Research Article

A Conceptual Framework based on Mayer's Theoretical Framework to make Edutainment Videos for Activity-based Learning in School

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Abstract

National Education Policy 2020 introduced by the Ministry of Education, Govt of India, has given a lot of emphasis to experiential and skill-based learning. Digital technology and the use of digital media as resources could be critical in implementing the NEP 2020 recommendations. The proliferation of digital technology in education has made it easier for the dissemination of effective multimedia instructional designs. This paper investigates ways of making edutainment videos for activity-based learning for the preparatory stage of NEP 2020. In order to understand the theoretical underpinnings of multimedia learning design, a study is conducted of parameters related to Mayer's theoretical framework. This includes examining the principles for reducing extraneous processing and fostering generative processing, their empirical bases, and their implications for multimedia learning design. These principles are considered in the Indian context and in light of the NEP 2020 recommendations for developing online educational videos. The research used the pedagogical approaches related to content development in conjunction with the theoretical framework of Mayer and the 12 principles to develop a conceptual framework. The framework was designed to make online videos to impart material-based learning as part of art-integrated education for the preparatory stage of the school system in the Indian context. The conceptual framework was developed based on the action research of creating 16 videos by three groups totaling 59 design students. The current study reveals critical parameters related to introductory content, demonstration of material- process, and conclusion. The conceptual framework developed in the context of NEP 2020 for the Indian context is expected to be of use to designers, filmmakers, teachers, etc. to develop relevant online edutainment video content.

Keywords: Edutainment Videos, NEP 2020, Multimedia Learning Design, Indian Context, Conceptual Framework

Introduction

The National Education Policy 2020 has made a series of recommendations that are pertinent for our times (NEP, 2020). The emphasis on creativity and practice-based approaches as recommendations pose their challenges of implementation in the current school system. One of the approaches to overcoming this challenge could be through the use of edutainment videos which can be widely disseminated. With the increase in use of smartphones and media technologies across the country, it would become easier to disseminate

education across the country in an economic manner. (Kumar, 2011). How can edutainment video modules help towards communicating activity-based learning to the masses? How can the content be structured and planned for such videos? How can the videos be made in a way which brings together education and entertainment aspects together? The methodology used for the research is qualitative and the approach is pragmatic. Mayer's framework and NEP 2020 policy recommendations form the theoretical foundation based on which action research has been carried out. It offers a framework for creating educational multimedia that aligns with how the human mind works. This theory is operationalised through various principles that have been empirically tested and validated. This paper delves into Mayer's theoretical framework, examining the principles for reducing extraneous processing and fostering generative processing, their empirical bases, and their implications for multimedia learning design. This framework is studied in the context of the approaches recommended by NEP 2020 so that it can be further contextualized for children studying in Indian schools. This has resulted in a conceptual framework and guidelines for making educational videos for the context.

National Educational Policy (NEP) 2020

The National Council of Education, Research and Training, NCERT in India has been considering new frontiers of education in terms of both content and pedagogical aspects. (Sudhir, P., and Tagore, R., 2010). Accordingly, NEP 2020 has recommended a number of approaches. This includes various ways of teaching-learning including experiential learning, activity and practice-based approaches, storytelling as a way of making learning fun and entertaining for children etc. There is also an overall emphasis on skill based learning and vocational training as well as on creativity and design thinking.

The principles and strategies of experiential learning underscores the importance of active engagement and practical application for the students. The integration of hands-on activities, artistic elements, and storytelling techniques, is done with the aim to immerse students in their learning experiences to enable deeper understanding and skill development. It will help students not only to acquire knowledge but also develop practical skills that are essential for real-world applications and future career paths. Experiential learning also encourages students to explore various vocations by providing them with opportunities to collaborate and learn directly from local artisans.

