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NCERT

NISHTHA FLN

National Initiative for School Heads' and Teachers' Holistic Advancement (Foundational Literacy and Numeracy)

Course: 11

Integration of ICT in Teaching, Learning and Assessment

Preface

Ensuring strong foundations in literacy and numeracy is vital for every child in school and throughout life. These foundation skills are the most reliable predictor of longer-term educational outcomes and personal and economic wellbeing. Thus, Targets 4.1 and 4.2 of Sustainable development goals state: “By 2030, ensure that all girls and boys must have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education and also complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

The National Policy on Education (NEP, 2020) highlights that a large proportion of students currently in elementary school - estimated to be over 50 million in number - have not attained foundational literacy and numeracy, i.e., the ability to read and comprehend basic text and the ability to carry out basic addition and subtraction. NEP further recommends that attaining foundational literacy and numeracy (FLN) for all children will thus become an urgent national mission, with immediate measures to be taken on many fronts and with clear goals that will be attained in the short term (including that every student will attain foundational literacy and numeracy by Grade 3).

As per the recommendation of NEP, a National Mission on Foundational Literacy and Numeracy has been set up by the Ministry of Education, known as the National Mission on Foundational Literacy and Numeracy (NIPUN Bharat) for ensuring that every child in the country necessarily attains foundational literacy and numeracy by 2026-27. A comprehensive guideline has been issued for the implementation of the NIPUN Bharat mission by the Ministry of Education. The National Mission lays down priorities and actionable agendas for States/UTs to achieve the goal of proficiency in foundational literacy and numeracy for every child by the end of Grade 3.

Teachers are at the center of all the teaching –learning process therefore it becomes imperative that they are trained in creating learner centred, educationally stimulating, classroom environment using story based, toy based, art and sports based pedagogies which provides more experiential learning to children and makes teaching learning more participative. They also need to use research based pedagogies for teaching numeracy and literacy across curriculum and address multilingual classroom environment. Teachers also need to shift to competency based teaching learning and assessment methods. The Principals / Headmasters as leaders must also be trained to support the teachers. The NISHTHA (Foundational Literacy and Numeracy) focuses on all these important aspects through 12 Courses.

Introduction to FLN Mission - This course provides an introduction to the FLN Mission, NIPUN Bharat and the role of different stake holders.

Shifting towards Competency Based Education (CBE) - This course highlights the need for shifting towards CBE. It discusses the three developmental goals of FLN, the competencies of the three developmental goals and codification of learning outcomes as given in the NIPUN Bharat guidelines.

How Children Learn: Understanding Learner? - This course describes ways children learn, their learning needs, and the strategies to address them as children vary in cognitive abilities and styles that make them think and behave differently, analyse differently and make decisions accordingly.

Involvement of Parents and Communities for FLN - Community engagement is critical for achieving the FLN mission goals. This course describes how the partnerships of schools with parents, families and community can support learning by children. It suggests how to create and nurture these partnerships.

Understanding *Vidya Pravesh* and *Balvatika* - This course is describes the transaction process of '*Vidya Pravesh*' (school preparation course for initial three months Grade-I) and '*Balvatika*' programme (one year programme before Grade-I) which are meant to prepare children with cognitive and linguistic competencies that are pre-requisite for learning to read, write and develop number sense through a play-based approach.

Language and Literacy - The course apprise teachers about how children learn to read and write and develop their language skills in social and academic contexts and how the classroom assessment should be done.

Multilingual Education in Primary Grades - This course elaborates on the importance of including children's home languages in early years of learning, and what are some strategies that can be useful to facilitate that. We hope that this course helps you develop a positive attitude towards the use of children's home languages in teaching learning processes.

Learning Assessment - This course aims to help teachers to develop and enhance their knowledge in 'Assessment for Learning' and improve foundational literacy and numeracy skills of children through different methods of assessment.

Foundational Numeracy - This course helps teachers develop an understanding of the content knowledge, pedagogical processes and assessment in the area of foundational numeracy and mathematical thinking to form a strong foundations of numeracy among children.

School Leadership for Foundational Literacy and Numeracy - This course has been conceptualized for primary school heads and teachers with the prime objective of developing them as school leaders and teacher leaders who can lead their school for achieving foundational literacy and numeracy targets for children in the age-group of 3-9 years.

Integration of ICT in Teaching, Learning and Assessment - The course enables a teacher to understand the purpose of using technology, parameters to be considered for effective integration, and also to explore various possibilities of technology integration.

Toy Based Pedagogy for Foundational Stage - This course provides an overview of Toy Based Pedagogy across the Foundational Stage. This course focuses on helping the learner to explore their immediate environment and the world of toys, and games and practice the use of toys and games in classroom processes.

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COURSE 11

Integration of ICT in Teaching, Learning and Assessment

Course 11: Course Information

Course Overview

Description of the Course

The course enables a teacher to understand the purpose of using technology, parameters to be considered for effective integration, and also to explore various possibilities of technology integration.

Keywords

NISHTHAFLN, ICT IN EDUCATION, ICT-PEDAGOGY INTEGRATION, TPACK, EDUCATIONAL TECHNOLOGY, FLN, ECCE, USE OF ICT

Objectives

On completion of this course, the learners will be able to:

- Describe Information and Communication Technology (ICT)
- Explain the benefits of integrating technology with pedagogy for the development of FLN among students
- Identify and explain the use of various ICT tools in teaching, learning, and assessment
- Identify appropriate learning resources suitable to the nature of content and teaching-learning strategies
- Design a teaching-learning plan based on ICT Content-Pedagogy integration for pre-primary/primary grades
- Exploring multiple ways of developing foundational literacy and numeracy among children using technology

Course Outline

- Concept of ICT
- Scope of using ICT, based on Content, Context, and Methods of Teaching
- Diverse Digital Resources and Technologies available for Teaching - Learning - Assessment
- Criteria for selection of eContent and Technology
- ICT integrated Teaching-Learning plan

Module 1

Introduction to Technology in Education

Module 1:
Introduction to Technology in Education

1.1 Technology and FLN: An Introduction

Watch the Video

Scan the QR code to watch the video

Or

Click on the link

https://diksha.gov.in/play/content/do_3134838094162001921 1995

Transcript

Hello friends, as we know technology has nowadays penetrated almost every walk of our lives including all stages of life. Many of us adults are amazed to see a very young child even browsing through a mobile and even before they stand, walk even talk, they are able to play videos at ease. Nowadays even kids are accessing and gathering a lot of information about various aspects of life even before they go to school and learn. It is due to technology and the resources which have become directly accessible by them as well. During pandemic, it has been observed that mobile phones used by children has increased tremendously, not only increasing the opportunities to learn but also threat to get exposed to unwanted and unpleasant experiences in the cyber world. It has become a natural phenomenon where no child can escape from this scenario. As Siraj-Blatchford and Whitebread (2003) point out, young children today are growing up in a world which not only contains technology but also is being increasingly shaped by Information and Communication Technologies i,e ICT.

With implementation of National Education Policy 2020, education landscape in India has brightened up lately. Having direct linkage with skill development, employability, and job creation, a vibrant education sector along with

complimenting flagship schemes of the government can help meet the demands of the knowledge economy. The NEP through information and Communication Technologies envisions to create an ecosystem that may provide all necessary tools to impart education to the younger generations of our country, especially in testing times the Covid-19 pandemic.

One of the focus areas of National Education Policy 2020 is Foundation Literacy and Numeracy popularly known as FLN which has established a renewed focus on pre-primary and primary education. As we are aware, foundational literacy which refers to essential literacy and numeracy alludes to building sufficient proficiency and numeracy abilities during the early years of schooling. Foundation Literacy and Numeracy is an essential establishment and a key essential for future readiness and deep-rooted learning as well. The National Education Policy 2020 directs the education system to prioritise and to achieve universal foundational literacy and numeracy in foundational and preparatory stage by 2025. So it is very essential to understand the potentials of technology to be utilised for building Foundation Literacy and Numeracy skills, in a way for contributing to the holistic development of every child. It is expected that all teachers should be competent enough in identifying, using, integrating technology and all other innovative methods to build foundational literacy and numeracy among the students because Foundation Literacy and Numeracy is an urgent need & necessary prerequisite for all future learning.

Module 2

What is Information and Communication Technology (ICT)?

Module: 2

What is Information and Communication Technology (ICT)?

2.1 Concept of ICT

Watch the Video

Scan the QR code to watch the video

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Click on the link

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Transcript

Hello viewers, We are all now familiar with the term ICT. What is our understanding of ICT? How do we explain the concept of ICT? Many times when this question has been asked, we tend only to give the full form of ICT as Information and Communication Technology, or sometimes we give the uses of ICT in education. As a teacher, it is very important to understand the concept of ICT for the effective use in education. As per UNESCO, ICT refers to a set of technological tools and resources that can create, store and transmit digital information. Whenever we define a concept we try to list the essential attributes, which will help us in categorizing the examples and the non-examples.

Let us try to understand the essential attributes of ICT with an example. What do we really do when we click a photograph? Now let me click a picture of this person. In this photo we have the following information of a person created in a digital form. A person is wearing a maroon checked shirt, he is bald, he has tied a black rope in his hand, he is wearing a mask. So, the very first attribute of ICT is creating digital information. The created digital information gets stored in our

mobile. This stored information can be retrieved from our mobile at anytime, anywhere, whenever we require. The information that is stored can also be manipulated like resizing, changing color or even adding features to it. So the other attributes of ICT are storing, retrieving and manipulating digital information. The photo we have stored in our mobile can also be sent to others using any mediums like instant messenger, e-mails or social media. When it is sent through any digital platform, the person who receives, also has scope of giving feedback in the same digital platform through likes, comments or sometimes even through descriptive feedback. Hence, ICT refers to any software, hardware, a process or a system that can create, store, retrieve, manipulate, send and receive digital information. ICT need not be a single thing. In this particular example which we have taken- smartphones along with the internet connectivity and the medium like Whatsapp that we have used to send communication, forms the ICT. Very often as teachers, we not really use ICT in the classroom, but we claim to use ICT in the classroom. Let us consider this example where a teacher uses a slide presentation in her classroom for teaching and explaining the content by herself, can this teacher claim that she is using ICT? Really cannot, because the teacher was using a slide presentation that she has created digitally, and stored as the digital information. She is able to retrieve and use it in the classroom. Sometimes, when there are corrections to be made, she may also manipulate it. However, most of the time the communication of sending and receiving the information is only happening in the physical form and not through the digital form. Hence, a teacher who just used slide presentation in the classroom, shown from a projector cannot claim that she has used ICT. In case if the same teacher has sent the same presentation through instant messenger or mail or through social media to the students, where the students can also share their feedback in the same digital medium, then all the essential attributes of ICT are being used by the teacher and the teacher can claim that she is using ICT. It does not mean that the teacher should not use any partial part of ICT. The teacher may use only digital resources sometimes created for the classroom purposes, or only as a means of communication; in that case, the teacher can claim that she is using digital technology and not ICT. So, there is a possibility for a teacher to always use ICT in the classroom with the existing resources. Let us reflect where we are and how we can try to use ICT completely so that it is more effective in our classrooms. Let us also think about where we should try to use all the essential attributes of ICT for a meaningful use of ICT in our classroom.

2.2 Activity 1: Check Your Understanding

Do the activity by scanning the QR code

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Module 3

How does ICT Support the Teaching - Learning Process?

