanings through right-wing or left-wing philosophies. Students face contradictions when the author of the history book and the teacher have opposite philosophic convictions. It is, hence, important that you create your academic note on the unit. It may not necessarily be a substitute for the textbook. It is necessary to align your views about the unit and your instructional BLD. This is particularly important in social sciences, humanities, and literature. For example, teachers of English literature will have noticed how the history of English literature changed its meaning in the hands of Compton- Rickett (1912) and Legouis and Cazamian (1972) or Balmiers (1974) and Hudson (2015). Every teacher is unique and has a viewpoint on the subject s/he teaches. A teacher stands out because of her or his uniqueness of thinking. Hence, teachers' academic notes are necessary for students to know their perspectives on the subject.

PRACTICE ACTIVITY 4

Please ask yourself - what would you write if you were the textbook's author? Please create an academic note (handout) on each course unit. Instead of distributing hard copies to students like traditional lecture notes, you may post it on an institutional e-platform or your blog, advise students to access the handout from the online source, and encourage them in online asynchronous interactions - students may make observations, ask questions, and complement the note with more information. Students can interact mutually and also interact with you.

5. GRAPHIC ORGANISER

A graphic organiser is a visual presentation of information to be learnt in the unit. Graphic organisers show interconnections among different components of the knowledge to be learnt. There are different types of graphic organizers. Candler (2012) provides a collection of images of 191 graphic organizers for reading. Figure 3.5 is an example of a graphic organizer for this module. Mind mapping, concept mapping, and graphic organizers are often used interchangeably.

Graphic organizers display contents and their relationships. They serve as advance organizers, providing a scaffolding facilitating the subsumption of knowledge in the existing cognitive structure.⁵¹

⁵¹ An advance organizer is relevant introductory material presented in advance in any format of the text, graphics, hypermedia (Ausubel, 1968). Between expository and comparative organizers, Ausubel's comparative organizers are especially relevant here: A comparative organizer help students compare what they already know and what they are going to learn. "It integrate[s] new ideas with basically similar concepts in cognitive structure, as well as increase[s] discriminability between new and existing ideas which are essentially different but confusably similar" (Ausubel, 1968, p. 149).

PRACTICE ACTIVITY 5

Based on the content analysis or contents given in the model curriculum, you may like to draw a graphic organiser visually presenting the contents with their interconnections. This is creative and interesting work for a teacher.

6. STATEMENT OF LEARNING OUTCOMES

Learning outcomes are evidence of learning - what a student will be able to do after completing the course. Learning outcomes' statements are different from course goals. For example, the course goal is "developing the ability to apply;" the learning outcome is "demonstrating the application of knowledge and skills to solve problems." Learning knowledge, skills, and attitudes is a covert process. We can assess learning only through overt behaviour. Hence, the learning outcome should be stated, using an 'action verb' to demonstrate the overt form of covert learning.

A simple example is a student remembers a fact or a scientific formula. By *recalling* that correctly, orally or in writing, the student demonstrates remembering the fact or the formula. Anderson and Krathwohl (2001)⁵² provide a list of action verbs.

Learning outcomes, especially in the cognitive domain, have been classified into lower and higher orders. Lower-order cognition is remembering, understanding, and applying. Higher-order cognition is analysing, evaluating, generalizing, constructing, and creating (Mukhopadhyay, 2022). Lower-order cognition is necessary for developing higher-order cognition. However, lower-order cognition is often fragile learning. Higher-order learning is sustainable and helps in deeper and creative thinking.

A course can have learning outcomes in several domains. The learning outcomes can be spelt out in cognitive, digital, social, and life skills. Learning outcomes are usually stated as 'On completion of the course, a student will be able to ... (use an action verb to produce to complete the sentence indicating the evidence of learning) (Table 3.3).

TABLE 3.3. LEARNING OUTCOMES IN TERMS OF COGNITIVE, DIGITAL, SOCIAL, AND LIFE SKILLS

Cognitive Skills	Digital Skills	Social and Life Skills
On completion of the course, students will be able to		
<ol style="list-style-type: none"> 1. Recollect a fact, a concept or a principle; 2. Explain or describe a procedure or a principle; 3. Apply the knowledge to solve problems, for example, the chemical equation; 4. Critically analyse and compare two or more procedures and principles and take decisions; 5. Create new artefacts, models, ways to solve problems, a new formula, etc. 	<ol style="list-style-type: none"> 1. Effectively use the technological device - a smartphone, a tablet, a laptop, clicker, etc.; 2. Browse the Internet and access relevant learning resources in text, video, images, games, etc.; 3. Download and store relevant learning resources; 4. Upload assignments on the e-platform; 5. Participate in online discussions; 6. Access and respond to online tests. 	<ol style="list-style-type: none"> 1. Collaborate with peers; 2. Work in teams; 3. Take the initiative and provide leadership; 4. Communicate orally and in writing; 5. Solve problems in groups; 6. Demonstrate empathy for each other.

