
UNIT 8 ICT BASED ASSESSMENT AND EVALUATION

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8.1 INTRODUCTION

In Units-5 and 7 of Block-2 of this Course, we have discussed various tools and techniques used for assessing learning of children. Many of them such as achievement, aptitude, and intelligence tests are used in the day-to-day classroom situations. Nevertheless, as you know, the constructivist approach in the teaching-learning processes, facilitate teachers to apply innovative information and communication technologies (ICTs) to assess children. For the last few decades, ICT has become an important component of the classroom activities. Teachers gather information via internet and other ICT resources for utilizing it in the teaching and learning process. Children are also using computer and other electronic devices for self-learning and also acquiring more knowledge with the existing curriculum they study. It is under this context; you need to be oriented and equipped in utilizing ICT for evaluating student performance. Various ICT tools are available that help teachers to assess the performance of students. In this Unit we will discuss various aspects such as importance of ICT in evaluation, role of teacher in ICT based evaluation, few forms of ICT techniques used to asses children's progress and use of ICT in preparing and analyzing evaluation tools.

8.2 OBJECTIVES

After going though this Unit, you should be able to:

- discuss the role of ICT in assessment and evaluation,
- describe the use of ICT in various types of evaluation such as online and e-examination,

- discuss the use of different tools to create online/e-exams,
- discuss e-portfolio and e-rubrics as types of evaluation,
- describe the use of different tools to create online/e-exams, and
- identify ICT tools to prepare tests and analyse results.

8.3 IMPORTANCE OF ICT IN ASSESSMENT AND EVALUATION

The nature of teaching, learning and evaluation has undergone changes with the emergence of ICT. The ICT, as you have studied in various units of this course is a broad term that encompasses various tools, techniques, devices and software applications that are used to communicate and disseminate information. The ICTs include television, computer, iPod's, learning management system(LMS), virtual reality, social networking sites, online teaching, online digital repositories, etc. ICT has number of applications in education which develop skills and competencies in individuals to succeed in the workplace and lead a quality life. As we know, in 21st century being complex in nature, education will promote individuals to develop talents and proficiencies to surmount the crisis that they would come across. Even if we have a balanced curriculum, pitfalls exist. In this technology era most of our classrooms fail to adopt and organize teaching-learning sessions integrating technology. What are the applications of ICT in education? This Unit discusses one of such applications of ICT.

In teaching and learning, you may employ ICT for both teaching and evaluating student's performance. You are familiar with the term 'evaluation'. Before moving further, let us be clear about these two terms 'assessment' and 'evaluation'. As you have already studied in Unit-1 of Block-1 of this Course, 'assessment' is a process of determining the present status/condition of something while evaluation is the process of measuring something to judge and value it.' Assessment is a step involved in evaluation. Both assessment and evaluation are integral of the teaching-learning process. These help you to ensure as to how far you are able to transact curriculum and facilitate learning in the children. Now our concern as a teacher is to know as to how we can utilize ICT for both assessment and evaluation? Definitely, there are possibilities which would enable you to find instances where you can use ICT to evaluate student's achievement. Thus ICT acts as an effective medium for teaching-learning and evaluation. Integrating ICT in evaluating children's performance is important for the reasons as follows:

- ICT-enabled assessments provide children scope for engaging in individualised testing situations. In such contexts, the learning proceeds in tune with the pace of the individual attempting tests.
- ICT integrated assessment provides immediate feedback to the children. Technology enabled assessment enhances the confidence level of children as they receive results of their learning instant.
- The assessment could be arranged in such a way that children would get instant feedback and thus can correct their mistakes and move forward.
- The frequency of assessment can be increased that would benefit children and will continuously engage them in their studies.

- It generates interest and increases motivation among learners as they try out varied types of technology assisted tests
- Technology assisted testing/assessment techniques are cost effective and can be easily prepared.
- The principles of learning like ‘own time and own pace’ is emphasised while using ICT for assessment.
- It helps to develop higher order thinking and digital literacy skills among children
- The problems like “access and quality” are minimised with the use of ICT in assessment and evaluation.
- It caters to the tastes of multiple audiences who differ in intelligence, creativity, etc.