Module: 3

How does ICT Support the Teaching - Learning Process?

3.1 Activity 2: Share Your Thoughts

How does ICT support your Teaching-Learning Assessment at the foundational level and preparatory stage of school education? Take a moment to reflect? Share your thoughts.

Steps to be followed:

Step 1: Accessing the activity page

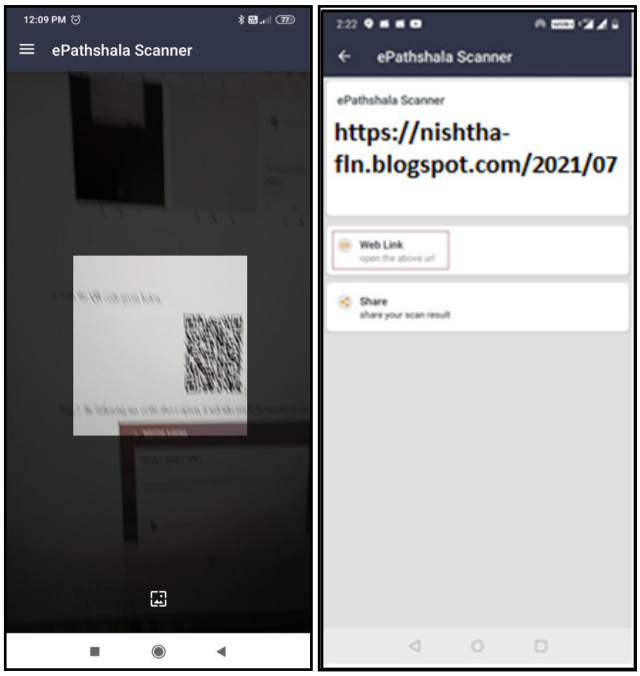
Follow any one of the following option to access the activity page:

Option 1: Type the URL in a browser https://tinyurl.com/course11acty2

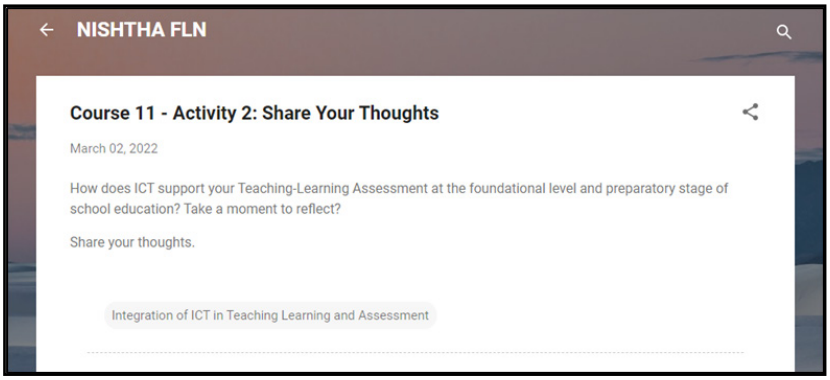
Option 2: Download this pdf from DIKSHA and copy this URL.

https://nishtha-fln.blogspot.com/2022/03/course-11-activity-2-share-your-thoughts.html

Option 3: Install mobile app '**ePathshala Scanner**' from play store. Using the app, **scan the QR code** given below.

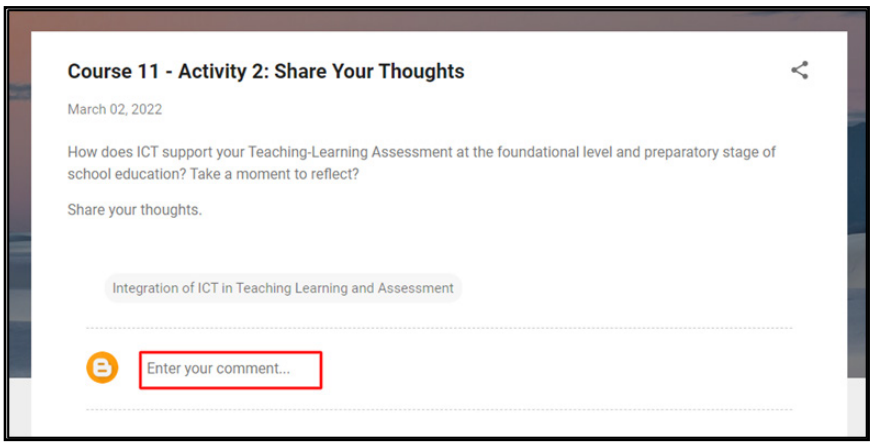


Step 2: Following any of the above option will take to an external site as shown below

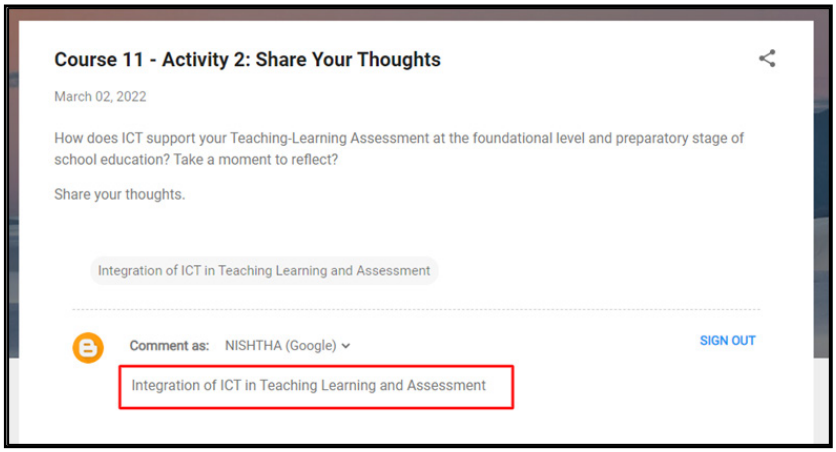


Step 3: Post your response

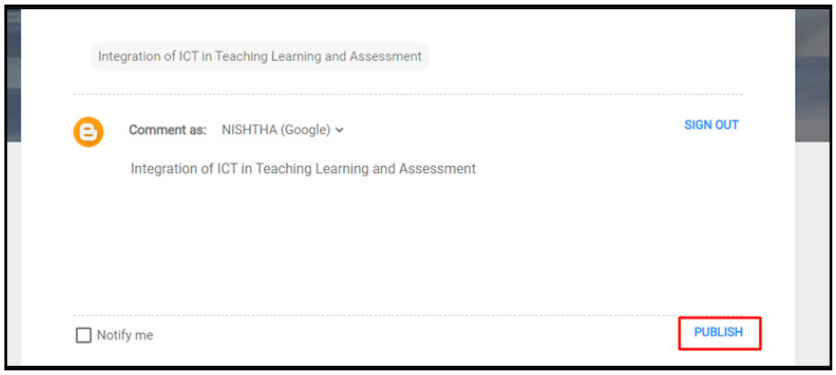
- Read the given activity
- Click on **Enter your comment**



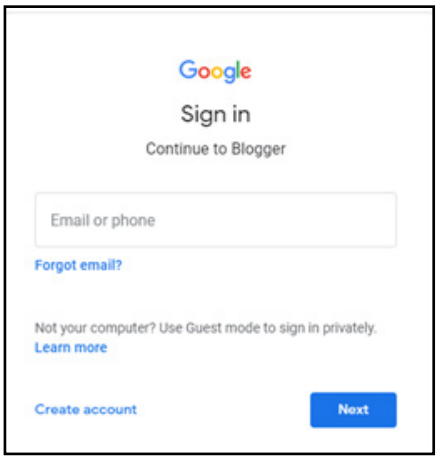
- Type your response in the comment box.



- Click **PUBLISH**

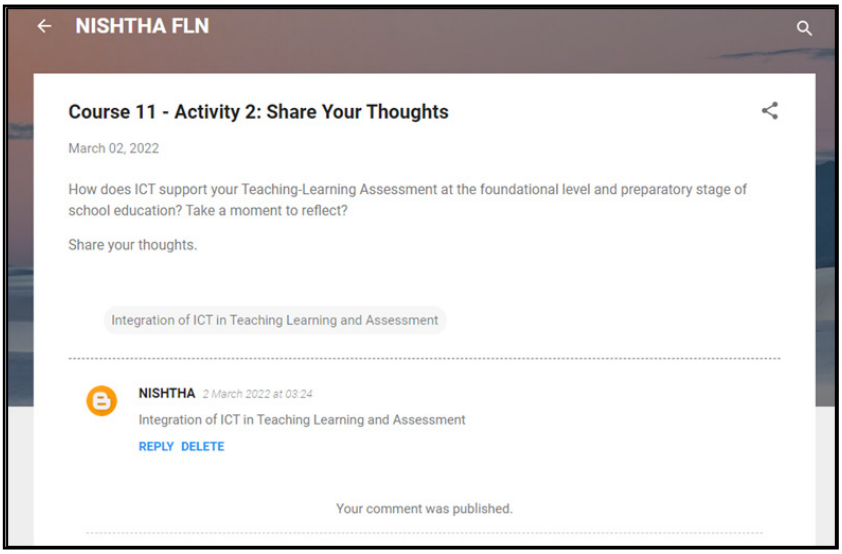


- If you are already logged in with your Gmail account then the comment will be published. If you are not logged in, then you will be directed to the Gmail login page.



- After logging in, enter **Display Name** and then click on **Continue to Blogger.**

- Click on **PUBLISH**. The comment will be posted.



3.2 Possibilities of ICT Integration

Hello friends,

Having understood that ICT is everywhere, it is important to understand the scope of ICT in education and the possibilities of technology integration at pre-primary and primary levels of Education. We are equipping children for a society where ICT is increasingly prevalent. Our children are using various forms of technology at home, and it is important that they understand their use and are safe when doing so. Digital technology should be used at the foundational level (pre-primary/ primary level) as they are widely used in all fields of a person's life. To properly apply technology is one of the major and necessary outcomes at the foundational level (pre-primary/primary education). ICT teaching material can be more visual and experimental; useful information can be found more easily; it

strengthens students' motivation, and better results are obtained using ICT. It motivates learners to be active and learn independently, it motivates children and allows them to progress in a personalized way. It is very important for fostering students' creativity, cooperativeness, self-esteem, and self-directed learning toward future learning environments. It enhances the learning opportunity by providing an indirect experience where direct experience is not feasible. We show children that computer technologies can be used not only for games but also for creative thinking activities, for learning, and for transforming their ideas and dreams from the real-world into a digital reality.

In the leading innovative Early Childhood Care and Education (ECCE) centers around the world, computers and other ICTs are included in children's learning experiences alongside many other kinds of activities. New digital technologies should not be seen as a way of displacing ordinary experiences. In any case, ICTs use should not be at the expense of other essential activities such as outdoor or indoor experiences which promote the development of gross motor skills through running, climbing, jumping, swinging, and using wheeled toys, among other examples.

- The process of implementation of technology into FLN learning experiences can be perceived from different perspectives. These can be Macro-at the National Level, Meso-at the regional level, and Micro-which is at the level of the actual classroom where teaching-learning takes place. At the micro level, technology should comprise a rich set of digital tools, environment, and procedures which may be employed as support systems in the holistic development of children especially in developing FLN.
- Provides opportunities for developing inquiry, exploration and increase motivation and interest
- enables to play various roles like learner, instructor, collaborator, etc
- nurture creativity
- support self learning and g independent thinking
- provide opportunities to play, visualise, experience, learn and collaborate with peers, teachers, and others
- increases access, participation and equal opportunity for all
- supports all areas of learning including communication, collaboration, critical thinking, problem-solving and developing self-esteem.

