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Physical to Digital: Quick Start Guide

A step-by-step guide for transitioning to phygital content

July 2022

Executive Summary

Today, quality-focused content curators and premium training institutions acknowledge the value-additions offered through phygital (blended) mode of delivery in meeting the effective learning outcomes in a course. While the recognition is established, the transitioning process to a blend of relevant modes of delivery without losing the quality of the course, can be challenging for many.

Recognizing the complexities involved with transitioning from one mode to a blend, a systematic approach is must, to overcome unknown challenges or knowledge gaps in the process of change.

This document may be best suited for the training institutions who are keen on considering the benefits of phygital mode and undertake the process of change in the mode of delivery of their course(s). Through a set of ready resources, in the form of guiding questions, standard practices, examples and checklists, this document may serve as a ready-reckoner in the process of transition decided by the training institution.

The document covers an overview of the stages involved and considerations that go into the process of transitioning to phygital content. This is covered through specific sections in the document, beginning with an introduction, course development approach, criteria for organisational readiness review, and comprehensive process for change at the course level for a holistic approach on transitioning to blended learning.

The sections on **Introduction and approach** form the base for overall understanding on blended learning approach, the considerations and factors associated with the decision on the mode of course delivery.

The section on **Organisational Readiness Review** assesses the extent of organisational preparedness of content providers. This may be applicable for government and private sector content providers to design, develop and deliver blended learning materials.

The section on **Course Readiness Review** provides a comprehensive step-by-step guide to assist content providers to get started on their phygital journey.

The section on **Checklist** provides the detailed list of statements and questions to support the appropriate thinking process required for transitioning

Readers of this document are informed that this work is primarily based on a webinar series with Central Training Institutions and understanding gained by interaction with several other training institutes . Further, the references related to interactivity, navigational elements and related aspects have been added based on the secondary research.

Introduction to Phygital

Learning requirements for working professionals are constantly changing owing to technological and industry advancements. To keep up with the industry demands and productivity standards, there is an increasing demand for effective learning through offline, online or phygital modes. While a complete online or offline learning program comes with its advantages and limitations, a phygital course attempts to offer the best of offline and online modes.

Phygital learning refers to a combination of face-to-face and online learning activities and it is the blend of in-person context with digital or technology-driven experiences that makes this approach unique. Phygital or blended mode makes training learner-centric in the following three ways:

- **Flexibility:** It facilitates learners to exercise more control and ownership over their learning.
- **Learner -Centric, Engaging & Inclusive:** It leverages a host of interactive and multimodal materials to drive learner engagement. It can accommodate a broad range of learning styles, thus making the content accessible to diverse learners. Learning materials should be designed with accessibility in mind, ensuring that content is accessible to learners with disabilities.
- **Effective and Personalised:** It utilises several tools and strategies to encourage peer learning. It provides more options for training providers to select the most convenient methods based on learner needs, thus providing a tailored approach to training. This mode also allows for incorporation of collaborative features such as discussion forums, group projects, and social media integration enables learners to interact with peers, share ideas, and engage in social learning, fostering a sense of community.

Any blended learning strategy/solution has three components, technology-enabled component, face-to-face component and collaborative learning components.

The integration of face-to-face and online learning is informed by several parameters such as learners' context, technology constraints. For example, In flipped classroom blended learning model, the learners are introduced/exposed to learning materials outside the classroom, through learning management systems or online learning resources or learning materials. In-classroom component utilises tools and active/collaborative learning techniques to facilitate learning through peer interactions and feedback.

The Approach

There are 5 stages involved in designing a training curriculum in any learning environment such as online, offline, or in settings that are phygital:

1. **Analysis:** In the analysis stage, the learner, context and instructional materials are analysed to identify the target learner characteristics, competency gaps and training needs. The instructional goals and learning outcomes are determined at this stage.
2. **Design:** The design stage creates the blueprint for the instruction. This involves activities such as sequencing the learning content and information into logical segments or units, creating storyboards for e-learning modules, creating drafts of training outlines and base documents for digital media, etc.

   This step should also take into account any existing material/content which can be leveraged when moving from the physical to the digital mode. In case a phygital learning approach is deemed to be the best delivery solution, identification and mapping of content pieces to physical and digital happen at this stage. The assessment strategy is also devised during the design phase.

There are several blended learning frameworks such as Community of Inquiry (COI), Complex Adaptive Blended Learning System (CABLS) that inform the principles and practices to design learning strategies. The 'Community of Inquiry' framework for designing blended learning strategies and activities has three pillars:

- Social Presence (Learner-Learner Interaction): This aspect requires creating opportunities to be social in both in-person as well as online spaces. Through elements of open communication and personal expression, this creates a safe and supportive environment for learners and facilitates a collaborative learning environment that provides a high level of engagement.
- Cognitive Presence (Learner-Content Interaction): This aspect builds on the socially present community and thus, learners respond to triggers and engage with content and integrate what they're learning to what they already know. This also facilitates them to apply their learning to new contexts.
- Teaching Presence (Learner-Facilitator Interaction): This aspect refers to the activities that manage, monitor and coordinate the social and cognitive activities in the community. This includes design and organisation, facilitation of learning and direct instruction.