Source: Author

Note: Cognitive skills are built around content. Content is considered facts, concepts, procedures, and principles (Merrill, 1983). Anderson and Krathwohl (2001). added metacognition as knowledge of structures in place of Merrill's principles.

These are a set of exemplar learning outcomes. These are not specific to any course theme.

52 <https://oira.unc.edu/wp-content/uploads/sites/297/2016/06/SLO-Action-Verbs.pdf>

PRACTICE ACTIVITY 6

Please state the learning outcomes using action verbs for students to provide evidence of learning. You may add dimensions other than cognitive, digital, and social skills.

7. ASSESSMENT TOOLS AND TECHNIQUES FOR LEARNING OUTCOMES

Learning assessment has been described as an assessment for learning (formative assessment), assessment of learning (summative assessment), and assessment as learning (metacognition). The formative assessment followed by constructive feedback enhances the learning outcomes. There are methods of direct and indirect assessments of learning outcomes (Table 3.4).

TABLE 3.4. TOOLS FOR DIRECT AND INDIRECT ASSESSMENTS

Direct Assessment	Indirect Assessment
1. Course/homework assignments evaluated using a rubric	1. Course/assignment grades
2. Reflective papers	2. Number of student hours spent on intellectual or cultural activities related to the course ¹⁴⁰
3. <i>Observations</i> of fieldwork, internship, performance, service learning, or clinical experience, with notes recorded systematically	3. Focus group/exit interviews with students, faculty/staff
4. Summaries/analyses of electronic discussion threads	4. Curriculum and syllabi analysis
5. Summary of programmes	5. Observations
6. The report, executive summary, research findings	6. Self-reports
7. Oral tests	7. National surveys (NSSE)
8. Embedded assessment	8. Interviews
9. Case studies	9. Student surveys and exit interviews
10. Capstone projects	10. Self-reports
11. Creation, performance, products	11. Student surveys and exit interviews
12. Course Journals	12. Lecture-embedded questions
13. Teacher Made Tests - objective and essay type	
14. Standardised Tests	
15. Student Portfolio	

Source: Mukhopadhyay (2022).

Objective type tests can serve the purpose of testing lower-order cognition. Reflective essays, performance tests, assignments, creating artefacts, capstone projects, executive summary preparation, desktop research and field surveys, and experiments can assess higher-order cognition. Group assignments and projects are helpful mediums of learning and assessment. It is useful to create an assessment blueprint (refer to Table 3.5).

TABLE 3.5: TEMPLATE OF A BLUEPRINT FOR ASSESSMENT

Objectives	Relative weightage	Multiple-choice questions	Short Answer	Short Essay	Reflective Essay	Case Study	Performance Type
Remember	10						
Understand							
Apply							
Analyse	10						
Critically Evaluate							
Generalise							
Construct							
Create							

PRACTICE ACTIVITY 7

Please create a short test on the chosen course incorporating different assessment tools and mechanisms, not only conventional essay type tests. Also, please search for online quizzes and tests and recommend students take the online tests at their convenience.

8. PEDAGOGICAL CHOICE - WHY BLD AND WHAT FORM OF BLD

The faculty has taught the course for several semesters and years through traditional face-to-face mode, maybe primarily by lectures. There is a need to explain why it is necessary to change the pedagogical choice from traditional lectures to blended learning. What are the likely advantages and challenges, especially for students and parents? (Box 2.2).

There are several models of blended learning. A subject like BA (Hons) economics comprises 14 core courses (6 credits each). Each credit course comprises, say, nine units. Hence, all core courses put together have 126 units. One single blended learning mode may not suit all content. Also, adopting one single form of blending may be monotonous. There are several models of blended learning (Box 1.1). You may have to (and should) choose different blended learning models for different units in different courses in the four semesters.

PRACTICE ACTIVITY 8

Please write a brief note justifying the adoption of a blended learning design for the course chosen (Activity 1), and make a tentative choice of a blended learning model for each unit. You may have to revisit the choice of a blended learning module before finalizing the blended course design.

9. LEARNING RESOURCES - ONLINE AND FACE-TO-FACE RESOURCES

The most significant benefit of blended learning is choosing from a large variety of learning resources. Students depend primarily on prescribed textbooks, lecture notes, and notebooks in traditional education. Online resources, especially OERs, have opened a new vista for students.