"To teach" or "not to teach" is not the question due to the inextricable nature of technology nowadays. The real question is, how to harvest the power of technology to meet the challenges of the 21st century and make education relevant, responsive, and effective for anyone, anywhere, anytime? Technologies

have great potential for knowledge dissemination, effective learning, and efficient education services. We do not think any more of the spectacle of printing every time we read a book, the phenomenon of TV every time we watch a movie, or the miracle of the telephone every time we make a call. The ultimate success of ICTs for learning will be attained when we stop marveling about the ICTs and apply our minds and emotions to the wonders of learning.

3.3 Activity 3: Explore

Do the activity by scanning the QR code

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Module 4

How to Integrate Technology in Education?

Module: 4
How to Integrate Technology in Education?

4.1 Parameters to Use Technology in Education

Keeping in view the advancement in the digital world, teachers need to equip themselves with the necessary professional abilities for using ICT for teaching and learning. ICT integration in teaching-learning does not merely mean the use of the internet and digital devices but to consider using these as a means to achieve the objectives and learning outcomes related to the content to be transacted. Teachers must understand how technology, pedagogy, and content are integrated to facilitate learning leading to the construction of knowledge. Early education must involve the thoughtful use of technology that engages children in key skills such as exploration, expression, and computational thinking, which helps foster a sense of curiosity that results in later success across all academic disciplines and helps maintain children's self-esteem. The preceding Figure - 1 explains how the rapidly changing potentials of technologies may be effectively integrated with a range of pedagogical approaches and content areas.

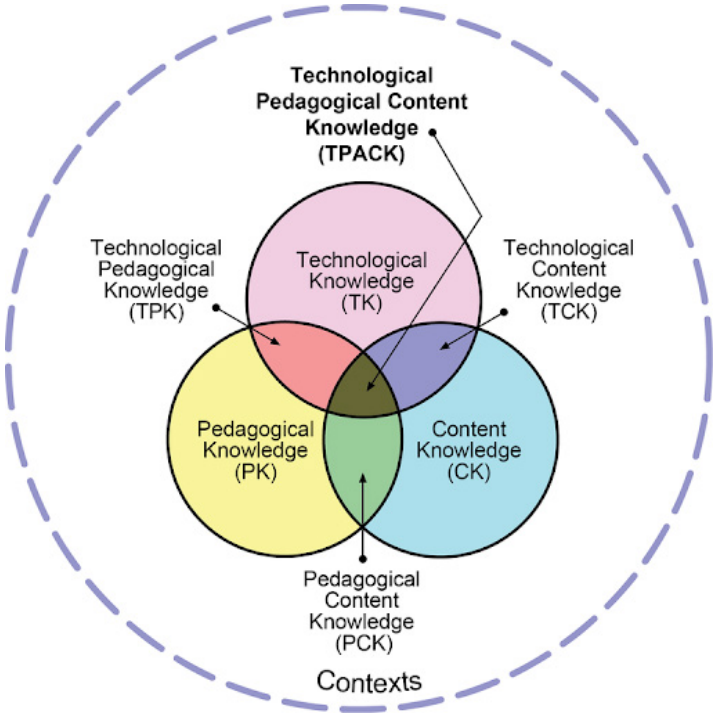


Fig. 1: Integration of Technological Pedagogical Content Knowledge

Source: https://commons.wikimedia.org/wiki/File:TPACK-new.png

Parameters to be considered while integrating ICT

The major parameters to be considered are:

1. Nature of content
2. The context in terms of infrastructure and human resource
3. Pedagogy - approaches of teaching and learning
4. Type of technology and its features

4.2 Parameter 1: Nature of Content

Is it essential to use ICT for teaching and learning for all the contents?

Content transacted at the pre-primary/ primary stage may include plurality of resources for listening and readiness for reading, writing, and numeracy

- Reading readiness: Friendly with print and digital text material, developing vocabulary, getting familiar with books and textual material.
- Writing readiness: Develop fine motor skills and be familiar with written text.
- Numeracy readiness: Pre-number concept, categorization, classification, sequential thinking, seriation, problem-solving, and reasoning (shapes, color).

Content transacted at the foundational level (pre-primary/ primary stage) may include facts, concepts, theories, procedures, generalizations, prescriptions, etc. which can be broadly classified under four dimensions of knowledge.

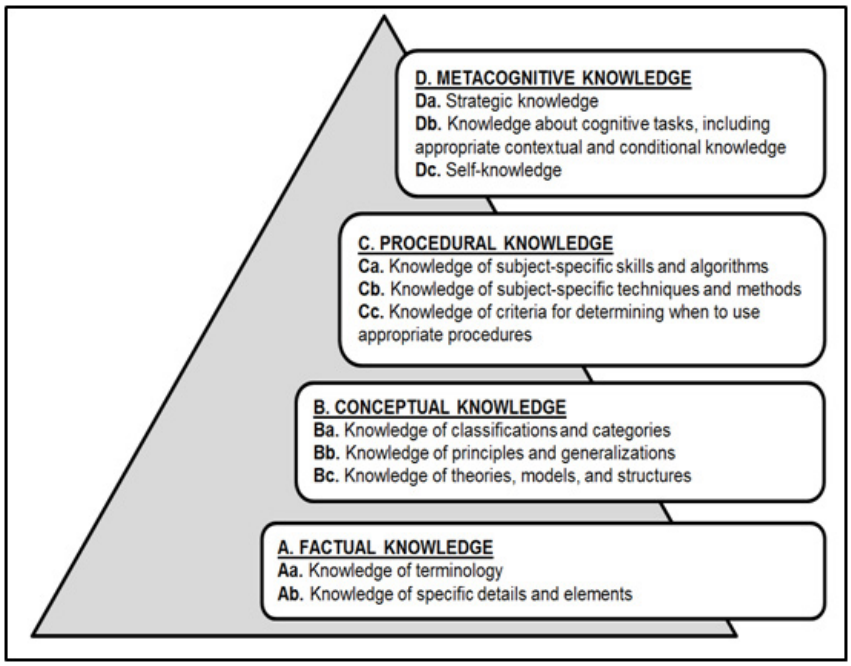


Fig. 2: Krathwohl (2002): "Structure of the knowledge dimensions" of the Revised Bloom's Taxonomy

Depending on the content type, it is necessary to decide whether the use of technology is required. Various digital tools, environment, and procedures emphasize on holistic development of children. Developmental appropriateness should be considered while selecting ICT for the classroom. Certain content requires experiential learning which any slide presentation, video, or multimedia cannot provide. In some cases, due to the unavailability of resources or the impossibility of the action, the use of technology is a must. For example, it may not be always possible to give a direct experience to wild animals in zoos, historical monuments, water bodies (ocean, rivers, lakes, water falls) etc. In such a scenario, use of virtual tours by using mobile apps such as Google Art and Culture may be an appropriate solution. Hence, it is also important to choose the right media or technology, based on the nature of the content. Therefore, the questions to be thought of while choosing media/ technology include:

- Is ICT necessary for the teaching and learning of a particular content?
- If yes, what type of ICT/ media resource is to be used?

Go through the text given in the table to understand the nature of the content, media that can be used, and what are the rationales for selecting the particular media.

Sl. No	Knowledge Dimension	Content	Media that can be used	The Rationale for using the media
1	Factual Knowledge	Body Parts- Introduced in Foundational Year 1 with complete illustrations and labels. Children learn - Hair, Ear, Eye, Nose, Mouth, Neck, Arm, Hand, Stomach, Knee, Legs, Foot and etc.	Digital Books, Image and interactive whiteboards	It can help children's eye-hand coordination in specific, and they can learn to use digital devices.

2	Conceptual Knowledge	Learning about festivals enhances creative, emotional, and critical thinking skills. Children learn social skills through festivals when relatives, friends, and family get together to mark the occasion. This concept has children experiencing greetings, embracing, and communicating with others.	Animated Videos/ Stories, Interactive Books	Using visual and auditory methods, children may have more time to explore concepts/ content. Likewise, children's social skills will improve as they are able to share information with their peers.
3	Procedural Knowledge	Drawing shapes based on their physical attribution. (Foundational Year 1 to V)	Digital Geoboard	Here, the students have to understand the similarities and dissimilarities of different shapes as per their properties.

4	Metacognitive Knowledge	Rhymes - Learn how to express what they have learned, by telling stories, rhymes, etc. Communicate their knowledge, skills, and abilities to a specific audience, such as parents, family members, friends, and teachers. Through various modes of communication, children are able to gain a better understanding of what is good and bad for them and can apply it to their everyday lives. (Foundational Year I to V)	Through digital media, like T.V., radio, computers, smartphones	This will enhance language development and increase the span of attention

This shows that it is essential to understand the nature of the content to identify the scope of using ICT. To make an appropriate selection, teachers should have the knowledge of content as well as of various ICT/ media types. eContent can be broadly categorized as shown in the following figure:

Fig. 3: Broad categories of eContent

Teachers will be able to use ICT judiciously when he/ she is able to do content analysis and choose the appropriate media based on the nature of content and treatment to be given to enable students to understand easily.

4.4 Parameter 2: Context

Context analysis is a method to analyze the environment in which an ICT enabled teaching-learning process operates. Context analysis considers the entire environment of a teaching-learning situation.

Reflect on the following-

1. What are the ICT facilities available in your school or with learners?
2. How does the support system in the school/ home motivate the use of ICT?
3. What ICT competencies should a teacher possess?
4. Could all students use ICT?
5. Are the ICT tools selected based on facilities available and the characteristics of learners?

While analyzing the classroom environment two aspects to be taken care of are, infrastructure and human resources. Infrastructure includes the general infrastructure of a classroom like availability of electricity, projection system, internet connectivity, availability of printers, desktop/ PCs/ laptop/ tablets, etc. Human resource refers to the availability of teachers/ technical persons, competency of the teacher in handling ICT, etc.