The selection of Instructional strategies- the delivery methods, types of learning activities, different types of media- happens at this stage and is informed by the COI model's emphasis on developing the community that supports the learning process.

3. **Development:** The development phase is when developers create and assemble the content assets that were decided in the design phase. This involves developing instructional contents, prototypes, and assessment instruments.
4. **Implementation:** This phase involves preparing for the course launch and testing content. This involves managing an online course when it goes live and running.
5. **Evaluation:** This phase consolidates feedback and makes iterations based on pilot tests.

The ADDIE model provides a systematic approach for designing and delivering learning experiences. This is an interactive process wherein the outcome of each stage informs the subsequent stage. The evaluation between the phases throughout the entire instructional design process informs strategies to continuously improve the course effectiveness.

Section 1 :

Organisational Readiness Review Framework

Enhancing learning outcomes and course effectiveness through leveraging blended learning models require changes at multiple levels. To support the same, changes at the institution level are pertinent, which may be adopted through an organisational readiness review framework .

The organisational review framework for blended learning/ phygital mode is a self-review process developed to help training institutions enhance their institutional capacity to develop and deliver blended learning courses. This supports the institution's ability to self-diagnose challenges and develop interventions that will improve results.

This is evaluated across 5 criteria:

- **Policy, Institutional Structure and Partnership**: This reviews the strategic, administrative and procedural clarity on the phygital transition.
- **Infrastructure and Facilities**: This examines the availability of flexible physical environments for collaborative learning experiences. This also reviews the accessibility and affordability of technology and data infrastructure to facilitate design and delivery of blended learning experiences.
- **Technical and Service Support**: This reviews the instructional design, multimedia capabilities to design and support the technological component of blended learning.
- **Evaluation Support:** This evaluates the systems and processes to measure the effectiveness of blended learning programs.
- **Professional Development:** This reviews the extent to which the facilitators are supported and resourced to design and deliver blended learning models.

Based on the stated criteria for organisational readiness review framework, a tool and checklist have been curated to facilitate the process of change. The tool and checklist are detailed in the further sections of the document. Refer Section 3 for the same.

Section 2:

Step-by-Step Process for Course Readiness Review

The following step-by-step process guide has been developed to familiarise the content providers with the critical decision points during the phygital transition of a course. Through a list of guiding questions, content providers are being prompted to think through various considerations/factors such as learners' context, instructional materials, technological options, levels of interactivity etc. that go into translating an in-person course to a blended course.

The guide has been enriched by information tables, standard practices etc. to guide CBP Providers incorporate tools and strategies. A Course Review Checklist has been developed by aggregating the important parameters covered in the steps.

Step-1: Analyse Learner's Context

The instructional analysis focuses on learners' context in order to identify measurable learning objectives, and inform instructional design strategies and other components of training.

Some primary factors for entry profiling of learners are based on demographic, educational, skills, motivational and social & familial influences parameters.

The box below lists some pertinent questions to guide the thinking process required in analysing learning needs.

Guiding Questions:

1. Have you conducted profiling of the target learner? (such as career level, composition, work conditions, common constraints, professional goals,)
2. How much time do the learners have for learning?
3. What characteristics identify the learner? (such as common barriers to learning, preferred media type)
4. How do they want to be engaged with and talked to ?
5. What specific skills do learners already possess?
6. How and when will learners want to use the course? (eg. alone, in-group, at home, at workplace)
7. What are the technological possibilities and limitations of the target learner?
8. What is the learner's motivation for taking this training? Do the learners believe the course/programme will help them grow at the workplace?
9. What/ How is the learner able to perform differently after taking the course?
10. How do learners expect the course to help them achieve their professional goals?

Step-2: Drafting Course Blueprint of the blended course

Before deciding the type of content or technology to incorporate in the blended course, the course blueprint can be helpful in designing, building and delivering the blended course. The course blueprint may comprise of

- Course Description: A course overview to communicate the target audience, level, and prerequisites for your course.
- Course Goals: A set of broad statements written from an instructor's perspective that give the general content and direction of a learning experience
- Learning Objectives: Specific objectives stating what the learners are required to do, know or value after the completion of the course.

Learning objectives set benchmarks for learning activities and inform learners about course's content and assist in designing content to the specifications of learners' needs.
Learning objectives should be drafted from the learner's perspectives and should clearly articulate the competencies learners should acquire by the end of the learning activity. Bloom's Taxonomy and knowledge dimensions are one of the most commonly used frameworks for drafting learning objectives. Bloom's Taxonomy lists specific action verbs to describe a desired outcome of a learning activity.

Below are some questions to guide the process of developing course blueprint of the blended course

Guiding Questions:

1. What are the learning goals for the course?
2. Is the goal to provide information or to improve skills ?
3. What do the learners already know about the topic?
4. Is this an introductory, intermediate, or advanced skills course?
5. What specifically does the audience need to learn?
6. What is the audience expected to do after the training?
7. How and to what extent the learning objectives may be achieved in an online environment, given technological constraints and opportunities?
8. Do you need to adjust your learning objectives to suit the online delivery?
9. Are the defined learning objectives learner-centered, SMART (Specific, Measurable, Action-oriented, Realistic and Time-bound)?
10. Are objectives at the appropriate level (as per Bloom's taxonomy)?