FACE-TO-FACE LEARNING RESOURCES AND TACTICS

There are a large number of face-to-face learning tactics (Table 3.6). It is important to determine what face-to-face tactics work and what do not. For example, monotonous long lectures have not effectively created student engagement and improved learning outcomes. But using film clips, animated slides, student group work, projects, field trips, demonstrations, role-plays, case analyses, conferencing and student presentations, discussions on online learning resources like videos retain student attention and engage them actively, resulting in better performance while developing several social and life skills.

TABLE 3.6: LEARNING TACTICS, LEVELS OF COGNITION, AND TECHNOLOGY INTEGRATION

Cognitive Levels	Cluster Titles and Learning Tactics	Digital Tools
ACTIVE RECEPTION		
Remember, Understand	Reading, listening to a lecture, observing a demonstration, listening to an audio recording or educational radio programme, watching a video and educational television programme,	...slides, digital content, computer-aided learning (CAL), Internet browsing, mobile phones
INTERACTION AND COLLABORATION		
Understand, Apply, Analyse, Evaluate	Collaborative learning, consulting teachers and peers, debate-discussion-dialogue, tutorials, student seminars, peer teaching, workshop practice	Video conferencing, online collaborative projects and writing WhatsApp, blogs, emails, e-chats, SMSes
EXPLORATION AND EXPERIMENTATION		
Apply, Analyse, Evaluate, Generalise, Create	Book and literature Review, Reflective Essay and Creative writing, Experiments, and Field Studies, Desktop research and Library Consultation, Project-based Learning, Rapid Appraisal,	Internet Browsing, Desktop Research, Online Surveys, Online Projects, Mobile Apps
EXPERIENTIAL		
Analyse, Evaluate, Generalise, Create	Brainstorming and Buzzing, Case Studies, Creating artefacts-sculpting-modelling, Creative writing, Debate-discussion-dialogue, Drawing and Painting, Drill and practice, Field Visits, Games, Guided Discovery, Histrionics, Mime Acting, Movies, Music, Puppetry- Role Plays, simulation and gaming, Workshop Practice	Video and Computer games Simulations, AR-VR applications.

Units Credit Courses	1	2	3	4	5	6	7	8	9
4. Mathematical methods in economics - II									
5. Intermediate microeconomics - I									
6. Intermediate macroeconomics - I									
7. Statistical methods for economics									
8. Intermediate microeconomics - II									
9. Intermediate macroeconomics - II									
10. Introductory econometrics									
11. Indian economy-I									
12. Development economics-I									
13. Indian economy -II									
14. Development economics-II									

PRACTICE ACTIVITY 10

Please fill in all the cells in the table matrix with one or more blended learning models. The demands of the learning outcomes must guide your choice.

11. FLIPPING AND BLENDING

In a traditional learning situation, students listen to lectures, sometimes interact with teachers and peers, and follow up with reading and writing assignments at home. In flipped learning, the first learning through watching a content video or reading textual material happens at home; this is followed up in the class with interactive group learning. Integrating flipped learning within the blended course design makes learning more effective.

Blending is choosing and combining learning activities from the face-to-face and online repertoires for assuring learning outcomes. The reference point for your choice of learning tactics and their blending will be the course's learning outcomes stated earlier. A useful technique is creating a table like Table 3.8.

TABLE 3.8. CHOICE OF FACE-TO-FACE AND ONLINE LEARNING TECHNIQUES FOR ACHIEVING SPECIFIED LEARNING OUTCOMES

Learning Outcomes	Face-to-face	Online	Assessment
Will be able to explain a particular concept.	Listening to a short lecture.	Watching a video, conducting desktop research, participating in an online discussion forum	Explain the concept; and analyse how the explanation of the concept differs among lectures, videos, and desktop research.

Although there is a large repertoire of learning tactics, a careful choice of face-to-face and digital tools and tactics are critical for the success of blended learning. Based on research and experience, video learning, collaborative learning, and desktop research are recommended as three common learning activities. A teacher may add other learning activities depending on the nature of the subject, for example, demonstration and experimentation in science and surveys, role plays, and case studies in social sciences. Video learning lays down the foundational learning - remembering and understanding faster and better. Collaborative learning helps in deepening knowledge while inculcating several life skills. Desktop research deepens knowledge and facilitates constructing knowledge.

In resource management, there are three concepts - layering, blending and braiding (Willis et al., 2019). In the context of blended learning, watching a video and reading the same content from a book is like layering. When the video and text are interlinked, it becomes blending. When the video and text are compared, contrasted, and synthesized, a new explanation is created; it becomes braiding. Just as the braid is stronger than layers of hair, braided learning is stronger than both blended and layered learning.