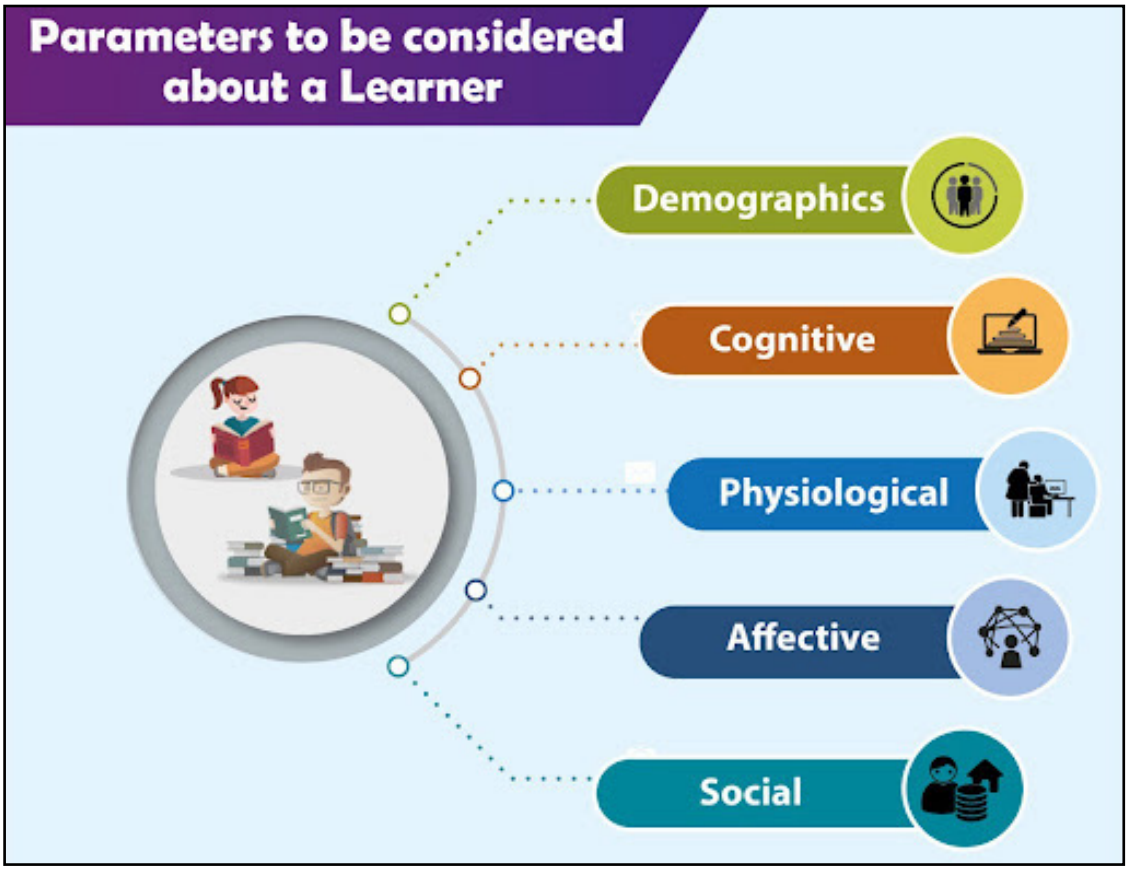
Let us consider a scenario where students are not able to attend regular schooling in the face-to-face mode due to some pandemic like COVID - 19. In this context, using technology may help in continuing teaching, learning, and assessment in online mode, partially online, or in complete offline modes like TV and radio. But a few questions to be thought of while planning are:

- What facilities are available for teachers and students?
- What digital competency do teachers, students, and parents need to have to really benefit from online classes?
- How diversity could be addressed even while using digital technology?

It is very important for the teacher to plan the intervention keeping the context in mind.

As part of our statutory mandate, we need to regularly check and assess the resources we use to ensure that there are no potential hazards to children. The technology-rich toys and resources that are used by children, must be safe and sound in nature and the use of safe technology should be maintained throughout.

A teacher also needs to understand the learner to select appropriate strategies and ICT tools/ resources to enhance learning. Five dimensions of the learner that need to be understood for using ICT are as follows:



The special needs of the children need to be analyzed to choose appropriate technology. Even while using video as a resource, considering students with special needs, the format and the features of the video need to be decided. For example, when there are students with hearing impairment, videos with Indian Sign Language (ISL) need to be used; when there are children with visual impairment, every visual in the video needs to be described, audio books/talking books, audio tactile materials needs to be used.

Consider a situation where there is only a 2G network and only a few students have the computer. During the prevailing COVID-19 scenarios when online education is seen as the only solution, can there be only one solution to continue education?

Keeping in view the context of the learner, it is very important to plan the intervention. May be broadcast and telecast systems can be used instead of conducting classes through video conferencing to address the learners. Parents of the children may be guided through video conferencing how they should handle children at home and introduce different concepts as well.

For example, while providing educational resources to a child who is visually challenged, ICT tools like the Text To Speech (TTS) and audio tactile materials, play a vital role in the communication of the information. Making the resources open

and free, provides equal access to children from lower economic backgrounds. Thus understanding the learner helps in selecting appropriate ICT and makes the classroom more inclusive.

4.4 Activity 4: Do Yourself

Keeping in view the COVID-19 situation, try listing out the challenges faced in the teaching-learning process. Also, think or search for a few articles (newspaper/ journals, etc.) of the possible solutions ICT has offered to address this situation. Make a plan on how it can be utilized for your school/ class.

4.5 Parameter 3: Method of Teaching Learning

Reflect:

- How does ICT support the implementation of various methods of teaching-learning?
- What are the innovative and integrated methods that can infuse ICT for the teaching and learning of specific subjects?

ICT tools/ media become effective only when it is used appropriately with the content and the method of teaching-learning. Let us consider an example for class II: a teacher wants to build the competency of grouping and classifying animals by attaining the concept of wild and domestic animals. Though there are several methods that can be used by teachers like the discussion method, project-based method, etc. Concept attainment model is one of the methods that can be used to develop concept.

Following steps may be adapted to teach the concepts of wild and domestic animals:

- Display a digital activity where different objects like different images of wild and domestic animals, are displayed on the screen.
- Compare these items by their appearance/ features etc. and a child may be asked to drag and drop the item into a basket named wild animals and domestic animals. Whenever they classify correctly, they may be asked on what basis they classified.
- Once they complete the activity, further it can be discussed on the attributes that were used to classify and drop them in the particular basket.
- Give more examples of wild animals and domestic animals based on the attribute.

- Conclude by defining the wild and domestic animals based on the essential attributes.
- Ask students to give more examples about wild animals and domestic animals.

Or the teacher can just explain directly about the categories with a slide presentation. But this method would not be considered a judicious and efficient use of ICT for teaching as it mimics the traditional blackboard and chalk approach. ICT tools/ media become effective only when it is used appropriately with the content and the method of teaching-learning. For example, if a teacher wants to teach about the sun, moon and stars, it is necessary for a child to visualize and hence explanation is an appropriate method. Graphics and animation which can help in explanation of the positions and so on, will be a better resource. Similarly, when a child needs to be taught to pronounce the words correctly, demonstration is an appropriate method. Hence a video showing the right movement of the mouth along with the audio is an appropriate media. Thus, depending on the methods, digital resources or technology tools should be selected by the teacher.

Try Yourself

Based on the topics selected in the Activity 1, identify appropriate teaching methods and also think about the rationale for selecting that method of teaching.

4.6 Parameter 4: Technology/ Tools/ eContent

The possibilities of children playing with technology and exploring it should also be explored by teachers and parents. Using digital educational resources spark lots of laughter and good interactions among the children. Innovative tools engage children and make them enjoy learning. Suitable ICT tools and resources may be selected as per the nature of the content and their suitability to the method that is to be adopted. Some of the examples of technology based resources and tools are:

- **Simulations-** ICT can be utilized to provide those substances which are not easily accessible in the classroom situation. For example, different sounds of birds, animals and various natural audios etc. For this purpose, simulation may be used.

- **Virtual labs-** Giving a group activity to compare and contrast between the given audios as these audios may not be feasible due to infrastructural challenges, time constraint, etc. During such situations, virtual labs can be utilized to do the virtual testing.

  Technology can be used judiciously to show these substances which are not easy to bring into the classroom situation. For example, objects like sun, moon, stars, tree, water, oil, fossil fuels, and natural gas cannot be brought to the classroom. Hence, for better understanding, students may be taken to the field. But ICT can create a real world experience inside the classroom itself.

- **Interactives-** An activity to compare and contrast between objects based on their exhaustibility. Then objects can be grouped under desirable properties like objects which can be rolled or slided. For such activities, interactive digital activities can be used.

Hence, it depends upon the teacher to use the appropriate tool based on the method of teaching-learning. It is also important to understand that a teacher can also choose ICT/ media resources based on the purpose like introducing, explaining, summarizing, etc. Thus, it is very important to understand the potential of each strategy of teaching-learning and the way it demands ICT to be used as a tool for better comprehension. By analyzing the potentials of a particular method and its demand for ICT, a teacher can make a selection of ICT tools/ media appropriately. Several innovative methods/ approaches like flipped class, blended learning, collaborative learning, etc. are being used to widely improve the learning experiences.

4.7 Safety Concerns

National Education Policy (NEP) 2020 considers early years of children's life as a crucial year for the mental, physical and psychological development of the child.

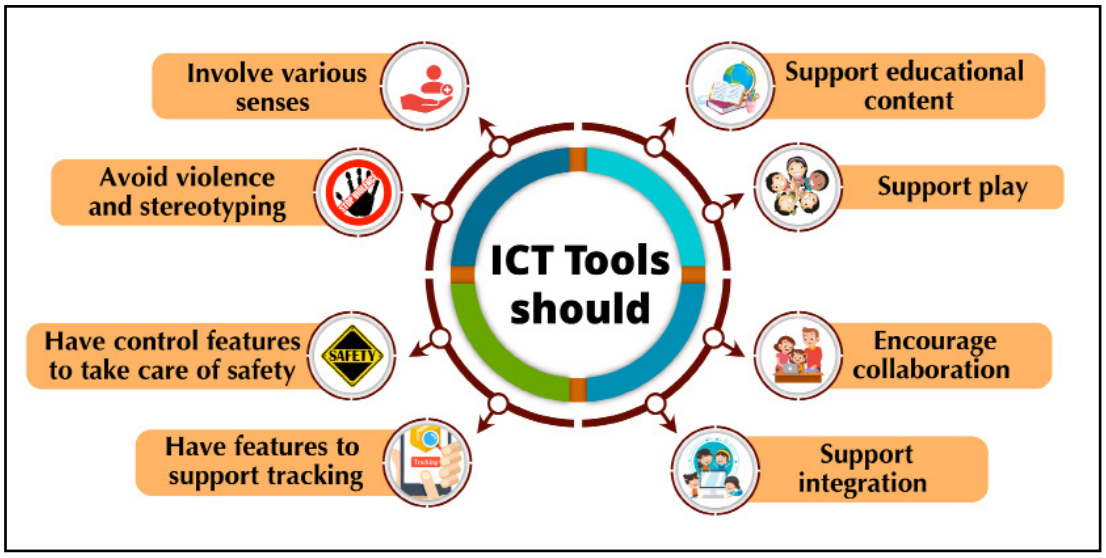
During a time like this, from a very early age children get the exposure to ICT and gradually their world is shaped by ICT. However, technology has its own pros and cons and while looking towards the benefits and productive way of integrating ICT into preschool education and primary education, we should not forget to measure and realise health and safety related risks in using ICT by young children.

UNESCO classifies most of the safety concerns in four categories.