A few standard practices for drafting the course description and learning objectives are here:

1. Course Description
    a. Uses concrete, unambiguous phrasing, such as a prerequisite of "understand eigenvalue decomposition" rather than "intermediate linear algebra".
    b. Contains 150–300 words. Is easy to skim. Uses bullet points instead of dense text paragraphs.
    c. Describes the skills and knowledge learners will acquire in the course. Explain what learners will experience in the course (e.g., activities, assignments etc.)
    d. Provide a brief into the instructional methods and how will they support learning
    e. Contains keywords or meta tags that the learners can search the course with.
2. Learning Objectives
    a. Select the level of complexity (as per the Bloom's Level) and relevant cognitive domain (factual/conceptual/procedural) based on learners motivation and needs
    b. Choose the appropriate action verb from the selected cognitive domain
    c. Indicate the desired level of acceptable performance.
    d. Assess the extent to which these are observable and measurable

Example- Course Description

Want to learn computer programming, but unsure where to begin? This is the course for you! Scratch is the computer programming language that makes it easy and fun to create interactive stories, games and animations and share them online.

This course is an introduction to computer science using the programming language Scratch, developed by MIT. Starting with the basics of using Scratch, the course will stretch your mind and challenge you. You will learn how to create amazing games, animated images and songs in just minutes with a simple "drag and drop" interface.

No previous programming knowledge needed. Join us as you start your computer science journey.

Example- Learning Objectives

Course "Technology Consulting in the Community"

- Establish a professional working relationship
- Assess a complex technical environment and identify problem areas
- Systematically bring structure to unstructured problems
- Negotiate with the client acceptable deliverables for the consulting period
- Develop and execute a work plan
- Use writing skills to maintain working documents that describe, plan, persuade, and coordinate work with others

Course "Cost and Benefit Analysis"

- Determine when a cost-benefit analysis (CBA) may be performed in a meaningful way
- Perform the analysis as completely as possible, given relevant modeling assumptions or approximations
- Identify limitations in modeling assumptions, data or political concerns that may compromise the validity of the study and
- Communicate the results of the CBA to stakeholders in such a way as to facilitate political or administrative processes.

An example of the course design blueprint is illustrated for the course "Everyday Psychology."

Step-3: Aligning instructional methods and learning materials by aggregating and adapting existing learning material

The content development requires suitable alignment of instructional methods with the learning materials to meet the learning objectives. This step is aimed at developing course documents, readings, etc. to extend and support learning for diverse learners. The existing reference materials on technical concepts may be referred or new resources may be developed depending on the course timeline and resources availability. This step also involves deciding the most suitable sequencing and transition between the online and in-person portions of the blended content.

This step involves analysing content to determine what needs to be included and revised. In blended learning, the instructor is not present except during live/online components in the course.
The foremost is to ensure that there is no ambiguity in the content. Directions should be clear and easy to follow. Since some content needs to be added at this stage to compensate for the teaching method, it's important to remove the non-essential content. If the information is directly tied to an objective and being measured, the content must be kept or else it must be removed.

To support the content developers in the process, the table below covers suggested alignment of the learning content/knowledge dimension type with the blended learning categories.

Learning Content Type/ Knowledge Dimension	**How to present**	**Recommended Learning Delivery Type**
Facts (Specific information of the form who/where/when)	• Visuals and infographic • Statements	Online
Procedures (series of clearly defined steps aimed at performing a task)	• Diagrams, illustrations, maps, flowcharts • Demonstration practice	Online
Concepts (shares common characteristics, require a definition)	• Examples and non-examples • Visuals to exemplify or show relationships between elements	Instructor-led
Principles (A rule describing a relationship between two concepts)	• Examples and non-examples • Visuals to explain cause-effect • Scenario-based approach and learning games	Collaborative
Interpersonal skills (interaction with other people)	• Practice-based exercises • Experiential simulations • Scenario-based learning and learning games	Instructor-led
Attitudes (predispositions to behaviours)	• Scenarios/stories	Instructor-led

The content could be further organised using the following categorises

- Primary content: This comprises of key resources, linked to the learning objectives.
- Secondary content: This comprises of supplementary resources such as guidelines, glossary etc. which will support the primary content.

This step is to determine the most effective blend for the course. Defining blend begins with looking at the Learning objectives, learner profile and course content/knowledge dimensions and evaluating different learning strategies that may be designed. .

Blend Model	Benefits	Strategies
Component Blend Model	Remove or add pieces without altering the dynamic flow of the course	1. Chunk your course into several stand-alone pieces 2. Link them together
Integrated Blend Model	All individual components to works together as single course	1. Design individual sections with remaining sections in mind to ensure flow
Collaborative Blend model	Utilises Live component	1. Added live component such as discussion forum, instructor-led
Expansive Blend Model	Utilises offline resources	1. Design scenarios/practices for the in-person classroom

An example of applying blended model strategies for the in-person course is illustrated here.
An example of aligning learning objectives, learning activities and learning content alongwith the facilitation steps is illustrated in the course "Developing Blended Course using Moodle".