PRACTICE ACTIVITY 11

Please create a table in the pattern of Table 3.6 specifying the face-to-face and online learning tactics against each learning outcome and the method of assessment of learning outcomes.

Since one of the hallmarks of blended learning is flexibility, the learning management system should support the blended course design.

LEARNING MANAGEMENT SYSTEM (LMS)

A learning management system (LMS) is a software-based digital platform. As the name implies, LMS helps manage all aspects of the learning process. LMS helps teachers create and deliver content, track student participation, and assess student performance (Brush, 2019; Mardinger, 2021). Students can also participate in interactive sessions like video conferencing and discussion forums. Learning resources can be accessed by most digital devices like desktops, laptops, tablets, and smartphones. Simply speaking, LMS is a large repository of information. Blended course designers can store and track the information in one place, and students can access the learning resources and other facilities with a user login and password. LMS is a tool for teachers to "identify and assess individual and organizational learning goals, track progress toward meeting those goals and collect and present data to supervise the learning process. In addition to delivering content, an LMS can also handle onboarding, compliance and skills gap analysis."⁵³

53 <https://www.shareknowledge.com/blog/what-learning-management-system-and-why-do-i-need-one>

Moodle, Blackboard Learn, and Schoology are some of the popular LMSes used in education. Business organizations use several others. There are primarily four types of LMSes: Cloud-based, self-hosted, desktop applications, and mobile applications. In a cloud-based system, learners can access the system from anywhere, at any time, with a username and password. In self-hosted, the institution must download the software. On the desktop, the software has to be installed. The mobile application helps students use it while on the move and not stationed in one place with access to a workstation.

Since learners can access learning material and other opportunities, they need a username and password. In a self-hosted LMS, students can access the learning resources available only on the institutional server, almost tailor-made for institutional courses - the courseware designed, developed, and uploaded by the teachers. Data security is better than that in the cloud-based platform. However, because of other advantages, cloud-based LMSes are increasingly being preferred. India's SWAYAM, for example, hosts more than 1,000 courses (Shah, 2019) contributed by several institutions and universities, both at school and higher education levels. More than 10 million students from 1,000 universities and about 40,000 colleges access SWAYAM.

CONCLUSION

Adopting blended learning in higher education institutions is not an incremental shift. It warrants an almost culture shift. The success of the cultural shift depends on several factors. It is necessary to prepare well for this shift. Practitioners recommend devoting one semester for preparation. Another vital pre-requisite is engaging oneself in the professional learning of science and blended learning practices and reconstructing the role from speaking (lectures) in a class to a combination of an instructional designer, pedagogue, learning manager, technology manager, and a social relationship manager. Choosing suitable online and face-to-face learning activities and making the best use of them is another critical factor for success. Instead of either nostalgia for face-to-face or adventurism for online activities, the choice should be guided by the course goals and nature of the content, technological facilities, learning styles and preferences of the students and the teacher's style. The online component has the risk of isolation. While implementing a blended course, students must be mentally prepared to switch from passive listeners to active learners; from individual to group learning. They must be kept connected.

MODULE 4

UNIT BLENDED LEARNING DESIGN TAXONOMIES OF EDUCATIONAL OBJECTIVES

INTRODUCTION

Taxonomy is the science of classification. Taxonomy originated in biological sciences and was born out of classifying living organisms - animals and plants. The science of classification then became popular as a useful way of organizing information. Since human learning also happens at multiple levels and domains, some classifications are helpful. In the 1950s, a committee headed by Professor Benjamin S. Bloom of Chicago University (USA) pioneered the classification of learning in three domains - cognitive, affective, and psychomotor. The committee further classified different levels of learning in each domain. The book, *Taxonomy of Educational Objectives: The Classification of Educational Goals*, published in 1956, brought this new term into the lexicon of education.

Bloom's Taxonomy of Educational Objectives (1956) is taught in teacher training courses in most countries. Higher education teachers must understand the taxonomy of educational objectives as a prerequisite for developing blended unit designs.

Bloom's taxonomy was revised in 2001 by Krathwohl and Anderson. There are, however, several other taxonomies used under different titles:

1. Gagne's Learning Hierarchy,
2. Merrill's Component Display Theory,
3. Biggs and Collis' SOLO Taxonomy, and
4. Revised Bloom's Taxonomy by Anderson and Krathwohl.

To better understand the importance and value of the taxonomy of educational objectives, teachers need to understand all the taxonomies. This unit helps in experiencing blended learning while learning taxonomies of educational objectives, which are foundational to blended learning.