Check Your Progress 1

- Note :** a) Write your answers in the space given below.
b) Compare your answers with those given at the end of the unit.

1. Why do you consider ICT important in evaluating students’ performance?
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8.4 USE OF ICT IN VARIOUS TYPES OF ASSESSMENT AND EVALUATION

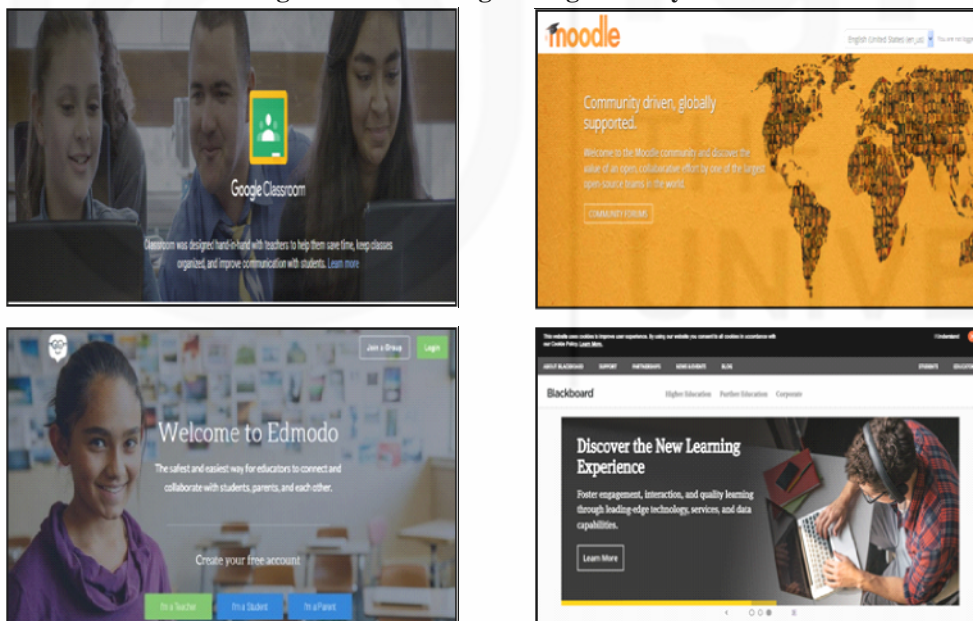
Evaluation, as you know, is an integral part of teaching-learning process. It enables you to evaluate the instructional activities and learning achievement of children. The paper and pencil tests, unit and term end examinations, oral questioning techniques are some of the traditional evaluation methods. But the emergence of ICT has influenced evaluation methods. A simple example would be recording the marks of children in an excel sheet. Earlier the marks of children were recorded in paper sheets but today application softwares such as Microsoft excel are used to record it. It is to be noted here that the use of ICT in evaluation would be viewed on two dimensions; **technology as a tool and technology as an assisting medium**. Let us discuss two simple examples. A student using a video camera to record the teaching session would be an example of using technology as a tool while analysing the recorded video would be a case of using technology as assisting evaluation. Before moving further, you may go through the graphic, which will help you to differentiate the different types of evaluation.

Figure 8.1: Types of Evaluation

Diagnostic Evaluation	Formative Evaluation	Summative Evaluation
The type of evaluation conducted at the beginning of teaching session to determine the learning level of children and to group them. As per the learning levels, teacher may organise the learning experiences/activities	This type of evaluation is conducted during the course of teaching to identify the learning performance of children. Help children to make out performance in learning and teacher may modify learning activities accordingly.	This type of evaluation is conducted at the end of an instruction activity/unit/course. This will help to grade learners and to judge the effectiveness of teaching. Summative evaluation helps in value judgement.

As a teacher, our concern is about using ICT in various types of evaluation. Let us explore the various ways of it. As mentioned, diagnostic evaluation is performed before the teaching session. At this stage you may utilize ICT in place of verbal questioning. For example, multiple choice questions can be prepared in computers (using any application software) and children may be directed to attempt those questions. While preparing questions, animations and motivating appeal should be provided. Similarly in case of formative evaluation, children may be directed to attempt the questions provided in the learning management systems (platforms like, Google classroom, MOODLE and Edmodo may be used. The home page screen shots of few such platforms are given in Figure 8.2. During summative evaluation, the possibilities of online examination could be tried out.