Art Integrated Education for Preparatory Stage (Classes III-V)

Children studying at the preparatory stage largely come in the concrete operational stage as per Piaget's theory. It is the third stage of cognitive development in which children develop logical thinking about concrete events. Children, at this stage, understand classification, sequencing, multi-dimensional thinking, and reversibility, allowing them to organise, transform, and systematically manipulate objects. This stage marks significant cognitive advancements as children become better at using logic and reasoning. However, their thinking is still concrete and tangible, meaning that they are comfortable with tangible mediums but struggle with abstract or hypothetical concepts. This is the

stage wherein maximum learning can happen through introducing concepts using the concrete medium. Thus, the concrete operational stage should be appropriate for introducing experiential, activity-based AIL modules (Piaget, 1971). It is recommended that subjects be integrated with the arts in an unstructured, exploratory manner. Arts (visual and performing) can easily be integrated with Languages, Mathematics, Environmental Science, etc., for teaching and evaluation. Since one teacher teaches all subjects at this level, it is easier to use art-integrated learning as a way of teaching and learning different subjects. Integration of arts is a two-way process that includes the integration of various art forms with each other and the integration of arts with other school subjects.

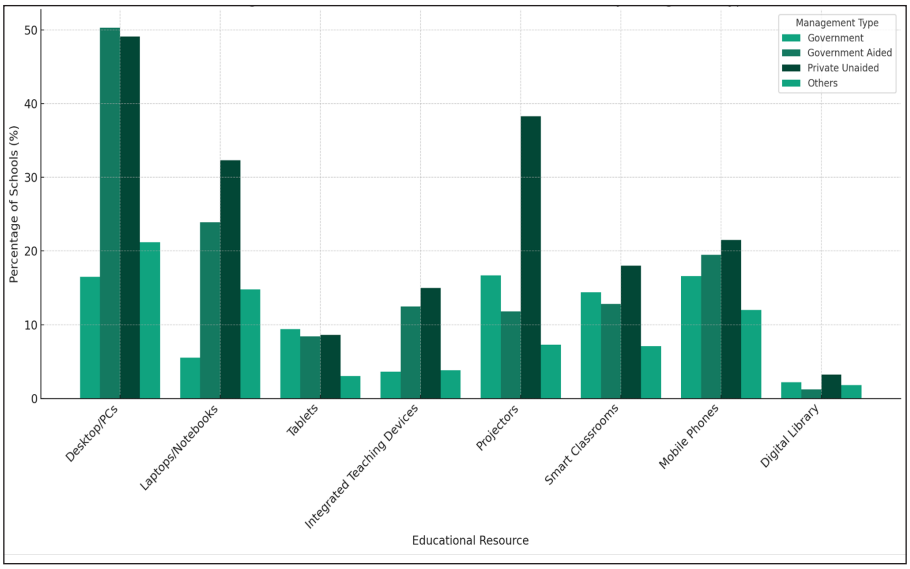
The objective of art-integrated education for the preparatory stage is multi fold. This includes an inclusive understanding of Indian culture, critical thinking, and providing joyful experiences to children. India has a rich cultural history and a plethora of festivals, as well as diverse visual and performing arts, film, and other media. While looking at art from different regions, exercises are carefully designed to enhance critical thinking and include skills of observation, exploration, critical, divergent thinking, and reasoning. This will also give students tolerance and sensitivity to the understanding of multiple views and cultures that they may encounter during their adult life. The arts education program is also expected to provide students the joyful experience of exploring and creating with a wide range of media and artistic forms in an integrated manner be it clay, wood, papier-mache, painting, dance, music, theatre, literature, and poetry, and even simple filmmaking.

Educational videos for art integration, NEP 2020

Information Communication Technology (ICT) skills required to teach and apply technology in the classroom as a resource and as professional development includes Dynamic and QR Code QR-embedded textbooks and other supplementary resources for students and teachers. (UNESCO, 2020). The increase in use of edutainment media has been made possible due to technological advancements, particularly in the domain of digital videos. Platforms like YouTube and Vimeo have experienced a lot of growth and attracted millions of subscribers globally. In India, the increasingly widespread accessibility of the internet has created possibilities for delivering high-quality educational content to a wider audience. This trend was initiated during the pandemic. The pandemic brought in the necessity for online education. As a result, there has been a significant increase in online learning platforms, production of digital educational content and improvements in infrastructure. (Dayal,2023). This shift towards online education has not only facilitated greater flexibility and accessibility but has also increased the comfort level for online video-based education amongst educators and learners and marked a shift towards more digital-video centric modes of teaching and learning.

The videos also make abstract concepts simpler to understand through audio-visual content delivery. Thus, educational videos have emerged as important resources for students to learn academic subjects, refine skills, and enhance overall learning.