Guiding questions

1. What can you do to make the course flow work for learners? (such as writing additional instructions, technical help file)
2. Do you have access to any scenarios, best practices, examples, tips and reading materials that may be used here? Do you need to create additional learning materials such as reading assignments or exercise instructions?
3. Have you analysed the content with regard to its suitability/effectiveness of being taught online?
4. Have you reviewed existing materials (such as workbooks, handouts, surveys, quizzes) with regard to its suitability?
5. Do you think the course needs to be restructured to ensure difficult pieces to teach and measure online are part of the 'live' component?
6. Do you intend to provide learner's options and flexibility to branch out and learn as per the personal learning plan?
7. Is this the best instructional method and delivery mode for the content?
8. Will this method work for target learners?
9. Do you have some clarity of the context in which learners would practice and apply learnings?
10. Do you have a Facilitator Guide?

Step 4: Choose the right blend between synchronous and asynchronous activities

This step instructs to intentionally blend synchronous and asynchronous learning activities. For example, in-person learning activities must reference and build upon online learning activities. Similarly, adding materials or asking questions in online forums should reference recent in–person learning activities. These bridging activities are key to a successful blended learning course.
Learning activities should be selected to encourage participation, engagement and foster learner-learner interaction.
This step involves identifying activities that capitalise on the strengths of each environment.

Using	Asynchronous	Synchronous
What?	Allows learners to engage with the content and other learners at different times	Allows learners to productively engage with content and other learners and/or facilitators at the same time
When?	• Reflecting on complex issues • Difficulty in scheduling due to work/family and other commitments	• Introductory • Planning Tasks • Less complex issues
Why?	• Learners have more time to reflect because the instructor does not require an immediate answer	• Learners become more motivated because an immediate response is required
How?	• Pre-recorded lessons • Video demonstrations • Individual or group projects • Social cafe • News forum • Discussion boards • Blog journals/email	• In-person lecture/Video conferencing, • Presentational activities such as lectures, learner presentations • Interactional activities such as group discussion, breakout rooms, polling, Q&A discussions

The delivery approaches may be informed by the learner's context and learning objectives.

Content Delivery	Rationale	Example
Exposition-based delivery	• Learners are new to the content being covered.	• Textual instructions • Graphical representations

		• Interactive exercises
Scenario-based delivery	• Learners are familiar with some of the content based on their day-to-day activities and experiences	• Case Studies, involving Analysis/Evaluate situations
Interactive Scenarios Prompted by series of questions Formative feedback mechanisms	• Interactive Scenarios • Prompted by series of questions • Formative feedback mechanisms	• Interactive Scenarios • Prompted by series of questions • Formative feedback mechanisms

For example, a training on Code of Conduct Policy may need to use both exposition and scenario-based delivery to engage constructively with content through phygital components.

Guiding Questions:

1. Have you identified ways to facilitate interaction with learners (such as discussion forums, live component, online office hours etc.)?
2. What are the costs to learners of being required to engage synchronously? Do the benefits of increased immediate support and dialogue outweigh the costs of being required to engage synchronously?
3. What tools do you and participants have access to? What are the tools that you plan to use? Have you trained your facilitators to use these tools adequately?

Step 5- Choose the right level of interactivity

Interactivity is one of the most important elements in instructional design. Interactivity enables learners to become active participants, enhances understanding and knowledge retention.

Different levels of interactivity may be utilised to suit the content and audience needs and based on availability of applications and tools. The following table lists levels of interactivity. The levels are progressive from no learner control to full control over sequence and presentation of content.

Level	Content	Structure	Examples
Level-1 Passive	• Emphasise key concepts and points • Informational lessons • Non-procedural • Suitable for Remembering-Understanding as per Bloom's Level	• Linear content flow, consisting of text and static graphic	• No interactivity • Click-to-reveal • Roll-over text • Static graphics (stock images) • Navigational icons • Weblinks • Simple assessment question (True/False;

			Single select) Sample-1
Level-2 Limited Interactions	• Positive feedback/ reinforcement • Check learner understanding • Procedural • Simple responses to instructional cues • Suitable for Understanding as per Bloom's Level	• Nonlinear content and synchronised visuals • Text-effect animation	• Click-to-reveal • Click-plus-Pop-up • Roll-over text • Drag-and-drop • Personalisation through avatars • Animation and videos • Open navigation Sample-1 Sample-2
Level-3 Moderate	• Meaningful and interesting practice opportunities • Suitable for Applying - Analysing as per Bloom's Level	• Discovery learning • Logical and conditional branching of screens (two or three) • Screen alternation • Scenario-based learning • High degree of content layering • Extensive audio, video, transitions and animations	• Screen alternation • Animation and videos • Gamifiication elements • Customised graphics and illustrations • Assessment with scenarios and simulations Sample-1 Sample-2
Level-4 Immersive	• Analytical content • Application-oriented • Suitable for Applying- Analysing- Evaluating as per Bloom's Level	• Multiple Branched navigation • Games/Simulations • Nonlinear content with high degree of content layering • Avatars	• Illustrations and animations • Interactive timelines • Gamification incorporates game elements, such as rules, challenges, and rewards, into the learning process. May or may not use with a leader board. • Different video content formats (In-person classroom recordings, light board filming, studio filming) • AR-VR exercise

			Sample-1 Sample-2

For in-person classroom setting, various tools and techniques may be utilised to incorporate active and collaborative learning experience.