LEARNING OUTCOMES

On completion of this module, you will be able to:

1. Explain Bloom's Taxonomy, Gagne's Learning Hierarchy, Merrill's CDT, Biggs and Collis' SOLO Taxonomy, and Mukhopadhyay's Eclectic Taxonomy.

2. Compare and contrast Bloom's original and revised taxonomies of educational objectives.
3. Compare and contrast Bloom's revised taxonomy with Merrill's, and Biggs and Collis' taxonomies.
4. Critically analyse the implications of taxonomies of educational objectives for improving students' learning outcomes.
5. Formulate learning outcomes for a selected theme at different levels of cognition.
6. Develop a reflective essay on taxonomies of educational objectives.

CONTENT ANALYSIS: SUB-UNITS

1. Bloom's Taxonomy of Educational Objectives.
2. Revised Bloom's Taxonomy of Educational Objectives.
3. Gagne's Hierarchy of Learning.
4. SOLO Taxonomy.
5. David Merrill's Component Display Theory.

RECOMMENDED 40-MINUTE INITIAL READING:

Taxonomies of Educational Objectives by Marmar Mukhopadhyay at https://drive.google.com/file/d/14wUI5hMTag_jkQvp2Nd7XGhZQmVoNnXl/view

Or

Chapter 5: Taxonomies of Educational Objectives in Mukhopadhyay, Marmar (2022), *Educational Technology for Teachers; Technology-Enabled Education*, (Available in Hard Cover, Paperback and Kindle Edition on Amazon).

Time Frame: Six periods

Recommended: For regular university courses (B. Ed. and M Ed.)

BLENDED LEARNING DESIGN

In the Learning Design, we will primarily blend six online and face to face learning tactics. These are:

- Video Learning;
- Reading online and offline textual material;
- Desktop research or Internet-based exploratory learning;
- Collaborative learning;
- Practice Exercises; and
- Teacher Talk.

We will adopt the flipped blended learning approach with most video learning and Internet-based exploratory learning at home. Classroom processes will include collaborative or group learning, teacher-mentored practice exercises, and teacher talk and summarization. Students will take online tests for the assessment of learning outcomes.

The video learning and textual reading material will lay the foundation for remembering and understanding the taxonomies. Internet-based exploratory learning and practice exercises will strengthen remembering and understanding further and deepen knowledge with application and analysis. Collaborative learning will add value to further deepening the knowledge through a group-based application, analysis, and knowledge construction. The practice exercises will help apply and create knowledge through reflection and documentation in reflective essays. Teacher mentoring and talk will help individualise and raise higher-level questions igniting learners' minds to explore further and create knowledge (Table 4.1).

PRE-CLASS ACTIVITIES

1. Read either online or printed textual material on taxonomies of educational objectives mentioned above in the recommended reading list.
2. Form groups/teams of five students; choose, if you can, peers whom you would like to team up with. Assign a name to the group of your choice, maybe Bloom, Gagne, Merrill, Biggs and Collis, Anderson and Krathwohl, etc.

TABLE 4.1. BLENDED UNIT DESIGN ON TAXONOMIES OF EDUCATIONAL OBJECTIVES

	Learning Activity 1	Learning Activity 2	Learning Activity 3
BLOOM'S TAXONOMY			
Home	<p>Please watch the video on Revised Bloom's Taxonomy: https://www.celt.iastate.edu/teaching/effective-teaching-practices/revised-blooms-taxonomy/</p> <p>Read the textual material preceding the video on the same URL.</p> <p>Explore the Internet and watch more online videos on Bloom's and Revised Bloom's Taxonomy. Read Bloom's Taxonomy⁵⁴ and Revised Taxonomy⁵⁵</p> <p>For comparison, the video includes Bloom's original taxonomy of 1956. Please feel free to explore the Internet and watch other videos on the theme.</p> <p>While watching the video, please take notes to respond to questions like:</p> <ol style="list-style-type: none"> 1. What are the different levels of cognition in Bloom's Taxonomy of 1956? 2. What are the levels of cognition in the Revised Taxonomy of 2001? What are the revisions? 3. Why do we need a taxonomy? 4. What are your points of agreement and differences with Bloom's Original and Revised Taxonomy? 	<p>Please explore the Internet and create a short academic note on Bloom's Original and Revised Taxonomy with at least five online references.</p>	<p>Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.</p>
Period 1	<p>Please discuss in groups and create group responses to the questions given to you at home.</p>	<p>Please present your group report to the whole class, moderated by the teacher.</p>	<p>The teacher summarizes the proceedings on Bloom's and Revised Bloom's Taxonomy.</p>
GAGNE'S HIERARCHY OF LEARNING			
Home	<p>Please watch this short 5.16-minute video on Gagne's Hierarchy of Learning. https://www.youtube.com/watch?v=6lofSd0o7iY</p> <p>Please explore the Internet and watch more online videos on Gagne's Hierarchy of Learning.</p>	<p>Please explore the Internet and create a short academic note on Gagne's Learning Hierarchy with at least five online references.</p>	<p>Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.</p>