Figure 8.2: Learning Management System



(Sources: <https://moodle.org/>, <https://www.edmodo.com/>, <http://anz.blackboard.com/>, <https://classroom.google.com/h>)

Activity 1

How will you use technology in formative evaluation? Suggest your plan?

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Check Your Progress 2

- Note:** (a) Write your answers in the space given below.
(b) Compare your answers with the one given at the end of this Unit.

2. Differentiate between diagnostic, formative and summative evaluation.

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3. How will you use technology for summative evaluation? Suggest a plan.

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8.5 ROLE OF TEACHER IN TECHNOLOGY ENABLED ASSESSMENT AND EVALUATION

Teachers play a pivotal role in deciding the technology that may be incorporated for testing the students' achievement. Technology can be employed both for evaluation and assessment as assessment is a part of evaluation. In earlier days, paper and pencil tests were the prominent testing devices but today, number of technological tools have been identified and developed that makes testing easier and more joyful for children. So whether it is evaluation or assessment, the creativity and skill of teacher matters in utilizing technology. A framework namely, Technological Pedagogical Content Knowledge (TPACK) could be of great use to teachers at this stage. The framework simply describes the individual and combined knowledge of any teacher in three areas namely Technology, Pedagogy and Content. TPACK is basically defined as a framework of teacher knowledge for technology integration. Teacher knowledge is defined as a complex interaction and intersection among three bodies of knowledge within the framework of TPACK: content, pedagogy and technology (Koehler & Mishra, 2008).

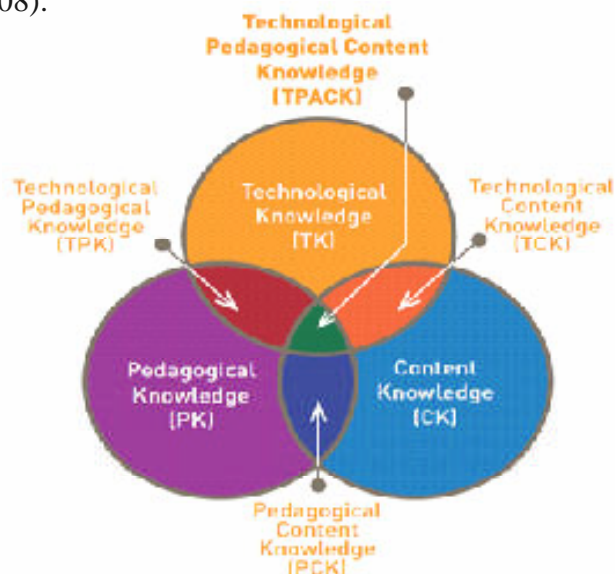


Figure 8.3: Technological Pedagogical Content Knowledge (TPACK)

(Source: <https://www.education.ie/en/Publications/Policy-Reports/Digital-Strategy-for-Schools-2015-2020.pdf>)

TPACK could be considered as one of the bases for selection and integration of technology in assessing children’s performance. Thus your role in technology-based evaluation is to employ various technologies in testing. This would be easy if you use TPACK framework, which encompasses decisions concerning technology based evaluation. Let us see how the concept of TPACK is employed in assessment. For example, suppose you had taught the concept kinetic energy to eighth class students. Kinetic energy is the energy possessed by an object due to its motion. After teaching the concept, you try to check whether the students have grasped the concept or not? Rather than asking verbal questions, you may employ technology. At this stage, remember that, you should have knowledge of both pedagogy and content which help you to transact the concept in a meaningful way.



Coming to technology based assessment, let us see what you have done. First, you would have listed the technologies and various applications like computer, online testing, rubric, computer-based testing, learning management systems, applications for developing quizzes and multiple choice questions (MCQs), etc. From the list, you may select computer testing and applications used to develop MCQs. In the process, you may display the below given figure and ask children to identify the ball that would make bigger splash. For that, a MCQ was prepared (may use Hot Potatoes, application for creating MCQ’s) as given below:

Q.1: Which ball will make bigger splash?