Learning Techniques	Relevance	Examples
Active Learning	• Learners are facilitated to apply learned knowledge in different situations • Peer-feedback and clarification • Learners are enabled to keep their attention and interest	• Mapping concepts using shared online whiteboards, miro boards, FlipGrid or post-it notes • Worksheets/case studies with clear instruction • Polling to think/respond simultaneously using mentimeter or colored cards • Close-reading and sharing ideas using social annotation tools such as Hypothesis, Perusall • Reactions/responses using one-minute paper
Problem-based Learning	• Learners are facilitated to work on relevant, engaging and open-ended problems.	• Group problem solving where learners are presented with some structure towards solving problems. • Web-based discussion forums where learners reflect on problems and receive peer review/feedback.
Collaborative Learning	• Learners are facilitated to work in pairs or small groups to discuss concepts or find solutions to problems. • Learners are encouraged to evaluate their own or other's contributions.	• Fishbowl debate where learners are grouped in a team of three, assigned roles to take a position and asked to summarise discussions • Think-Pair-Share where learners turn to partners to share their responses to facilitator's question/prompts.

Step-6: Aligning technologies for effective learning experience

This step covers the aspect of selecting appropriate tools from a range of learning technologies, with a view to incorporate appropriate interactivity for effective learner engagement.

There are several technological options and tools such as web conferencing, digital textbooks, social bookmarking, mashups, digital storytelling tools, simulations etc. that may facilitate learner engagement.

The table below attempts to list the use case scenarios (why, when and how) for varied technological tools for blended learning

Technological tools	Why and When?	How? (suggested tools)
Learning Management System- An integrated application to deliver content and resources online	Collaborative work spaces	• Canvas • Moodle • Desire2learn • Blackboard • Google Classroom • Kadenze • ATutor • Sakai
Web conferencing- An online counterpart to classroom-based tutorials, seminars	Highly Multimodal with simultaneous video, voice, text chat, whiteboard annotations, screen sharing	• Adobe Connect • Blackboard
Digital Textbooks-	Improved accessibility and richer learning experiences through multimedia content and interactivity	• e-textbooks
Blogs and Wikis- An online writing tool	Reflective writing as well as collaborative research activities	• Wordpress • Blogger • Media wiki • Notion • Confluence • Trello
Whiteboarding	Taking notes or sketching ideas in real time	• Jamboard • Mural • Miro
Social bookmarking, Mashups, Digital Storytelling- An online tool to collect , tag and share online resources	Facilitative in-classroom and online discussions	• Del.isio.us • Digg • Scoop.It

Simulations, Virtual Worlds	Illustrative	• Secondlife
e-Portfolios- a collection of documents, projects to showcase the progress	Holistic view of learning	• Mahara

Additionally, based on the level of interactivity selected, the available learning technologies should be evaluated to consider the most suitable option. The following table illustrates this for comparing different video content format options.

Table: Comparison across different video content format options

Video content format options	Type of information	Prior planning (More/Less)	Editing post-filming (More/Less)
In-person class recordings	Classroom delivery and discussion	Less	More
Lightboard filming	Practice sessions, Supplementary materials	More	Less
Studio filming	Key takeaways	More	Less

Guiding questions:

1. Does the course demand interactivity across learners, facilitators and content?
2. Are the required levels of interactions across content, facilitator and learners decided?
3. Do you know the periodicity/ frequency at which the learner needs to interact to check understanding of the content?
4. Are you aware of the learning pathways for the blended course? Is the content linear or are there multiple paths?
5. Do you know the best media to influence learner behaviour?
6. Does the course consider using formats such as embedded videos, audio, broadcast text message systems, and chat rooms for messaging, and home page announcements for the learners?
7. Does the content need to be redesigned to make use of instructional strategies such as interactive scenarios and problem-based learning?
8. Does the content need to use gamification or elements of game design techniques to keep learners engaged and motivated?
9. What are the options available to combine different video formats?

Step 7: Select the course interface and screen elements suitable mix of text, graphics and audio-visual interactions. Ensure flexible physical environments

The interface of the course i.e. the appearance and layout used- and ease of navigation and related functionalities provided in the course have a significant impact on the learning experience. Hence, both interface and screen elements- text, graphics and audio-visual interactions- need to be presented and organised well.
Graphic elements such as charts, images etc. enhance the understanding and accessibility of content for learners. Similarly, multimedia elements such as narration, video, animation can enhance the learning experience.