Figure-1: Percentage of Schools with Functional Educational Resources by Management Type



The above is a graphical representation showing the percentage of schools with functional educational resources by management type in India for the academic year 2021-22 (Government of India, 2022). Each bar segment corresponds to a different type of school management including Government, Government Aided, Private Unaided, and others. It displays the availability of resources such as desktop PCs, laptops/notebooks, tablets, integrated teaching learning devices, projectors, smart classrooms, mobile phones for teaching, and digital libraries. We find that nearly half of the private and government funded schools have the required infrastructure to show digital content. With the increase in the number of digital devices and smartphone penetration, this percentage is likely to increase significantly.

Mayer's Theoretical Framework

Mayer's Theoretical Framework, as elucidated through the principles presented in the provided document, offers a comprehensive guide for optimising multimedia learning environments. (Mayer, R. E.,2014). This framework, rooted in cognitive theory and empirical evidence, puts forth strategies for the reduction of external processing and supporting internal generative processing amongst learners. Mayer's principles are grounded in the cognitive theory of multimedia learning which elaborates that effective multimedia design should cater to the brain's processing capabilities. These principles provide a blueprint for creating educational multimedia that reduces unnecessary cognitive load and promotes meaningful learning. By examining these principles in detail, researchers can better understand how to design multimedia instructional materials that optimise learning outcomes.

The following are the principles for reducing external processing amongst learners:

1. Coherence Principle: This principle underscores the importance of eliminating unnecessary words, pictures, and sounds from

learning materials. Extraneous content can distract from the essential material, reducing the effectiveness of learning.

2. Signaling Principle: Highlighting the organisation of essential material with cues can significantly enhance learning. This principle suggests that guiding learners' attention to crucial information helps in better processing and retention.
3. Redundancy Principle: According to this principle, learning is more effective when information is presented through both graphics as well as narration rather than combining graphics, narration, along with on-screen text. Overloading learners with multiple forms of the same information can be counterproductive.
4. Spatial Contiguity Principle: Positioning related words and pictures close to each other enhances learning by facilitating the integration of verbal and visual information.
5. Temporal Contiguity Principle: Presenting words and pictures simultaneously rather than sequentially improves learning by reducing the cognitive load required to integrate information over time.
6. Segmenting Principle: Breaking down multimedia lessons into user-paced segments allows learners to process information in manageable chunks, enhancing understanding and retention.
7. Pre-training Principle: Familiarising learners with the names and critical aspects of the content before an audio-visual lesson can significantly improve learning outcomes by providing a framework for integrating new information.
8. Modality Principle: This principle states that learners understand and remember information better when it is presented through graphics and narration instead of through animation and on-screen text.

   Other principles dealt with fostering generative processing. These included the below:

9. Multimedia Principle: Combining words and pictures in instructional materials is more effective than using only words. This principle leverages the capacity of both verbal and visual memory systems to enhance learning.
10. Personalisation Principle: Instructional materials that utilise a conversational style are more effective than those using a formal style. This approach helps in creating a more engaging and relatable learning experience.
11. Voice Principle: Narration in a friendly human voice is more conducive to learning than a machine voice, likely due to the increased engagement and relatability of human speech.
12. Image Principle: Interestingly, this principle indicates that the presence of human images i.e. the speaker in a multimedia lesson, may not always contribute to cognitive processing in a meaningful way.

This framework can be practically used as a design approach to create multimedia learning environments that are coherent, well-signaled, non-redundant, spatially and temporally contiguous, segmented, pre-trained,

modality-considered, multimedia-enhanced, personalised, and human-voiced. The features are very well suited to be incorporated in videos for activity-based learning for the preparatory stage. Coherence and non-redundancy will help in understanding the educational content. Signaling and segmentation principles guiding the children through providing cues will help them to focus on relevant content in the video while breaking the activity into segments will help them to imitate the activity in a step-by-step manner. Personalisation and voice principle suggests a friendly conversational style which could work very well with preparatory stage children, thus making the learning experience more joyful and engaging. This approach not only facilitates learning but also addresses the diverse needs of learners. By adhering to principles that reduce extraneous cognitive load and foster generative processing, educators and designers may enhance the efficacy of multimedia learning. The framework is backed by substantial empirical evidence, making it a useful tool in the development of educational technologies to shape effective, efficient, and engaging learning experiences. Mayer's theoretical framework has been applied in various contexts including for the designing of digital presentation tools for education (Kian and Huey, 2022), and for developing augmented reality learning environments (Kruger and Bodemer, 2022).