- **Harmful physical effects-** Use of ICT is beneficial for us to stay up to date with the technologically driven world but it has been seen that excess use of technology harms students physically due to which they have to face long term consequences. It is often seen that while using devices such as computers, laptops or mobile phones, our eyes are in continuous exposure to harmful rays that can affect eyesight of students or alter the sleep cycle of students which can result in headache and nausea. Similarly, using technology for many hours affects spine, posture and can cause orthopedic problems - including imbalance in finger dextiarity, fine motor and large motor skills.
- **Children's learning, cognitive, social, and emotional development-** Technology has become a part of everyone's life, however for kids, technological devices are like toys with which they want to play 24x7 hours. Researchers on the impact of technology on young kids have shown concern about how excessive use of technology, making no physical connection with others negatively impacts the cognitive, social and emotional development of children. Making friends on virtual platforms and not interacting face to face are leading to make children more self-centered and unsocial. Researches have also shown a new concern that is 'multitasking', which can hamper children's cognitive skills. For example, the notion of "screen-stacking" or media multitasking (i.e. using more than one technological device at the same time) is a relatively new and understudied phenomenon that may have implications for children's cognition, behaviour, neural structure and academic outcomes (Uncapher et al., 2017).
- **Exposure to harmful contents-** Due to COVID-19 situation, schools are forced to be closed. Hence, we are relying totally on technology, schools have been switched to online classes. With this shift in the education sector, students are spending more time on virtual platforms, even pre-primary kids are relying on technology for education as well as for entertainment purposes as all children do not have the necessary knowledge, skills and resources to keep themselves safe online. This unawareness can leave children in vulnerable situations, where they can get exposure to harmful and exploiting sites.
- **New technologies displacing other important learning and play activities -** "Play" always remains a significant part of early age children. Various researches have shown that play helps in the growth and development of a child. With play activities, children learn to do negotiation, understand

the concept or rules, enhance their communication and imagination skills and help in social as well as emotional development. However, with the advancement in technologies, everyday new games, toys and shows are coming, instead of playing outside children are preferring to spend their time indoors on mobile phones, laptops or TV. This shift in relying over virtual plays and shows over actual play activities are resulting in making children fat, violent, impulsive and unsocial.

First, for educators, it is important to know the risk involved in the use of technology and they should be critical about the use of ICT particularly. As per UNESCO a few points which educators should keep in mind while choosing ICT tools for pre-primary and primary children are shown below.



4.8 Activity 5: Do Yourself

Consider there is a severe cyclone and students are not in a position to come to the classroom. In this situation, keeping your class in mind, plan a few activities that can be conducted for teaching-learning of your subjects using technology.

Module 5

Which Technology to be used?

Module 05:
Which Technology to be used?

5.1 Digital Resources for Foundational Literacy and Numeracy

Watch the Video

Scan the QR code to watch the video

or

Click on the link

https://diksha.gov.in/play/content/do_31348381491649740812000

Transcript

Hello viewers, in this video I am going to demonstrate exemplar digital resources for foundational literacy and numeracy (FLN). We will also learn how to access more digital resources on DIKSHA. Before watching the digital resources let us first revisit 3 developmental goals for foundational literacy and numeracy. Goal 1: children maintain good health and wellbeing. Goal 2: children become effective communicator. Goal 3: children become involved learners and connect with their immediate surroundings. We are already aware about codified learning outcomes aligned to these developmental goals. DIKSHA houses developmental goalwise learning outcome based digital resources for teachers and learners. Let us now watch some digital resources which include infographics, worksheets, assessment sheets and byte size videos for FLN. The first resource on a screen is an infographic of EVS for class 3, which is based on the learning outcome, identifies simple observable features such as shape, colour, texture, aroma of leaves, trunk, bark of plants, animals and birds in immediate surroundings. Look at this worksheet which is based on the same learning outcome, here you can see the interesting meaningful activities aligned to learning outcome where identification of plants and leaves need to be done on the basis of simple observable features

like shape, colour, texture and aroma. Some of the activities in the worksheet also involves child's experiences in his or her immediate surroundings.

Let us now see an assessment sheet for the same learning outcome. Here you can see ten assessment questions to strengthen the learning and to ensure attainment of learning outcome. The learning outcome also includes identification of simple observable features in animals and birds so we also have similar infographics, worksheets and assessment sheets depicting simple observable features in birds and animals too. Let's now watch example of a bitesize video for pre-school to developmental goal 3 , the learning outcome for this bitesize video is counts and perceives objects upto five.

So these were some forms of resources which we have on the FLN vertical of DIKSHA. Though there are forms such as interactive resources also which are available with us. Let's watch an example. This interactive is developed to learn classification which relates to developmental goal 3 for preschool 1. So you can see four different colours of baskets and fruits on the screen, children need to drag and drop fruits in corresponding baskets to learn classification on the basis of colours.

Let's now learn how to explore FLN resources on DIKSHA. For this exploration I will take you through the Deeksha platform where you will find these resources on FLN vertical. Open your browser, type the URL diksha.gov.in you will land onto this page by clicking on explore you will land on to the page shown on the screen. By scrolling down you will get developmental goal wise e-content for preschool 1, preschool 2, preschool 3, class 1, class 2 and class 3. Let us now click on to explore below class 2, you will get a drop down showing three developmental goals. Now let us click onto developmental goal 2, you can see all the learning outcomes listed on the right hand side and on the left hand side you will see the first resource which essentially will be a resource listing all the key competencies related to a particular developmental goal for example in case of class 3 you can see key competencies of developmental goal three on the screen. Let me know click onto a learning outcome codified as EVS 6.3. Let me read out the learning outcome. Identifies relationships with and among family members. Align to this learning outcome you can see an infographic titled as Rani's family tree. So that is how one can explore FLN based digital learning resources on DIKSHA.

Hope you all will have a very pleasant learning experience exploring all these resources on DIKSHA.

Thank you

5.2 Additional Activity: Explore Digital Initiatives

Do the activity by scanning the QR code

Or

Click on the link

http://econtent.ncert.org.in/wp-admin/admin-ajax.php?action=h5p_embed&id=1685

5.3 Digital Tools for Foundational Literacy and Numeracy

Watch the Video

Scan the QR code to watch the video

or

Click on the link

https://diksha.gov.in/play/content/do_31348381491649740812000

Transcript

Technology has an immense potential to support education. This mind map shows a few ICT tools that can support teaching, learning and assessment. Now let us explore some of these ICT tools to understand its use. At the primary level, digital games can be used by teachers for encouraging participation and promoting joyful learning. Gcompris is one such game package that has several educational games that covers language, science, mathematics etc. Let us see some examples in Gcompris. When I click on this, you can see that there are

games related to calculation, geometry and numeration which are the basic themes in mathematics till primary level. You can also see there are several language games in this. These are all free and open source games which can be translated and also the interface can be made in your own language. Eduactiv8 is also one such open source tool that has games for primary level. Let us take an other example of a tool called TuxMath. TuxMath is a Mathematics software that can be played by individuals in groups etc. The games help a child to play and also learn and practice mathematics. These games can be used by a teacher during teaching or for assessment or sometimes for revision as well. Now, let's watch this video clip to know how a parent can also help a child to learn using digital games. Some softwares can also help a child to express themselves. Tux paint is one such software where a child can express through stamp drawing. Here, I would like to share a case study. After the children learnt about Habitat in EVS class to listen, children were given an activity to draw an underwater scenario. All the children started drawing by stamping various animals like fish, seahorse and some plants which are available in the Sea using the stamps. One child stamped a bird in the sea. This shows that the child doesn't understand the concept of Habitat. We could also observe that children were always stamping two big fish along with small fishes. This was showing that the children are able to change the size of the objects without even somebody teaching them. So, ICT skills have become incidental in the scenario. We asked the child why there are always two big fish with some small fish. They said that everyone will have a family so fish also should have a family. They have learnt about family in class one in English but they are able to apply the concept in class two in EVS activity. This is how a child integrates the existing ideas with what they learn. We could also see that there were two fishes which are big but always one is big and the other is little smaller than the first one. We asked why one fish is little smaller than the other. All the children started shouting that father is big and mother is always small in a family. This shows the understanding of gender from the child's perspective. Immediately another child started typing mother on the big fish and father on the small fish. So, we asked the child why are you changing it. The child said in his family mother pays the fees, comes to school and attends PTA meeting. So, in his family mother is big. This is how a child expresses his or her understanding through digital drawing. We saw another child drawing two fishes with one small fish. We thought she maybe a single child. When we asked the child why you have only one small fish, the child said I have seen an advertisement, 'We two for us one'. We were very surprised to see a class two child, thinking about population control by seeing an advertisement on TV and applying it in the EVS activity. This is how integrated learning happens and such tools can help a child to express the

ideas, views and understanding of any concept. Now let us watch this video clip where children are playing with a mobile app, where it is focusing on augmented reality.

Angel Rathnabai: Children, we are going to have an activity now. Are you ready?

Children: Yes ma'am.

Angel Rathnabai: I am going to give a sheet for you all. You have to pick one sheet for you. So, the task you are going to do is I'll be giving you 1 minute within that you should colour this using your colour pencil. Ok. You are able to know what you should do in this.

Khushi: Yes.

Angel Rathnabai: What you should do?

Khushi: Create your own flag.

Angel Rathnabai: Yaa... You have to create your own flag. You can create, colour and draw any of the country's flag or you can draw your own Flag for yourself, ok. Let us start. I am going to start the timer

Start.

Child: Mere pas green nahi hai. Green kaise hoga

Ashwin: There is no green.

Pihu: ye kar deta hun

Ashwin: Wait you need a green.

Pihu: Because I have flowers and grasses

Ashwin: Why can't you do yellow and blue.

Child: Oh my God!

Ashwin: That also will comes green.

Pihu: I am going to colour the leg in some different colour.

Angel Rathnabai: Shrutu is about to complete.

Child: Ohh yes.

Ashwin: How many seconds do we have?

Angel Rathnabai: Last ten seconds.

Child: ten, nine, eight, seven, six, five, four, three, two....

Khushi: I almost completed my drawing.

Angel Rathnabai: Your time is up now. It's okay you have almost coloured, all of you have coloured so we can now see what you have done now. Okay. Should stop. Okay now I am going to give you the phones. You are going to scan the picture which you have drawn. Okay. So you both will share this phone and you both will share this phone. Okay. Now scan the picture. You can just now scan it.

Angel Rathnabai: Children, did you all like this activity.

Children: Yes ma'am

Angel Rathnabai: Okay now I am going to ask you few things. Ashwin, what did you observe?

Ashwin: Ma'am it was cool and 3D dimensional. It was like so like 3D dimensional.

Angel Rathnabai: Okay. What did you see ? Which one did you saw in three dimension?

Ashwin: 3D is fire engine.

Angel Rathnabai: Fire engine, okay. What could you do with the fire engine there in this paper.

Ashwin: We can put the ladder up.

Angel Rathnabai: Okay.

Ashwin: Right and left and also we can also spray water and drive.

Angel Rathnabai: Very good. So you could see like what all you can do with a fire engine. Right.

Ashwin: Yes.

Angel Rathnabai: Okay good. Khushi what did you see?

Khushi: I learnt that I never it was so amazing. I never saw this before and actually the thing I draw, drew was actually in 3D and also the flag was moving. It was so amazing.

Angel Rathnabai: So you could move or it was moving?

Khushi: It was also moving and I could also change it's place.

Angel Rathnabai: Okay good. Pihu you could do something with your bird?

Pihu: Yes I can also move it and I can also see it's egg on which it was sitting and hatching it. And I can also change it's color.

Angel Rathnabai: Okay. What did you see?

Child: I have seen a flamingo. I can move it and eat earthworms.

Angel Rathnabai: Ohh flamingo eats earthworms. Okay. Shrutu, what did you observe?

Shrutu: There was a 3D flamingo. He was eating worms and it was moving, walking here and there.

Angel Rathnabai: Ohh good. So you all could make a picture which is on the sheet to come live, right.

Children: Yes ma'am.