A few recommended standard practices about the varied screen elements are captured below:

1. Text (written content)
    a. Keep language simple, consistent and concise
    b. Use a conversational style with active voice, present tense and second person, as appropriate
    c. For text-heavy sections, allow learners to access more information via 'click for more information' tabs, through downloadable aids and weblinks
    d. Use bold and italics fonts only occasionally to highlight particular phrases or work
2. Graphics
    a. Ensure graphics are accurately described with the appropriate alternative text
    b. Ensure that images enhance the content
    c. Ensure screen resolution is functional and appropriate for learner
    d. Use only two or three colors at the most. Ensure there is a purpose and consider brand or underlying tone.
    e. Colour scheme selection and font should also keep accessibility guidelines in mind.
    f. Ensure appropriate use of white space to chunk content into visible blocks or groups for enhanced readability.
    g. Ensure the use of symbols, icons, lines and other graphic elements to add visual interest and to call attention to different types of content.
3. Multimedia
    a. Use to highlight important content
    b. Use to present a scenario
    c. Use to provide examples
    d. Provide Audio transcript, wherever needed
    e. Provide alt-text and ensure it is accessible and inclusive.
4. User interface and navigation
    a. The user learning platform must contain course information tabs
    b. The learning platform must provide tabs for additional information such as references, glossary etc.
    c. Short and descriptive tab-labels are preferred
    d. Learning content/ modules must be supported with tips and hits
    e. The learning platform must provide home and exit buttons for quick and easy navigation
    f. The learning platform must contain indexed content with appropriate sequencing/ numbering to support quick search and navigation
    g. There must be tabs to exit and resume the course at the place where they stopped to support continuity to the users

In order to implement innovative active and collaborative learning techniques as stated in Step-5, it's important to ensure flexible physical environments.

Flexible physical environments strategies	Examples
Flexible Classroom	• Special types of seatings, work stations to offer and engage (Example) • Learning Zones- Highly intentional use of space to create variety of learning opportunities (Example) • Outdoor in-person learning spaces (Example)
Physical Layout	• Team worktables to enable small groups and improve team orientation (Example) • Community spaces for safe and outdoor learning (Example)

Guiding Questions:

1. Do we know the appropriate mix of screen elements that would meet the learning objectives most effectively?
2. Have you considered the accessibility standards that are needed for people with disabilities?
3. What are the types of information being presented?

Step-8: Assessing learning outcomes

Assessment in any learning system provides evidence to know whether learning objectives are met or not. Assessments have an iterative cycle, initiating from design to planning, to conducting of assessment, all underpinned with the quality assurance framework. Quality assessments are expected to be reliable, valid, fair and flexible. In a blended learning course, assessments may be embedded in multiple ways, starting with diagnostic to formative and end-of-the-course summative assessments.

Assessment Types	Formative Assessment	Summative Assessment
Why	• To monitor learner's progress and provide ongoing feedback • To assist learners develop self-regulatory behaviors	• To evaluate learning at the end of module/unit • To guide course development
What	• Assessment for Learning • Low-stake	• Assessment of Learning • High-Stake
How	• Instructor-led • Peer • Self Assessment	• Instructor-led • Group Projects

Assessment is integral to the teaching–learning process, facilitating student learning and improving instruction, and can take a variety of forms. Classroom assessment is generally divided into three types: assessment for learning, assessment of learning and assessment as learning.

Examples: Assignment Types

- Finger exercises: These are practice questions interspersed within the video lectures. The goal here is to engage learners and provide an opportunity to solidify concepts. These may be developed by teaching assistants in consultation with lectures.
- Problem Sets: These are assignments to assess knowledge acquired from the module as a whole and apply lecture concepts to new scenarios. These are adapted from existing instructional materials and require subject matter expertise.
- Midterm and Final exam: These are assignments to test overall comprehension across modules. These are adapted from existing instructional materials.

While there are numerous question types available to assess, for effective assessments a blueprint must be developed. Assessment blueprint is a detailed outline on plan of assessment and enables defining relationship between the assessment objectives/ criteria, theory and practical assessment, difficulty levels, time and marks allocated to each question, assessment methodology and evaluation thereof.

The table below attempts to highlight some critical aspects in designing and conducting assessments for a blended learning course

Guiding Questions:

1. Do learners need to be assessed for the learning outcomes before the course?
2. Do learners have to be assessed during the course of learning?
3. Do we know the stages or frequency at which formative assessment (such as finger exercises, weekly quizzes etc.) be conducted for gauging learning outcomes during the course?
4. Whether the suitable assessment mode is decided?
5. Whether assessment plans are developed?
6. Whether the infrastructure, consumables, question bank for assessments has been arranged based on the assessment plan?
7. Are the question banks created?
8. Are the weightages of learning objectives considered?

Step-9: Testing the blended learning course

This involves review for everything from errors to completeness and clarity. The beta testing windows for different modules may be staggered over several weeks to manage the workflow for revision. The operational and functional aspects of running the blended course involves managing registrations, monitoring honour code compliance, nudging learners to practice etc.
A few standard practices in testing a blended course are:

1. Onboard teaching assistants/academic associates with clear guidelines on roles and responsibilities (such as answering content questions, managing discussion forums, grading, feedback collation, etc.)
2. Ensure ethical learning behaviour through the honour code. This states the principles of academic honesty and preserves the integrity of the course in a student's performance.
3. Send reminders and provide opportunities to practice
4. Ensure processes are transparent (such as clear grading rules) and consistent (such as homework is due on the same day each week)

Guiding questions:

1. Do you need a course moderator to answer learner's content questions?
2. Is the content moderator profile and role determined?
3. Is the piloting group decided?
4. Is the pilot course review process (such as learner feedback, key recommendations for improvements etc.) decided?