- a) Small
- b) Big
- c) Both



The above example is a simple way of employing technology in assessment. It is up to you what technology is to be adopted for assessing children’s learning. So number of factors need to be considered for utilizing technology for assessment. Let us summarize these roles as given below:

- Decide the content/topic to be assessed
- Identification of suitable technologies for assessment
- Preparation of relevant tools and techniques
- Placement of questions to be included in the assessment
- Reviewing the questions
- Tryout of the tool and rectifying mistakes
- Execution of the test

Activity 2

Prepare a teaching module employing TPACK framework. Discuss the factors that you have considered in selecting the technologies while preparing the teaching module.

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Check Your Progress 3

- Note:** (a) Write your answer in the space given below.
(b) Compare your answer with the one given at the end of this Unit.

4. Discuss the role of a teacher in technology-based assessment and evaluation.

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8.6 ONLINE AND E-EXAMINATION

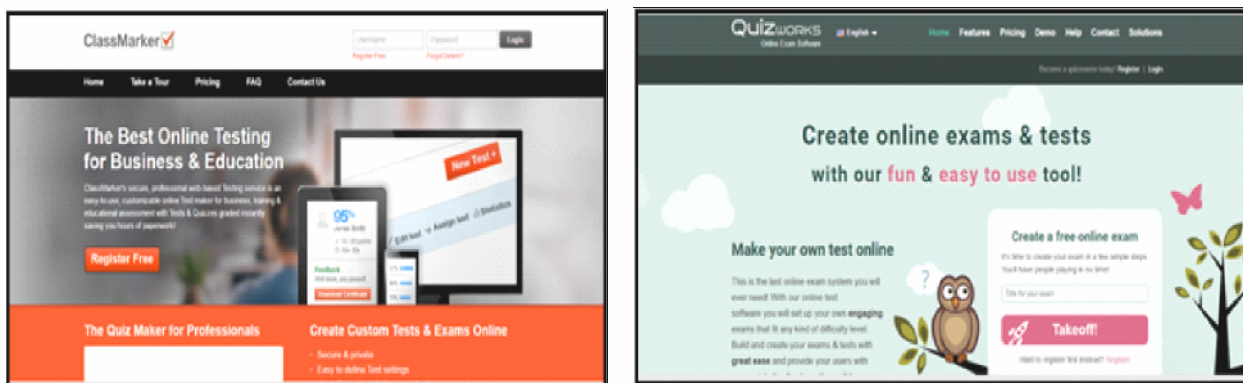
The terms online and e-examination connote the same meaning and are used interchangeably, even though difference exists between them. **In online examination the assessment occurs in an internet environment while e-exams could be through any digital resources.** For example, the LMS platform like MOODLE require an internet connection to work and the assessment occurs in an internet environment. While the LMS platform, eXe software (eXe is a website to develop online content) operate both offline and online. Thus the assessment carried out in eXe is more of electronic assessment in nature. As the name indicates, online exams occur in an internet environment; mostly carried out with the help of computers. While e-exams can use any form of digital devices, the widespread use of intent technologies has exposed more avenues in engaging assessment through digital applications. Similarly, online and e-exams are gaining popularity in the education sector.

How examinees appear in online exams/e-exams? Do examinees have to take any precautions? What is the nature of such exams? Let us try to answer few such questions related to online/e-exams. As you know, in traditional paper and pen exams, the examinees will be provided with a question paper and blank answer sheet to write on, for a fixed interval of time. In online/e-exams, the following procedure is carried out:

- The students will be allotted an **User ID and Password**. The same is entered in the pre-arranged computer ready software. Thus students will get access only if they enter correct user name and password.
- As the student can access the examination software by entering username and password, the examination time starts; time will be displayed at a visible position in the computer screen. So students have to **Be Ready Themselves** to attempt the questions. Unlike in conventional examination, extra time will not be granted.
- Attempt questions and enter the answers by **clicking ‘mouse’**. Unless the students click mouse and thereafter **‘Save and Next Button** is pressed, the answers will not be recorded. This is one of the important steps students have to remember in online /e-exams; mouse clicking and saving the answers as they proceed.
- Conventional examination has the option of attempting questions at random but in online/e-exams; **‘Sequential Move’** is preferred as forth-back movement is time consuming. Thus attempt questions in sequential manner to save time but students can skip questions (if they don’t know the answer) and can be attempted at a later stage
- Students can proceed in a sequential manner and the progress of attending exam will be displayed; may be question wise or percentage mode. Thus online exams/e-exams shows the progress of examination, and students would get the option of **‘Assessing their Progress’**.
- The final step in online/e-exams is very important; never forget to **Click Submit Button**. Unless submission is done by clicking mouse, the answers will not be recorded in data base.