54 Bloom, B.S. (ed.), Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain*. New York: David McKay. Available at <https://www.uky.edu/~rsand1/china2018/texts/Bloom%20et%20al%20-Taxonomy%20of%20Educational%20Objectives.pdf>

55 Anderson, L.W. (ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition)*. New York: Longman.

	Learning Activity 1	Learning Activity 2	Learning Activity 3
	<p>Please review the article, How to Use Gagne's Nine Events of Instruction https://waterbearlearning.com/how-to-use-gagnes-nine-events/ and also refer to his book.⁵⁶</p> <p>While watching the video and reading the textual materials, please take notes and try to find answers to the following questions:</p> <ol style="list-style-type: none"> 1. Why has Gagne been considered the bridge between behaviourists and cognitive psychologists? 2. What are the components of Gagne's Hierarchy of Learning? What do they mean? 3. What's your view - are these levels hierarchic? 4. How does Gagne's hierarchy combine behavioural and cognitive learning outcomes? 5. What would you prefer between Gagne's hierarchy and Bloom's Taxonomy? 	<p>Please include a comparison between Gagne's Hierarchy and Revised Bloom's cognitive component of the taxonomy in your academic note.</p>	
Period 2	Please discuss in groups and create group responses to the questions on Gagne's Hierarchy and its comparability with the Cognitive Component of Revised Bloom's taxonomy learnt at home.	Please present your group report to the whole class, moderated by the teacher.	The teacher summarises Gagne's Hierarchy of Learning proceedings from her/his viewpoint.
BIGGS AND COLLIS' SOLO TAXONOMY			
Home	<p>Please watch this short video of 2.36 minutes on Biggs and Collis' SOLO Taxonomy: https://www.youtube.com/watch?v=19QiDQHhwf0</p> <p>You may like to see another 11.31-minute video on the same theme: https://www.structural-learning.com/post/what-is-solo-taxonomy</p> <p>Please explore and watch more online videos on SOLO Taxonomy and read the brief note by John Biggs.⁵⁷</p> <p>While watching the video, please take notes to respond to the following questions:</p> <ol style="list-style-type: none"> 1. What are the different levels of cognition? 	<p>Please explore the Internet and create a reflective academic note on SOLO Taxonomy based on the Internet-based exploration. Please build a comparison of the SOLO taxonomy hierarchy with Revised Bloom's and Gagne's Hierarchy.</p>	<p>Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.</p>

56 Gagné, R. M. (1985). *The conditions of learning and theory of instruction* (4th ed.). New York, NY: Holt, Rinehart & Winston.

57 <https://www.johnbiggs.com.au/academic/solo-taxonomy/>

	Learning Activity 1	Learning Activity 2	Learning Activity 3
	<ol style="list-style-type: none"> Biggs and Collis use terms that are different from what the others use. What's your reaction to cognition seen in terms of structures? How would you compare five layers of SOLO with six layers of Revised Bloom and eight levels of Gagne's Hierarchy? 		
Period 3	Please discuss in groups and create group responses to the questions on SOLO Taxonomy and the associated questions related to revised Bloom's taxonomy and Gagne's Learning Hierarchy.	Please present your group report to the whole class, moderated by the teacher.	The teacher summarises the proceedings and shares her/his reflections and assessment of SOLO Taxonomy and its comparability with other taxonomies.
DAVID MERRILL'S COMPONENT DISPLAY THEORY			
Home	<p>Please watch the short video of 5.42 minutes on Component Display Theory by David Merrill https://elearningindustry.com/component-display-theory</p> <p>Please explore and watch more online videos on SOLO Taxonomy and read the original article by David Merrill.⁵⁸</p> <p>While watching, please take notes and try to find answers to the following questions:</p> <ol style="list-style-type: none"> What is the unique feature of Merrill's CDT, which is different from other taxonomies? Unlike Bloom's and SOLO, why is it called Component Display Theory? How does CDT compare with Revised Bloom's Taxonomy? Between CDT and Revised Bloom, which one do you prefer and why? 	Please explore the Internet, create a reflective academic note on CDT, and compare it with Revised Bloom's Taxonomy.	Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.
Period 4	Please discuss in groups and create group responses to CDT related questions given at home.	Please present group responses to the whole class on CDT moderated by the teacher.	The teacher summarises the discussions on CDT and shares her/his views and assessments of CDT.