Objective and Methods

The objective of the research was to identify parameters for making edutainment videos for activity-based learning at the preparatory stage and to explain the approaches. The research plan was based on the guidelines related to pedagogical approaches provided by NEP 2020 as well as Mayer's theoretical framework for multimedia instructional design for developing the edutainment instructional videos. The research study was carried out with three groups totalling 59 design students. They were briefed about both NEP 2020 pedagogical approaches as well as Mayer's framework for making videos. A total of 16 distinct videos for activity-based learning were created throughout 2 to 3 weeks. The variables chosen to be studied were content development and parameters for video conceptualisation. The content development was based on subject specific learning modules given in textbooks incorporated in storytelling format as per one of the recommendations of content delivery for preparatory stage. The parameters for making video were based on Mayer's framework which is a generic framework for any multimedia content. Qualitative methods included an interview schedule of the filmmakers (design students), participatory observation of the entire process of filmmaking, and a detailed structural analysis of the video modules using Mayer's framework. (Creswell, J.W. 2018). This was done to understand how the variables manifest themselves and the sequence of occurrence. 5 video modules were further selected for detailed analysis based on their distinct nature including the educational content, the thematic storytelling approach to content delivery and the style of video making. A detailed structural analysis of the 5 distinct video modules is given below:

Structural analysis of video modules which were developed using the pedagogical approach recommended by NEP 2020 and multimedia instructional approach using the Mayer framework:

Sl no	Videos	Dration	Stories	REDUCING EXTRANEOUS PROCESSING				
				Coherence Principle	Signaling Principle	Redundancy Principle	Spatial Contiguity Principle	Temporal Contiguity Principle
1	Daddu ki Pathshaala	08.47 min	Traditional Regional (Garba)	The discussion focuses on building the motor toy and the basic physics behind it without diverging into unrelated topics.	The video likely uses visual and verbal cues to highlight important steps in the motor-making process, guiding learners' attention to key elements.	The video, by focusing on verbal explanations accompanied by visual demonstrations, avoids overloading the viewer with simultaneous text descriptions, adhering to this principle.	The video shows these steps happening in real-time, making it easier for viewers to connect the verbal instructions with the actions	Showing the steps of creating the motor toy while explaining them helps learners make connections between the visual and auditory information.
2	Tittar tittar	07.02 min	Moral	The video focuses on the story and the DIY activity without adding extra content that could distract from the learning goals. It aligns the story and activity with the educational objective of teaching empathy towards birds.	The video likely uses verbal cues to highlight important aspects of the story and DIY instructions. The narrative structure itself serves as a signal for the lesson's moral and the activity's steps.	By providing information through both narration and visuals, the video balances redundancy to ensure understanding. The narration complements the visuals without overwhelming the viewer with unnecessary textual information.	The description suggests that images, and narration are presented closely together, especially during the DIY segment, which helps learners integrate information more effectively.	The sequential presentation of the story followed by the DIY activity allows viewers to process the information in a logical order, aligning with the principle that corresponding words and pictures should be presented simultaneously.
4	Paper toy Champa	03.47 min	Visual story Inspiration	The video sticks to the essential elements needed to understand how to make the paper helicopter, avoiding extraneous content that could distract from the learning objectives. It focuses on the steps required, materials needed, and the assembly process.	While the video tutorial may not use explicit signaling techniques like highlighting or voice cues to emphasize key steps, the visual presentation of each step in sequence acts as a natural guide for the viewer's attention.	Demonstrating the steps visually while explaining them verbally, ensuring that information is not overloaded by avoiding unnecessary on-screen text that replicates what is being said.	The steps where to cut or fold the paper is presented closely with the corresponding visual actions, making it easier for learners to connect the instructions with the actions.	Instructions and actions occur simultaneously; as the narrator describes what to do, the video shows it. This synchrony helps learners connect the verbal instructions with the visual actions.
5	The Artsy craftsy show	10.00 min	Traditional Regional (Kerala Boat festivals)	The video focuses on how to make and understand the concept of boats, avoiding extraneous content that could distract from the learning objectives.	Key steps and concepts in the boat-making process are emphasized, likely through verbal cues or visual highlights, guiding learners to important information.	The video may use a combination of narration and moving image to explain steps, but carefully avoids overwhelming learners with identical verbal and written explanations simultaneously during the demonstration	Relevant moving images (such as the steps to make the boats) are probably presented close to the corresponding narration, making it easier for learners to connect the visual and verbal information.	Narration explaining how to make the boats and the automated boat mechanism occurs simultaneously with the visual demonstration, helping learners make connections between what
6	Fun with Gita	07.01 min	Regional (Marathi Poem)	The video focuses on relevant information regarding the moon's phases and how to make a disco ball, avoiding irrelevant details that could distract from the learning objectives.	The video likely uses verbal cues and visual signals (like pointing or highlighting) to direct attention to key aspects of the moon's phases and steps in the craft activity, aiding in learners' understanding.	The video uses narration to explain the visuals without redundant on-screen text, it follows this principle to avoid cognitive overload.	By showing the craft steps while explaining them, the video helping learners make connections between the instructions and the actions.	The explanations of the moon's phases and the craft instructions are given concurrently with the visual demonstrations, facilitating better understanding and memory retention.