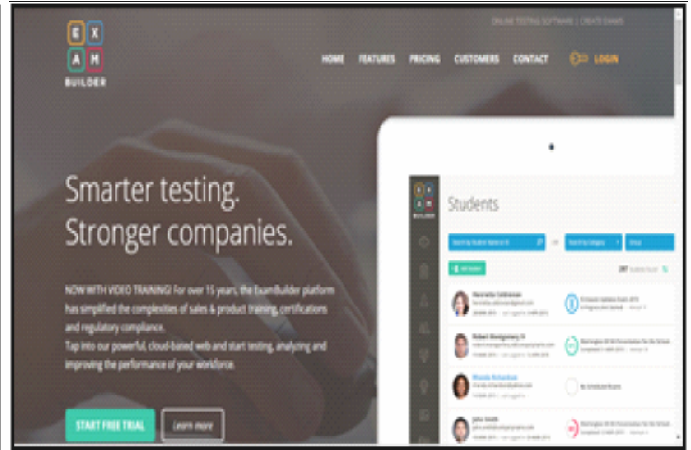
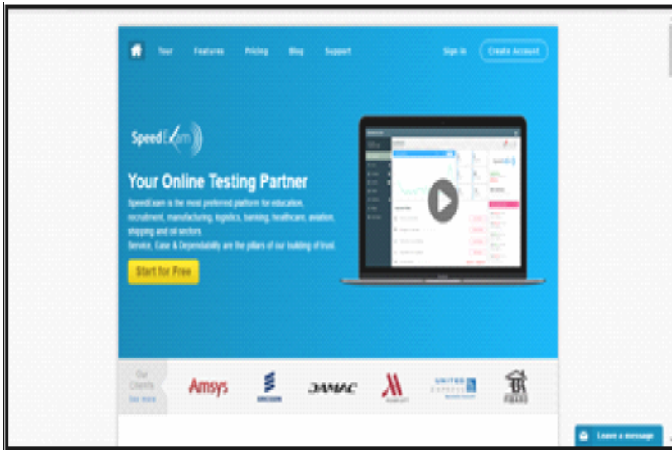
Multiple software’s/applications, both paid and free are available. You can use them to develop online/e-exams. You should search the best available options and use some of them in your teaching practice or sessions in your classroom. Home page of some of the online/e-exams creating websites is given as follows:

Figure 8.4: Home pages of online/e-exams creating websites



Source: <https://www.classmarker.com/> Source: <https://www.onlineexambuilder.com>

Techniques and Tools of Assessment and Evaluation



Source: <http://speedexam.net/> Source: <https://exambuilder.com/>



(Source: [http://www.quiz-creator.com](http://www.quiz-creator.com;); and <http://www.flubaroo.com>)

Activity 3

Select any free online or e-exam creator website/software and prepare an e-exam for the children of your class. Try them in your class and identify the difficulties you have faced in developing and administering it.

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Features of online/e-examination: As you know, pen and paper examinations require well constructed plans for implementation. Similarly, online and e-exams also need to be planned well in advance before they are put into practice. Online and e-exams should have the following features:

- **Examination instructions:** The duration, marks allotted for each section/question, class, mode of answering, type of questions, etc. must be clearly mentioned.