Angel Rathnabai: You were able to make it movements, you were able to see different things what that particular bird can do and he was able to see what fire engine can be used for, so this is something which you can learn by scanning with your mobile, and also you can start learning yourself.

We have observed the excitement of children in this video clip. The children were not ready to sit in the seat anymore when their mobile was given in their hand. They were happy playing around it and they were also learning from it. We have heard what a child has learned by using a mobile app which is augmented reality-based. They feel the virtual reality as well but it is very important for us to understand that while using such mobile apps at the preprimary and primary level we need to be very careful since the children are not at the age to understand what is virtual and what is real? There was a scenario where a child who played around the fire engine came back to the teacher and asked Sir, when I saw the picture of fire engine with through your mobile I am able to see it moving around it was able to pour water so can you also help me to see my grandmother's picture which is hanging on the wall to see through your mobile so that I can speak to my grandmother. The teacher was taken back. This could happen in your classroom too, because the children at the level of preprimary and primary cannot differentiate between virtual and real. So, whenever we use such augmented reality or watch reality content in our classroom we need to be very careful about the impact it could create on a child. We should never use technology to just create excitement, rather we should always focus to understand what that technology can bring in our classroom. Can really learning happen through that technology? Can there be some misunderstanding that could build or can some miscommunication that will happen through that technology. These are some critical questions that every teacher should think about while using any mobile app or any other technology. Like this several technologies are available for teachers to use in the classroom to improve teaching learning and assessment. The need of the hour is that teachers should explore such tools and select appropriate tools based on the content, pedagogy and the context to

make the classroom more effective. How do you really learn about these tools? or Where do you really explore? There are several free and open source software that can be used in teaching learning processes as well as for the development of e-content. Some of the software and subject specific like Geogebra which can enhance the classroom transaction as well as the learning process. It is the responsibility of the teacher to select the appropriate tool based on the content, method of teaching learning and the context to make the learning more effective. Let's keep exploring.

5.4 Activity 6: Share Your Ideas

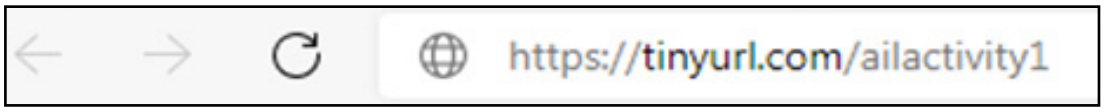
Think about one ICT tool that you can use during remote learning. How will you use it to make your teaching learning process interactive and help students to understand the basic content being taught? Share your ideas.

Steps to be followed:

Step 1: Accessing the activity page

Follow any one of the following option to access the activity page:

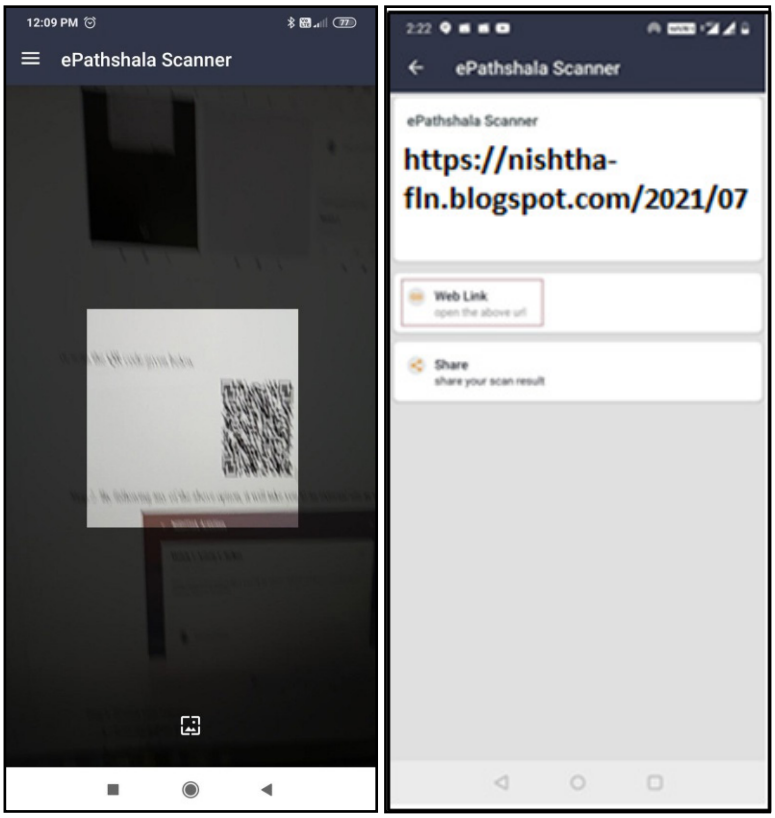
Option 1: Type the URL in a browser https://tinyurl.com/course11acty6



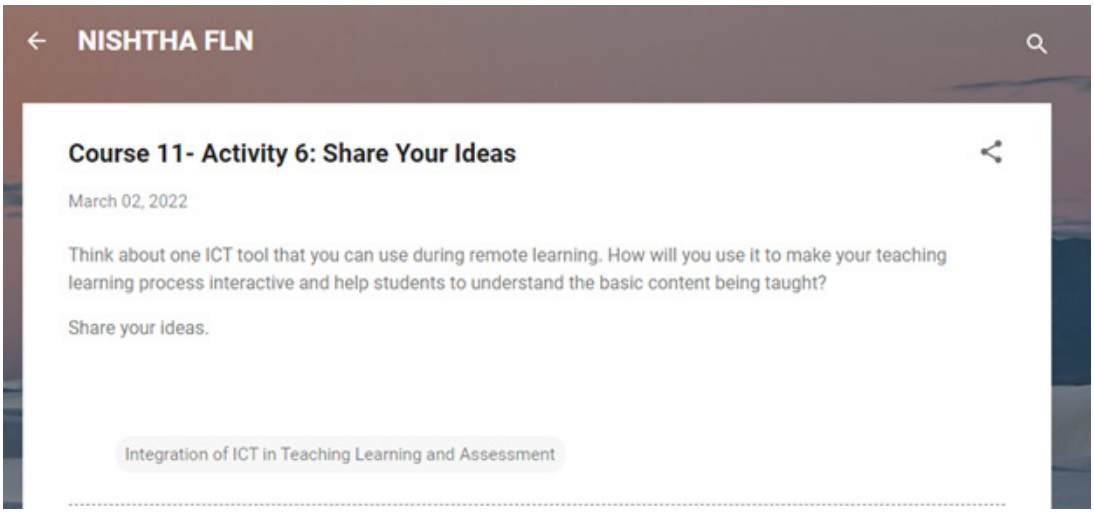
Option 2: Download this pdf from DIKSHA and copy this URL.

https://nishtha-fln.blogspot.com/2022/03/course-11-activity-6-share-your-ideas.html

Option 3: Install mobile app '**ePathshala Scanner**' from play store. Using the app, **scan the QR code** given below.

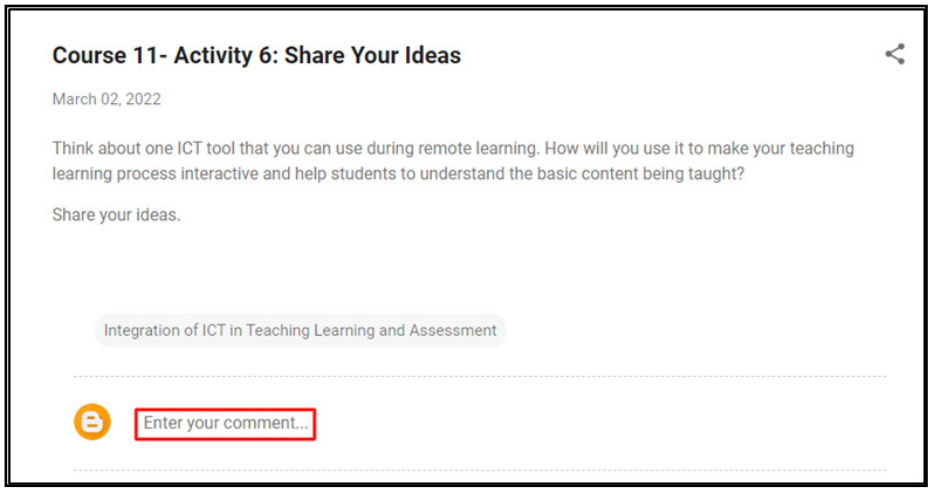


Step 2: Following any of the above option will take to an external site as shown below

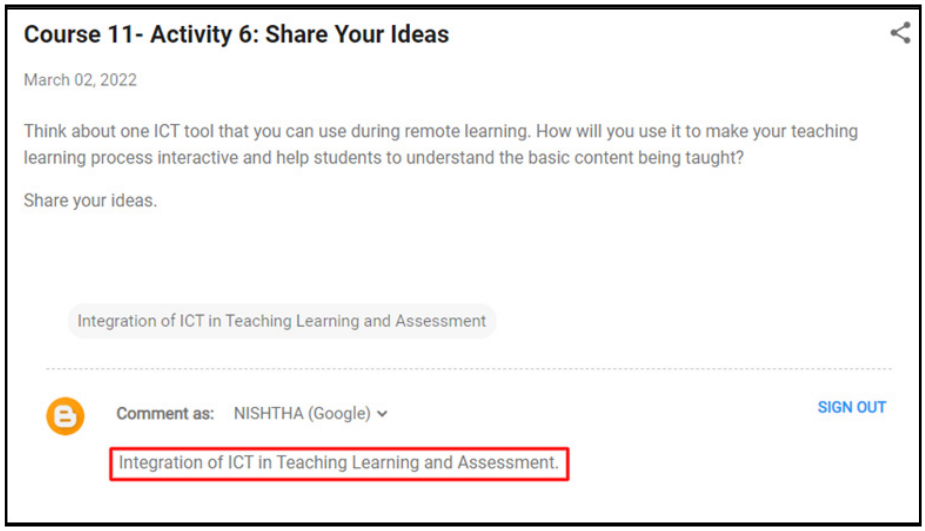


Step 3: Post your response

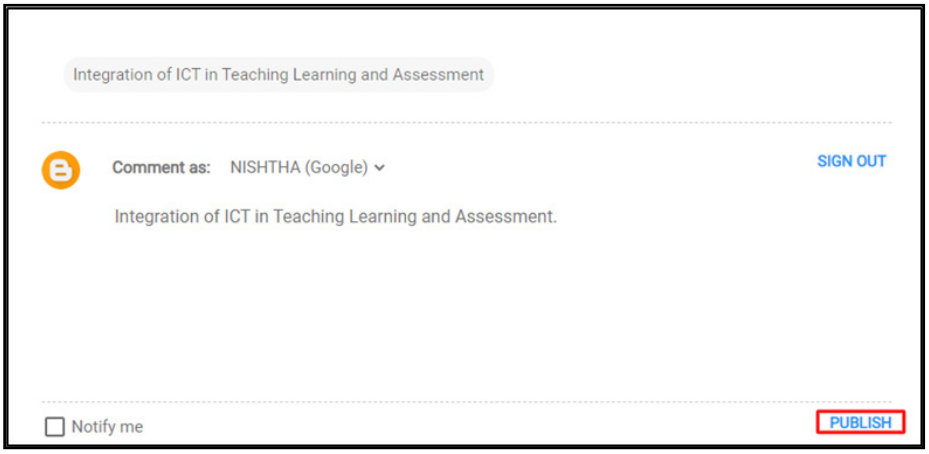
- Read the given activity
- Click on **Enter your comment**



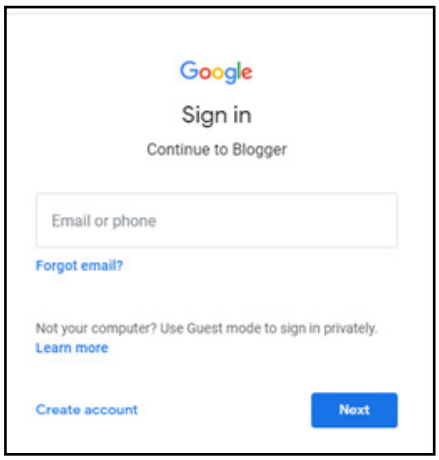
- Type your response in the comment box.