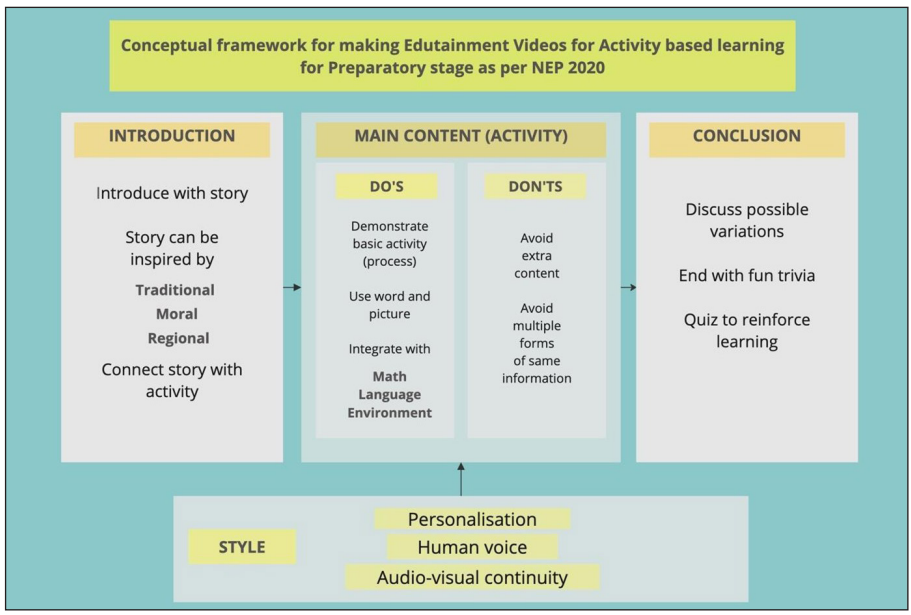
Sl no	Videos	Dration	Stories	MANAGING ESSENTIAL PROCESSING		
				Segmenting Principle	Pre-training Principle	Modality Principle
1	Daddu ki Pathshaala	08.47 min	itional Regional (Ga	The video breaks down the information into manageable chunks or segments, starting with discussing electromagnetism and then moving on to the step-by-step construction of the toy.	Incorporate the principle by providing basic information about motors and electromagnetism before delving into the construction of the motor toy.	The video combines animations showing how a motor works, live demonstrations of toy making, and audio with background music (narration explaining the steps), instead of solely relying on text descriptions.
2	Tittar tittar	07.02 min	Moral	The video's structure, divided into a narrative segment followed by an instructional activity, adheres to the segmenting principle by breaking down the information into manageable parts.	Incorporate storytelling to make it engaging and relevant to the context.	The video combines spoken words and visuals, following the modality principle. It utilizes animation to narrate the story and live action to demonstrate the nest-making process.
3	Paper toy Champa	03.47 min	Visual story Inspiration	Breaking the tutorial into manageable parts (e.g., preparing materials, marking, cutting, folding, assembling) helps in processing information.	The video showcases the handling of materials such as paper, scissors, and glue. Introducing these materials and their usage at the outset can effectively prepare viewers, especially those without prior knowledge, aligning with the principle of pre-training key concepts. Additionally, demonstrate inspiration drawn from nature.	By providing verbal instructions alongside visual demonstrations, the video leverages this principle. Auditory instructions complement the visual crafting process, enhancing understanding.
4	The Artsy craftsy show	10.00 min	Traditional Regional (Kerala Boat festivals)	The video likely segments the information into manageable chunks, establishing the cultural and usage of boats, then focusing on creating a simple boat and progressing to a more complex, automated boat, allowing learners to digest each part before moving on.	Basic explanations of terms or concepts (such as buoyancy or the principle behind the boat's movement) before delving into the crafting process align with this principle by offering learners the foundational knowledge required to comprehend the content more profoundly.	Using audio narration in conjunction with visuals aids in presenting information in a manner that is more easily digestible than relying solely on text and images, particularly for procedural topics such as boat crafting.
5	Fun with Gita	07.01 min	Regional (Marathi Poem)	It recommends breaking the content into manageable segments. The video organically divides into segments: an introduction, a story about the moon, an educational segment on the moon's phases, and a craft activity, allowing learners to process each part fully.	Introducing key concepts before delving into complex material. The video introduces essential terms (such as phases of the moon) and light reflection before elaborating on the concepts in detail.	Use dialogue to act out the scene, with audio narration to describe the moon and shadow, and spoken narration to explain the making process in the accompanying video.