Step-10: Reviewing the course

Reviewing is an ongoing process and requires analysing data to identify gaps in instructional design and learner engagement. Further, this will require tracking changes and the status of revisions by the course management team.

The review process begins with collecting feedback from multiple stakeholders - learners, course sponsors, policy makers, facilitators and course assistants

- Learner's entry and exit surveys help gauge learner's expectations, satisfaction and suggestions for improvement
- Feedback from course facilitators and assistants informs us on the logistical challenges and the areas where learners engagement and learning outcomes were not upto the mark
- Feedback from sponsors/ policy makers help obtain understanding on the extent to which the mapped competencies have been achieved.

Guiding questions:

1. Are there modules where learners drop off?
2. Is this more or less true for different groups?
3. Is performance consistent across different questions?
4. Does performance vary by different learner characteristics?

Since the course development requires several functional expertises to come together, it's important to bank upon consultation and feedback to iteratively refine the course. A useful approach for team coordination is using RACI (Responsible-Accountable-Consulted-Informed) matrix:

- Responsible – is the person who performs the task. There should be at least one responsible per task.
- Accountable is the person who is ultimately answerable for the correct and thorough completion of the deliverable or task and the one who delegates the work to those responsible.

- Persons assigned the role of Consulters are those whose opinions are sought, typically the subject matter experts (SME)
- Informed persons are kept up-to-date on progress; generally, they are involved only in completing the task or deliverables

Role	Analyse	Design	Develop	Implement	Evaluate
Instructional designer	R	R	R	C	R
Subject Matter Expert	C	C	C	-	-
Technical Developer	-	I	R	C	-
Translator	-	-	C	C	-
Graphics & Multimedia Developer	-	I	R	-	-
Course Administrator/ Project Manager	A	A	A	A	A
LMS administrator	-	I	I	C	-
Instructor	-	C	C	C	-
Mentor	-	C	C	C	-

Conclusion:

This document attempts to lay an approach to start the process of transitioning the physical training to phygital (blended) mode for content providers across government and private sector. It is envisaged that the step-by-step process overview of designing and developing blended content shall support the content providers as well as the training institutions. As elaborated in the section above, the overall process is supported with a range of aids facilitating the transitioning process via samples, standard practices, guiding questions, checklist, for initiating and implementing the process smoothly. We hope the readers find the document useful and can utilise checklists and the tool developed for the content development team.

Section 3: Checklists and Tool

While Organisational Readiness Review Tool reviews the preparedness at a macro scale, the Course Review Checklist reviews at the course/program level.

The Course Review Checklist comprises of following criteria:

1. Learning Objectives and Activities (Step 1 - Step 4): This includes learner context, learning objectives, learning activities and course materials mapping.
2. Learning Technologies (Step 5 - Step 6): This includes levels of interactivity, integration of technology in a variety of formats.
3. Interface, Graphics and Multimedia (Step 7): This includes content presentation, appearance and navigation.
4. Learner Support (Step 3-7): This includes learner diversity, communication guidelines, technical support and facilitator support.
5. Assessment (Step 8): This includes assessment design and types.
6. Review and Feedback (Step 9 - Step 10): This includes course testing, learner feedback etc.

Checklist 1: Organisational Readiness Review

About the checklist: The Organisational Readiness Review Tool assists organisations to review the preparedness and readiness on 5 dimensions to design and deliver blended learning courses.
Intended users: Central/State Training Institutions, Training Providers (Non-profit/Civil Society), Learning Portals
Purpose: Organisations will be able to self-diagnose challenges in phygital transition and prioritise interventions accordingly. The tool facilitates organisations on concrete actions to accelerate adoption of blended learning strategies in training interventions.
How to use the checklist: Organisations can respond to each parameter on three scales:

- Not Achieved (0): Little to no implementation has been carried out.
- Partially Achieved (3): Some achievement or progress but not enough to demonstrate good practice
- Fully Achieved (5): Substantially achieved with evidence of good practice