⁵⁸ Merrill, D. (1983). 'Component Display Theory', in C. M. Reigeluth (ed), *Instructional Design Theories and Models: An Overview of their Current States*. Hillsdale, NJ: Lawrence Erlbaum

	Learning Activity 1	Learning Activity 2	Learning Activity 3
ANDERSON AND KRATHWOHL'S ACTION VERBS FOR REVISED BLOOM'S TAXONOMY			
Home	<p>Please review the Revised Bloom's action verbs</p> <p>https://www.apu.edu/live_data/files/333/blooms_taxonomy_action_verbs.pdf</p> <p>and SOLO Taxonomy Action verbs https://www.researchgate.net/figure/The-SOLO-Taxonomy-with-sample-verbs-indicating-levels-of-understanding_fig1_329937673</p> <p>Compare the action verbs from the two lists.</p>	<p>Please create a list of action verbs for Gagne's Hierarchy of Learning and Merrill's CDT. Please feel free to explore the Internet.</p>	<p>Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.</p>
Period 5	<p>Under teacher mentoring and moderation, please choose one of the four taxonomies learnt.</p> <ul style="list-style-type: none"> • Choose a unit that you teach, and develop statements of learning outcomes using action verbs at different levels of cognition. • Please discuss and consult your teammates with your (individual) statements of learning outcomes in clearing confusion and refining the statements of learning outcomes. 	<p>Please present at least one set of learning outcomes and discuss them in the whole class, moderated by the teacher.</p>	<p>The teacher provides feedback on the quality of the learning outcomes' statements and summarises them.</p>
KEY TAKEAWAYS (SELF-ASSESSED LEARNING OUTCOMES)			
Home	<p>Please reflect and identify at least five Key Takeaways from the Unit on Taxonomies of Educational Objectives.</p>	<p>Please develop a short academic note on taxonomies of educational objectives or any one of the taxonomies.</p>	<p>Please use an online chat platform and exchange your learnings from video-watch and desktop research with your team of five peers.</p>
Period 6	<p>Students, in groups, share the Key Takeaways from the Unit on Taxonomies of Educational Objectives with the whole class.</p> <p>Students explore and take online tests, for example,</p> <p>https://www.proprofs.com/quiz-school/story.php?title=blooms-taxonomy-quiz</p> <p>https://testbook.com/objective-questions/mcq-on-gagnes-and-briggs-classification--5eea6a0a39140f30f369db86</p> <p>https://quizizz.com/admin/quiz/5e4783a8a95ff6001b4062a4/di-solo-taxonomy</p>	<p>The teacher facilitates the compilation of the Key Takeaways.</p> <p>The teacher opens up the class in the "You ask, I answer" game format, where students ask questions and raise doubts. The teacher responds to questions.</p>	<p>The teacher summarises the Unit focusing on the learning outcomes from the Unit.</p>

MODULE 4A

UNIT BLENDED LEARNING DESIGN

TAXONOMIES OF EDUCATIONAL OBJECTIVES

INTRODUCTION

Taxonomy is the science of classification. Taxonomy originated in biological sciences and was born out of classifying living organisms - animals and plants. The science of classification then became popular as a useful way of organizing information. Since human learning also happens at multiple levels and domains, some classifications are helpful. In the 1950s, a committee headed by Professor Benjamin S. Bloom of Chicago University (USA) pioneered the classification of learning in three domains - cognitive, affective, and psychomotor. The committee further classified different levels of learning in each domain. The book, *Taxonomy of Educational Objectives: The Classification of Educational Goals*, published in 1956, brought this new term into the lexicon of education.

Bloom's Taxonomy of Educational Objectives of 1956 is taught in BEd and MEd courses. Higher education teachers must understand the taxonomy of educational objectives as a prerequisite to developing blended unit designs. Bloom's taxonomy was revised in 2001 by Krathwohl and Anderson. There are, however, several other taxonomies used under different titles:

1. Gagne's Learning Hierarchy,
2. Merrill's Component Display Theory,
3. Biggs and Collis' SOLO Taxonomy, and
4. Revised Bloom's Taxonomy by Anderson and Krathwohl.

To better understand the importance and value of taxonomy of educational objectives, higher education teachers need to understand all the taxonomies. This unit helps in experiencing blended learning while learning taxonomies of educational objectives that are foundational to blended learning.