- Click **PUBLISH**

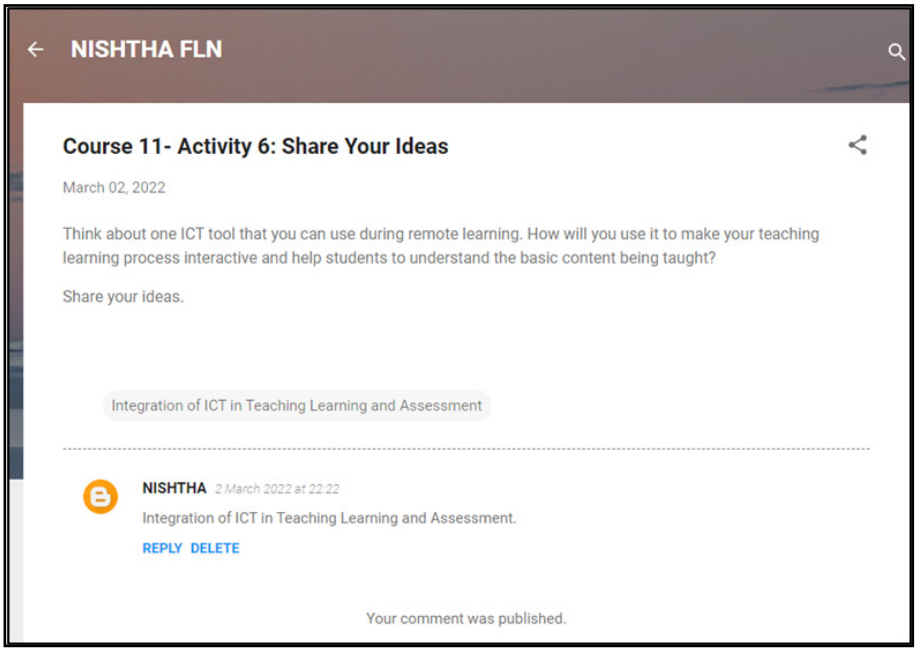


- If you are already logged in with your Gmail account then the comment will be published. If you are not logged in, then you will be directed to the Gmail login page.



- After logging in, enter **Display Name** and then click on **Continue to Blogger.**

- Click on **PUBLISH**. The comment will be posted.



Module 6

How to design a Content-Pedagogy-Technology Integrated Session plan?

Module 6:
How to design a Content-Pedagogy-Technology Integrated Session plan?

6.1 Content-Pedagogy-Technology Integration: An Exemplar

ICT integration with content and pedagogy depends on the competencies of teachers. Most of the classes may not be a complete ICT based session, rather it will be a blended approach where ICT based activities are blended with the traditional teaching/ learning experiences. Skill of integrating ICT in teaching, learning and assessment develops, according to the practice and the Technology Pedagogy and Content Knowledge (TPACK). ICT integration should be meaningful such that it promotes construction of knowledge by learners rather than just becoming substitutes of other traditional teaching aids.

Example for ICT Integrated Activities (203 words)

Example: 1

Subject: Mathematics

Class: 1

Chapter: Shapes and Space

Topic: Spatial understanding

Learning Outcome:

Learners will be able to

- Describe the physical features of various solids/shapes in her own language.
- Verbalize the properties of shapes/criterion used by them in sorting/ classifying solids and shapes.
- Classify/Sort objects based on similarities and differences through their sense of touch and observations including rolling and sliding.

Prior Knowledge:

- Familiar with shapes present in the surrounding.
- Draw various shapes.
- Compare and contrast shapes.
- List similarities and differences among shapes.

ICT Integrated learning experiences:

- Select the Shape - https://www.geogebra.org/m/ajxye4tq
- Exploring Shapes - https://www.geogebra.org/m/DuJSb8zA
- Visualizing solid shapes - https://www.geogebra.org/m/jWkGNcRq
- Recognise shape - https://diksha.gov.in/play/content/do_1308381958638796819 97?contentType=ExplanationVideo
- Shapes around us - https://diksha.gov.in/play/content/do_3125798518231449602104 30?contentType=Resource
- Name the object given below and also tick the objects which can roll or slide. Draw more objects and write their name and tick accordingly.

Object	Name	Roll	Slide
			
			
			

Activities for extended learning -

https://diksha.gov.in/play/content/do_3125798518342041602104 31?contentType=Resource

Assessment - Quiz for edges and corner

https://diksha.gov.in/play/collection/do_3122470644010844161323?contentType=Collection

Example 2 (453 words)

Subject: English

Class: 1

Chapter: 5 (Unit 3)

Topic: One Little Kitten

Book : Marigold

Learning Outcome

Learners will be able to-

- Recognize number names in English from 1 to 20
- Appreciate sound, rhythm and rhyme of the poem
- Enhance their listening and speaking skills
- Develop the skills to identify and discriminate between animals
- Vocabulary building

Key Ideas

- Recognising number name
- Identifying different animals and discriminate between their features
- Exploring features of poem
- Associating descriptive words

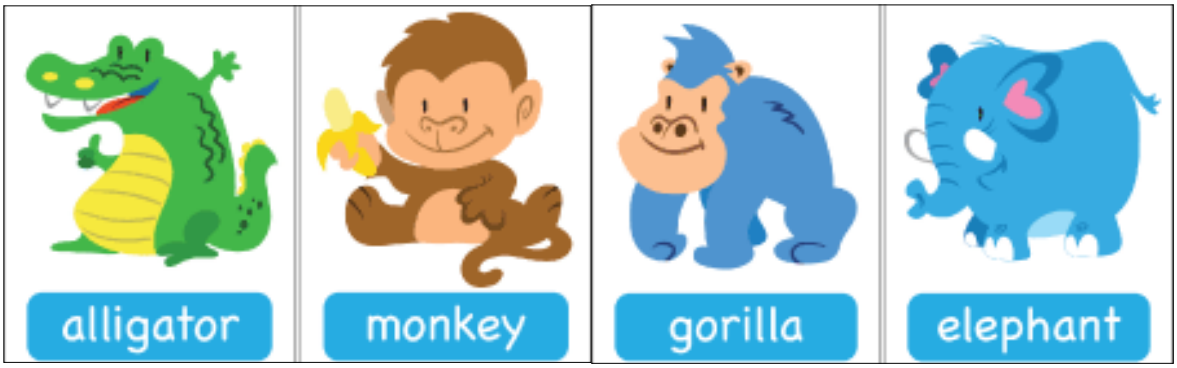
Previous Knowledge

- Recognising number name
- Identifying different animals and discriminate between their features
- Exploring features of poem
- Associating descriptive words

ICT integrated Learning experiences

1. Pre reading activity: For schema activation teachers can use the game **"guess the animal name"** to evaluate the students prior knowledge about animals. For this activity teachers can use https://youtu.be/lU3t91UUgF0 video and students will guess the name of the animal based on the picture shown in the video.
2. Model reading: For model reading, teachers should use different gestures with voice modulation while reciting poem or they can use various links for model reading :
   https://youtu.be/DpAivIpEPEs
   https://youtu.be/7L0xLUsneag

3. Discussion on the theme: The teacher can use various interactive videos such as https://youtu.be/IhhLrtrdWvg to make children familiar with the rhyming scheme of the poem, holistic worksheets like https://www.studiestoday.com/printable-worksheet-english-cbse-class-1-english-worksheets-33-one-little-kitten-212496.html and online games like https://www.education.com/game/jump-in-sight-word-mud/ to enhance children's vocabulary. Teachers can use https://youtu.be/m_QkDFf-Hu8 such videos to introduce describing words to students in funful way.
4. The teacher can also use flash cards of animals and number names to demonstrate students while facilitating in the classroom. Teachers can easily download these cards from online sites such as https://supersimple.com/free-printables/super-simple-songs-animals-complete-flashcards/ . After the use of these flashcards, these cards can be pasted in the classroom.



Assessment

- The teacher can use MCQ to check the understanding of the poem. Sample questions have been provided in the link http://www.quiz-maker.com/QTQ0DBDY8
- Group assignment through Google Classroom
- Teacher can use worksheet to assess https://nirajkumarswami.files.wordpress.com/2015/09/one-little-kitten.pdf

Additional resources

- Live Discussion on: Picture Reading Pre-School- https://youtu.be/3gav6BXih4M
- Marigold Class 1, Chapter 1- A Happy Child; Three Little Pigs - https://diksha.gov.in/play/collection/do_31304118073514393611107?contentType=TextBook
- Kids 1 to 20 Numbers Spelling Practice game- https://play.google.com/store/apps/details?id=com.valiantkid.kids.onetotwenty.numbers.spelling.learning.game&hl=en&gl=US

Activities for extended learning

- The students can explore the habitats of these animals.
- Teachers can plan the zoo visit for providing real life experience.
- Students can try to write about their favourite animals with the help of the teacher.

Example 03 (438 words)

Subject: EVS

Class: 3

Chapter: The Plant Fairy

Topic: Parts of Plant and its Function

Book : Marigold

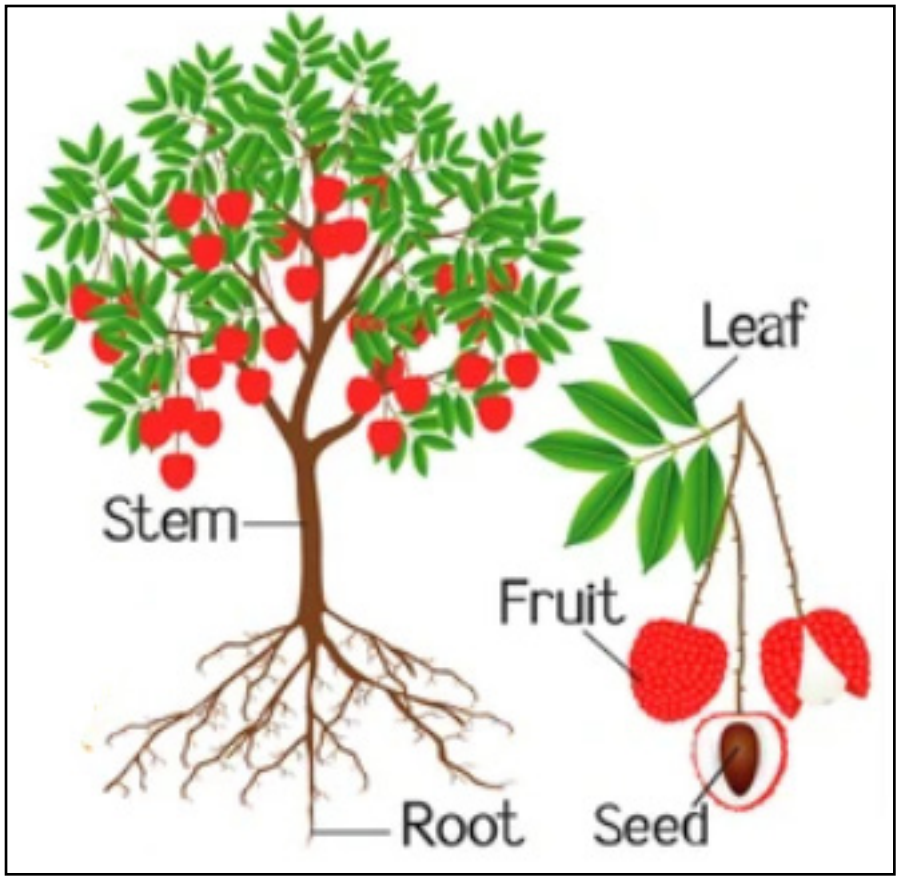
Learning Outcome

Learners will be able to-

- List out the various parts of the plant.
- Describe the function of various parts of the plant.
- Differentiate between root and shoot part of the plant.