Criteria	Weightage	Parameter	Input options (Fully/ Partially/ Not achieved)
Policy, Institutional Structure and Partnership	20%	Institution has outlined the strategic rationale (such as policy papers) for adopting blended learning strategies.	
		Institution provides guidelines, SOPs and protocols etc. for design and delivery of blended learning.	
		Institutions have constituted administrative structures (such as working groups, departmental committees etc.) to approve and regulate blended courses.	
		Institution has allocated financial resources for the phygital transition.	
		Institution engages in financial planning to identify key cost drivers and strategies to optimise cost in producing and running blended learning courses.	
		Institution engages with other partner organisations to support implementation of blended learning models.	
Infrastructure and Facilities	20%	Institution has technology (hardware, network systems, connectivity etc.), data systems and processes (including back-end and front-end infrastructures etc.) that facilitate blended learning approaches.	
		Institution ensures availability and maintenance of flexible physical environments that are conducive to blended learning approaches.	
Technical and Service Support	20%	Institution ensures the access and use of technological options and tools (such as web conferencing, digital	

		textbooks, social bookmarking, mashups, digital storytelling tools, simulations etc.) for blended learning.	
		Institution undertakes analysis into learner diversity, content types, technological limitations etc. to select the appropriate mix of synchronous and asynchronous strategies.	
		Institution engages in redesign and development of learning materials for effective learner engagement as per the blend and interactivity level(such as Passive, Limited Interactions, Moderate and Highly Complex)	
		Institution provides technical and service/ counseling support (such as course logistics related communication, troubleshooting support, facilitator guides etc.) for learners and facilitators	
Evaluation Support	20%	Institution regularly monitors and reviews its implementation of blended learning approaches for its applicability, relevance and best practices	
		Institution has a set of metrics to measure the impact and effectiveness of blended learning programs.	
Professional Development	20%	Institution has qualified and trained teaching staff on blended learning.	
		Institution has empaneled a set of mentors/resource networks to consult and engage on blended learning approaches.	
		Institution's staff are well resourced, recognised and incentivised to engage in blended learning.	

Checklist 2: Course Review Checklist

About the checklist: The Course Review Checklist includes a list of parameters to keep in mind throughout the planning and development process during transition to the blended learning models.
Intended users: Central/State Training Institutions, Training Providers (Non-profit/Civil Society), Learning Portals
Purpose: The Course Review Checklist, being sequential in process, facilitates organisations on critical decision points during the planning, design and implementation of blended courses. This checklist limits itself to key parameters and doesn't address all considerations that go into the design and delivery of blended learning materials.
How to use the checklist: The checklist may be used in the following ways:

- Read the parameter and confirm whether this has been achieved.
- Document successes and challenges corresponding to the parameters in the checklist

S. No.	Criteria	Parameter
1	Learning Objectives and Activities	Learners characteristics (e.g. profiles, motivations, expectations etc.) and their limitations with regard to technology access/usage have been delineated.
2		Learning objectives are SMART and clearly defined at an appropriate learning level (as per Bloom's level).
3		Learning content types (such as facts, procedures, concepts, principles etc.) have been analysed to map with blended learning delivery categories (such as in-person, collaborative, online)
4		The existing content has been chunked into its constituent sections and the most suitable blended model (such as component blend, integrated blend, collaborative blend, expansive blend) has been selected.
5		Course materials (such as readings, documents etc.) have been mapped to the learning objectives and new resources (such as scenarios, best practices, examples, tips etc.), if required, have been identified to be developed.
6		Learning activities have been mapped with learning objectives and identified based on strengths of synchronous and asynchronous environment to maximise active learning time, learner engagement, and differentiation.
7		Content has been revised, proofread and updated in consultation with the subject matter experts.
8		Copyright clearance/permissions of use for all external material (such as videos, images, written materials etc.) have been made and there are citations/attributions wherever required.
9		Facilitator guides have been developed.
10		Additional learning resources, reference materials have been identified to extend, enrich or support learning.

11	Learning Technologies	Depending upon the budgetary and technological limits, suitable learning technological tools (such as LMS, Web Conferencing ,Digital textbooks etc.) have been selected to facilitate learner engagement.
12		Level of interactivity has been selected based on instructional strategy (linear/multiple paths, branches), learner constraints and availability of applications and tools.
13		Facilitators have been oriented and trained on the participatory tools (such as polls, quizzes, breakout rooms etc.) as per the choice of learning technologies.
14	Interface, Graphics and Multimedia	Graphic elements such as charts, images etc. have been selected as per the level of interactivity chosen.
15		Multimedia elements such as video, animation etc. have been selected as per the level of interactivity chosen.
16		The online interface of blended courses provides information tabs with short and descriptive tab labels.
17		The online interface of the blended course provides easy navigation.
18	Learner Support	Learners are provided with clear information on the blended model logistics (such as participation, assessment, technology).
19		The instructional text and the content language is simple, concise and consistent.
20		Graphics have been accurately described with the appropriate alternative text.
21		There are synchronous and asynchronous communication opportunities (such as discussion boards, online conferences etc.) to facilitate learner-facilitator interaction.
22		There is clear information on availing technical support (such as troubleshooting support etc.)
23		Facilitators have been provided clear guidelines to manage and support online learning.
24	Assessments	The suitable assessment methodologies have been identified and are aligned with the learning objectives.
25		Assessments include clear instructions and sufficient details to ensure learner understanding.
26		Assessments provide examples of good work and grading rubrics, where applicable.
27	Review and Feedback	The weblinks, embedded media (e.g. videos) have been pilot tested prior to learners access.
28		The course provides opportunities (such as discussion forums, surveys, suggestion box etc.) to learners to give feedback on the course content/design

		and learning.
29		There are mechanisms (such as learner entry and exit surveys, feedback from learning assistants etc.) to gauge learner's expectations and satisfaction.

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