EXPECTED LEARNING OUTCOMES

At the end of this session, you will be able to:

1. Explain Bloom's Taxonomy, Gagne's Learning Hierarchy, Merrill's CDT, Biggs and Collis' SOLO Taxonomy, and Mukhopadhyay's Eclectic Taxonomy.
2. Critically analyse the implications of taxonomies of educational objectives for improving students' learning outcomes.
3. Compare and contrast Bloom's Original and Revised taxonomies of educational objectives.
4. Compare and contrast Bloom's Revised Taxonomy with Merrill and Biggs and Collis' taxonomies.
5. Formulate learning outcomes on a selected theme at different levels of cognition.
6. Develop a reflective essay on taxonomies of educational objectives.

Recommended: Inservice Capacity Building programmes of Higher Education Teachers

Duration: Three hours

ASSUMPTIONS:

1. Forty higher education teachers from different subject backgrounds as participants
2. Everyone will have an Internet-enabled device - either a smartphone, laptop or a tab.
3. Everyone will have a notepad to scribble notes.

WORKSHOP ORGANIZATION

Participants will be seated in groups of five, preferably around a round table. There will be eight groups.

RECOMMENDED READING MATERIAL

Taxonomies of Educational Objectives by Marmar Mukhopadhyay (2022). https://drive.google.com/file/d/14wUI5hMTag_jkQvp2Nd7XGhZQmVoNnXl/view

Learning Tactics: Video learning; desktop research, collaborative learning; practice, seminar presentation and teacher talk; and mentoring and moderation.

BLENDED LEARNING DESIGN

The Blended Unit Learning Design is presented in Table 4A.1.

TABLE 4A.1. BLENDED UNIT DESIGN ON TAXONOMIES OF EDUCATIONAL OBJECTIVES

Sequence	Duration in minutes	Activities	Learning Resources
	10	The teacher introduces the theme with a brief introduction on the concept of taxonomy, levels of cognition, and contents of the session - Bloom's and Revised Bloom's Taxonomy, Gagne's Hierarchy of Learning, David Merrill's CDT, SOLO Taxonomy and Mukhopadhyay's Eclectic Taxonomy. Teacher shares expected learning outcomes (Appendix 1) from the session and the instructional design with the participants. ⁵⁹	PowerPoint Slides
	30	Two groups each are engaged in self-regulated learning modes, each on: (i) Bloom's and Revised Bloom's (ii) Gagne's Hierarchy of Learning (iii) Merrill's CDT (iv) SOLO Taxonomy Each group member will view a video on the assigned theme and conduct desktop research (browsing the Internet) on the subject. Each group will discuss and create an academic note or group report for presentation to the whole class.	Please watch videos on Taxonomies. Recommended Videos: Revised Bloom's https://www.celt.iastate.edu/teaching/effective-teaching-practices/revised-blooms-taxonomy/ Gagne's Hierarchy https://www.youtube.com/watch?v=6lofSd0o7iY SOLO Taxonomy https://www.youtube.com/watch?v=19QiDQHhfw0 Merrill's CDT https://elearningindustry.com/component-display-theory

⁵⁹ In keeping with the Andragogical Principles - science of adult learning as higher education teachers are adult learners with rich experience and well developed learning skills and styles.

Sequence	Duration in minutes	Activities	Learning Resources
	15	Two groups (combined theme groups) on each taxonomy meet, discuss, and create a joint report.	
	30	Each combined theme group's representative presents their learning (reports) to the whole class. The trainer moderates interaction in Q&A form.	
	10	The resource person (trainer) makes a brief statement summarising and comparing the taxonomies. The resource person introduces action verbs and statements of learning outcomes. The resource person reorganizes the groups as far as possible, subject-wise, like science, mathematics, humanities, and social sciences. Each participant identifies a unit from the prescribed syllabus with which s/he is most comfortable with the contents.	
	30	Group browses the Internet for action verbs. Members of the group write statements of learning outcomes on the chosen unit. While drafting the statements, members consult each other. The resource person mentors and facilitates discussions in the groups.	Suggested URLs Revised Bloom's https://www.apu.edu/live_data/files/333/blooms_taxonomy_action_verbs.pdf SOLO https://thepeakperformancecenter.com/educational-learning/thinking/blooms-taxonomy/solo-taxonomy/
	30	Sampled learning outcomes' statements are presented to the whole class, maybe one set of statements from science, mathematics, humanities, and social sciences. Each presentation is rigorously scrutinised; alternative statements are generated. Teacher/trainer moderates the discussion.	
	25	The resource person invites feedback on the session and learning outcomes from the participants. The resource person makes concluding comments flagging the main features of the four taxonomies and Mukhopadhyay's Eclectic Taxonomy, the use of action verbs and statement of learning outcomes, and their relevance and necessity in blended learning.	

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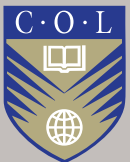
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