Sl no	Videos	Dration	Stories	FOSTERING GENERATIVE PROCESSING			
				Multimedia Principle	Personalization	Voice	Image principles
1	Daddu ki Pathshaala	08.47 min	litional Regional (Ga	By incorporating both images: the video showing the motor assembly process, animated motor operation, visuals of garba etc., verbal instructions, and narration, the video follows the principle that individuals comprehend better from the combination of words and visuals rather than just words.	Dadu's conversational style and direct address enhance the learning experience, making it more engaging and effective by establishing a sense of dialogue with the viewer.	Depending on the narrator's voice quality is friendly and human(grandfather's voice), this could further enhance learning by making the information more accessible and engaging.	Along with the narrator's close-up, focus on the object while making. Also include video clips of doing Garba while narrating about Garba to fulfill the principle.
2	Tittar tittar	07.02 min	Moral	By integrating both visuals (the story's setting and the activity) and auditory elements (narration and possibly sound effects or music), the video employs the multimedia principle to enhance learning.	The narration uses a conversational style and possibly addresses the viewer directly, it would align with the personalization principle, which advocates for conversational rather than formal language to foster learnin	The effectiveness of the voice principle, which prefers a human voice(a female voice) for narration, depends on the video's actual narration quality and style, which is not detailed in the description.	Focus on the process along with the instructor camera, enabling viewers to concentrate on the story and activity.
3	Paper toy Champa	03.47 min	Visual story (Inspiration)	The tutorial inherently applies this principle by combining images, and narration to teach how to make the helicopter, providing a richer learning experience than text or images alone could offer.	The energetic and conversational tone of the narration enhances the learning experience, making it more engaging and personal, while also adhering to the principle of personalization.	The use of a human and friendly voice in the tutorial enhances the engagement and ease of following instructions, in line with the principle advocating for a human voice in narration..	The focus is on the crafting process, and the absence of an on-screen instructor likely directs attention more effectively to the instructional content.
4	The Artsy craftsy show	10.00 min	Traditional Regional (Kerala Boat festivals)	The video combines images, text, and sounds to explain and demonstrate the boat-making process, utilizing multiple channels of sensory input to enhance learning.	The female narrator uses a conversational style make the learning experience more personal and engaging, which is recommended by this principle.	The video's effectiveness can be improved by using a human voice for narration and acting in dialogues, making it more engaging and easier to follow than machine-generated speech.	The video includes on-screen instructors or creators who are making the boats, their presence make the learning experience more engaging.
5	Fun with Gita	07.01 min	Regional (Marathi Poem)	By combining dialogues, narration, and visual elements, rather than relying solely on text, the video integrates narration, showcases the moon's phases visually, and includes a hands-on craft activity. This approach effectively utilizes multimedia to enrich the learning experience.	Delivering content in a conversational style and acting out. The video maintains a friendly and engaging tone, following this principle to make the material more relatable and easier to understand.	Using a human voice (Gita, a female voice) for narration aligns with this principle, enhancing the creation of a more engaging and effective learning experience.	The video provided includes only relevant visuals that support the learning objectives, aligning with this principle by focusing learners' attention on essential content.