Key Ideas

- Root: Parts of the plant below the soil that we cannot see are called the root of the plant. They absorb water and minerals from the soil.
- Shoot: Parts of the plant above the soil that we can see is called shoot of a plant. Shoot system consists of stem, leaves, flowers and fruits.
- Stem: The stem is the part of the plant which is found above the ground. It forms the basis of the shoot system and bears leaves, fruits and flowers. The stem provides support to the plant.
- Leaves: Leaves are the main part of a plant. They contain chlorophyll that assists the plants with setting up their food utilizing sunlight, carbon dioxide and water.
- Flower: Flowers are the most beautiful and colourful part of a plant. They are the reproductive part of a plant. Flowers are the part of the plant that makes fruits and seeds.
- Fruits: Fruits protect seeds. They help plants to spread seed out because animals transport and discard seeds when they eat fruit.



Plant and its Parts

Source: www.shutterstock.com (CC BY: SA)

Prior Knowledge

- Recognising number name
- Identifying different animals and discriminate between their features
- Exploring features of poem
- Associating descriptive words

ICT Integrated Learning Experiences

- Videos can be used for understanding the content or teacher can explain with use of visuals
  https://diksha.gov.in/play/content/do_31320529505879654416734?contentType=Resource
- Videos can be used for exploring a plant and to find out different parts of a plant.
  https://diksha.gov.in/play/content/do_31295498763632640011 18?contentType=Resource
- Students can explore parts of plants and types of plants by using flash cards.

- Activity for students to check their understanding using H5P - drag and drop activity for example: https://diksha.gov.in/play/content/do_31309867543263641612 71?contentType=PracticeResource

Assessment

- The teacher can use MCQ to check the understanding of the students
  regarding the parts of the plant.
- Plant Parts and Their Function Worksheet - Turtle Diary
- Using visuals or images teacher can prepare a quiz based on plant parts

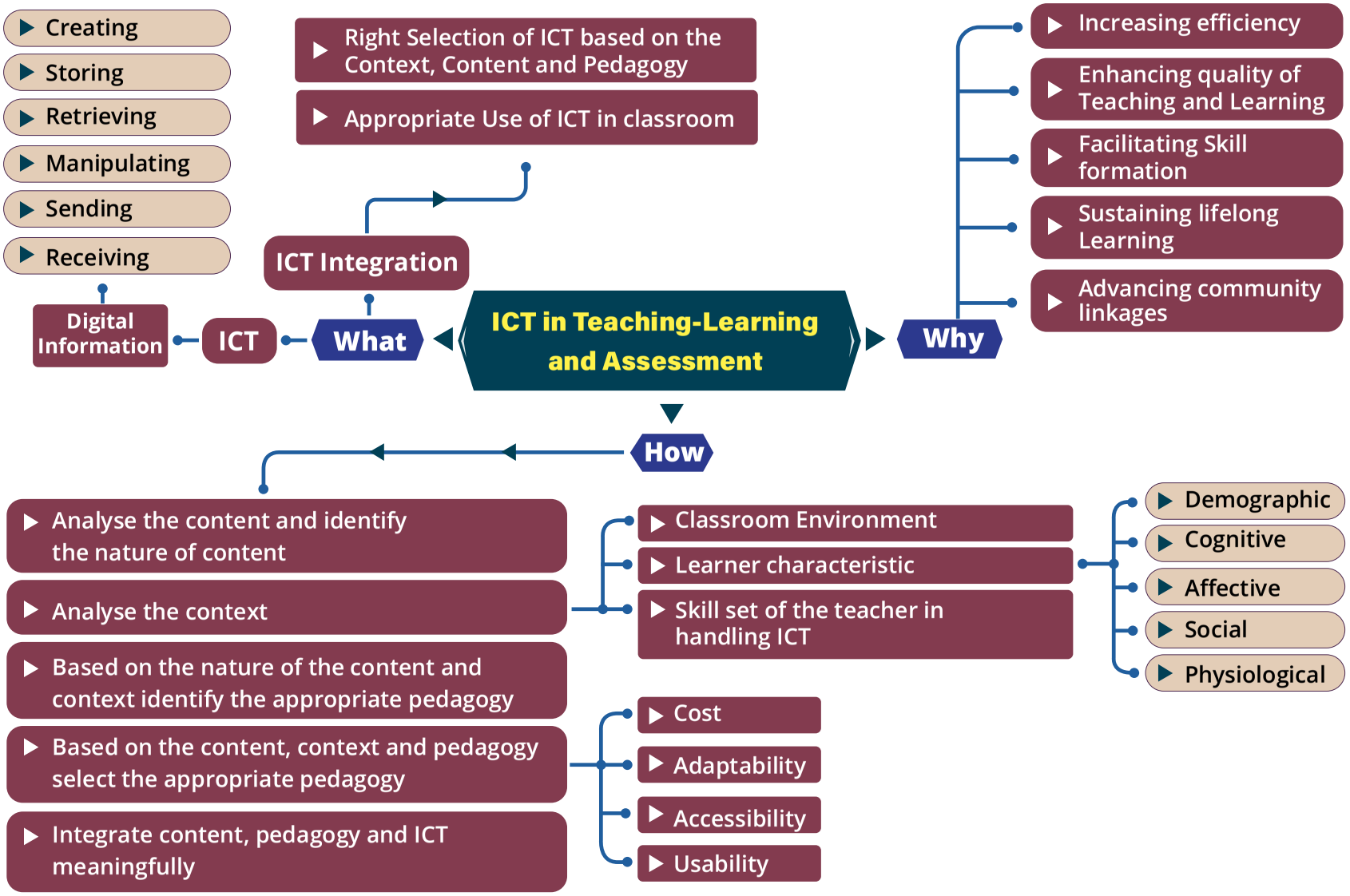
Additional Resources

- https://diksha.gov.in/play/content/do_31306801691919974411 0632?contentType=ExplanationResource

Activities for Extended Learning

- Students can explore the different types of roots, stems, leaves, flowers and fruits in the surroundings, click photographs and make a PPT of it.
- Students can explore the environment and observe the different types of plants.

Summary


ICT in Teaching-Learning and Assessment
What
ICT
Digital Information
Creating
Storing
Retrieving
Manipulating
Sending
Receiving
ICT Integration
Right Selection of ICT based on the Context, Content and Pedagogy
Appropriate Use of ICT in classroom
Why
Increasing efficiency
Enhancing quality of Teaching and Learning
Facilitating Skill formation
Sustaining lifelong Learning
Advancing community linkages
How
Analyse the content and identify the nature of content
Analyse the context
Based on the nature of the content and context identify the appropriate pedagogy
Based on the content, context and pedagogy select the appropriate pedagogy
Integrate content, pedagogy and ICT meaningfully
Classroom Environment
Learner characteristic
Skill set of the teacher in handling ICT
Demographic
Cognitive
Affective
Social
Physiological
Cost
Adaptability
Accessibility
Usability

Portfolio Activity

Assignment

Select any topic of your choice from your respective subject. Identify ICT integrated ideas for teaching/ learning/ assessment for the selected topic and present the following details:

- Subject:
- Levels/Grades:
- Developmental Goals
- Chapter:
- Topic:
- Key Ideas/ Content coverage:
- Prior Knowledge:
- Plan for ICT Integrated learning experiences:
- Plan for Assessment:

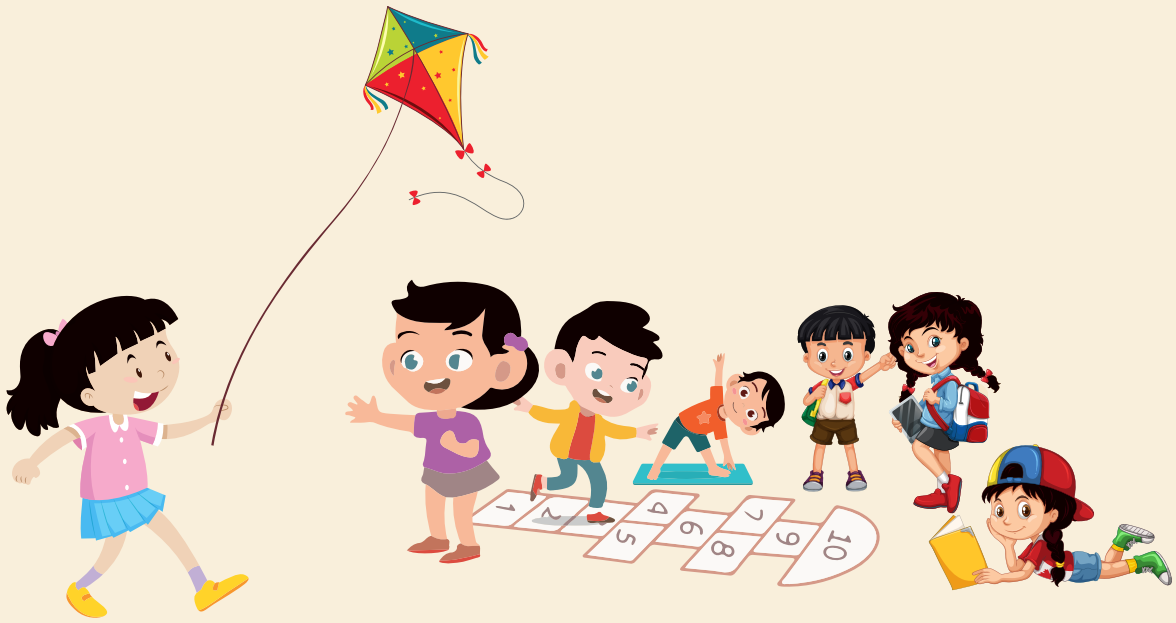
Additional Resources

References

- Tools for teachers - https://www.cemca.org/ckfinder/userfiles/files/Technology%20Tools%20for%20Teachers_Low.pdf

Weblinks

- ICTs Initiatives in School & Teacher Education: https://youtu.be/bJmQHbIAC3k
- ICT Tools - https://ciet.nic.in/pages.php?id=webinar&ln=en



विद्यया ऽ मृतमश्नुते

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