Findings and recommendations

The model reflects the goals of NEP 2020, emphasising holistic, multidisciplinary education that engages students actively and promotes critical thinking and creativity. It underlines the importance of contextually rich content that is interactive and can adapt to different learning styles, promoting retention and application of knowledge. This model is designed to guide content creators in producing edutainment videos that align with NEP 2020's focus on holistic development and active learning. It emphasises the use of storytelling, clear instructional design, integration across subjects, and a conclusion that reinforces learning, all delivered in a personalised, engaging style.

Conceptual framework and recommendations to make video content based on NEP 2020



Sequence of video

The sequence is guided by the overall script which serves as the backbone of the video. It is structured with a prologue to introduce the story, demonstrations that show the art activity in the process, and subject integration where educational content is weaved in. The script concludes with an epilogue or quiz/trivia to reinforce the learned material. It can be divided into three phases as shown in the diagram: introduction, main content, and conclusion.

Introduction

This section implies the use of a story to engage learners. Mayer's principles suggest that learners can better understand the material when they can connect new information to a narrative structure or prior knowledge. This can be a traditional, moral, or regional story, which helps learners to integrate new concepts with familiar contexts. The script follows the segmented learning principle elucidated by Meyer. It also incorporates the pre-training phase through the prologue.

Main Content (Activity)

In line with Mayer's principles, this section emphasises the "DOs" of demonstrating activities, using both words and pictures and integrating different subjects. This adheres to Mayer's Modality Principle, in which he elaborates about how people learn better from pictures and narration rather than from pictures and on-screen text. Activity based learning is easier to do with visuals and narration for children as cognitively the visual focus can be on the images and the audio focus on the narration. The step-by-step approach of presenting the edutainment modules makes it easy to understand and carry out activity-based learning based on the videos. The "DON'Ts" reflect Mayer's Coherence Principle, suggesting that extraneous content can distract from the learning process. Hence, the model advises avoiding extra content and repeated information. The focus of the camera in the video is on the activity of making, thus removing extra information and visual clutter, making it easier to understand the making process. It emphasises a comprehensive educational approach where subjects such as Language, EVS (Environmental Studies), and Math are taught through methods that encourage observation, exploration, experimentation, and expression. The implication here is that art-based activities are not merely for creative expression but are used to achieve tangible learning outcomes in various subject matters.

Conclusion

The video will conclude by discussing variations, emphasizing the fact that the art activity demonstrated in the main content can be carried out in different ways and that there could be many ways of creative expression. Furthermore, the quiz will help reinforce the learning and enhance the learning further. These techniques will align with Mayer's principles to promote engagement and retrieval practice, which helps solidify learning.

Style

The execution of the video is determined by the style of the presentation. The presentation details are crucial to engaging the audience. It includes a host who presumably guides the viewer through the content. The presentation is anchored by a host, suggesting a personal touch to the content delivery. Mayer's Personalization Principle states that a conversational style and human voice in multimedia instructions can result in deeper learning. A friendly, conversational style makes learning enjoyable and relatable to children. The setting is grounded in real life which will resonate with the child's experiences/ context. Audio-visual continuity is ensured. Dialogue and background sounds are carefully selected to enhance the educational value. Audio-visual continuity ensures that the narration matches the visual content, it is easier to learn when words and associated pictures are presented together rather than successively one after the other. (Mayer,2014).

The framework might be used to study how different elements of art and multimedia can be integrated to enhance learning in various subjects. This framework could also be the basis for experimental studies, where different variables like the type of inspiration or presentation approach could be manipulated to observe their effects on learning outcomes and engagement. The ultimate goal is to create educational content that is not only instructional but also inherently captivating, leveraging the power of art and media to facilitate learning more holistically and engagingly. The conceptual framework is proposed

to be used by designers, filmmakers, teachers, and other stakeholders to develop edutainment videos for the preparatory stage as a way of implementing the recommendations of NEP 2020 effectively.

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