- **Registration:** Students attempting online and e-exams are required to register or open an account, where in the questions to test their learning will be posted. Either the examination will be available online which can be assessed by entering their login password or else the examiner would set the questions which can be only attempted by the students.
- **Valid time duration of the examination:** The examination will be valid for a fixed time afterwards it is unavailable. This is because the pattern of the exam is set in such a way that the students will not get extra time to attempt question unlike in the traditional examination.
- **Time reminder:** As the students progress in answering, the system itself will generate warnings about the duration of the time left, questions unattended or partially attempted and so on. Such prompts act as reminders for students to complete the examination on time.
- **Submission of answers:** Students can submit answers as a whole or a single question at a time. In both the cases before submitting the answer warning signs would be generated : whether answering is complete, would they like to modify answers, and so on. This helps students in rechecking their answers.
- **Declaration of results:** There are two options as children submit answer. The system may generate the status of answering (whether the answer is right or wrong), or else after submitting the answers of all the questions, the result may appear as a whole.

Advantages of online/e-examination: It is a fact that lots of preparations are required to conduct paper-pen examinations such as preparing schedule of examinations, development of question papers, arrangement of examination halls, evaluation of answer scripts, declaration of results, arrangement of human power, etc. Even after spending a great deal of time and effort, complaints may arise. In such a situation, online and e-examinations have great relevance. The following are some of the advantages of online/e-examinations:

- Human errors are minimal in e-exams. In conventional exams, the possibility to commit mistakes is high while evaluating answer scripts, entering evaluated grades, identifying malpractices, etc. On the other hand most of the activities in e-exams are digital in nature and hence errors are minimal.
- The habit of indulging in malpractices in multiple ways can be eliminated. As children are provided with computer or other electronic gadgets to attempt examinations, the possibility of malpractices is minimum.
- The conventional exams carry question papers and answer sheets to distant places and within the examination halls but doesn't happen in online/e-examinations. Thus the physical movement of examination materials is less for online exam.
- The number of the human power required is less in online examinations. Conventional examinations require lots of human power in organising but online/exams require less human power.
- The workload in the conduct of conventional examinations is vast such as in setting question papers, executing of examinations, evaluating answer sheets and so on. While online/exams entail less workload since distribution of question papers is done once, evaluation and declaration of result is ICT based and so on.

Disadvantages of online/e-examination : Let us now discuss the disadvantages of online/e-exams. As we know, in the digital era many of the educational institutions and government agencies utilize technology. But the fact is that technology has some disadvantages. Some of the disadvantages of online/e-exams are as follows:

- The competence is in developing online/e-exams which many of the stakeholders associated with the conduct of e-exams lack.
- Online/e-exams require specialised settings and facilities to conduct, a cumbersome job for institutions and teachers.
- Chances of technical error in electronic machines are expected and as a result examinations may fail.
- The problems of viruses/bugs/internet attacks in software are a threat for online/e-examinations.
- Children need to be trained in attempting online/e-examinations.
- The cost involved in online/e-exams is higher and creates problems on the part of institutions/organisations.

Check Your Progress 4

- Note :** a) Write your answers in the space given below.
b) Compare your answers with those given at the end of the unit.

5. Discuss the procedures followed in organising online/e-examinations.

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8.7 LEARNERS' E-PORTFOLIO AND E-RUBRICS

Generally the schools keep record of marks scored by the children in different subjects. In addition to that, data about their family background, physical records, involvement and achievement in extracurricular activities, etc., are also recorded. Why do we collect such details? No doubt, it is part of evaluation/assessment. The grades/ marks represent children's performance. At present, continuous and comprehensive evaluation (CCE) is practiced in schools in which students are continuously assessed all through the academic sessions on various parameters. Parameters such as learning performance, participation in co-curricular activities, involvement in various activities of the school, etc., are continuously assessed. Thus, the assessment is comprehensive and continuous.

The multiple data relating to a student is recorded systematically. Portfolios document learning performance, activities undertaken, details of participation in co-curricular activities and other relevant data concerning the student throughout the session. Such record is highly useful in evaluating the student's performance during his/her schooling. Since we emphasis the culture of digital teaching-learning, portfolios are replaced with e-portfolios. What are

e-portfolios? **“e-portfolios is a valuable learning and assessment tool. An e-portfolio is a digitized collection of artifacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution. This collection can be comprised of text based, graphic, or multimedia elements archived on a website or on other electronic media such as CD-ROM or DVD. An e-portfolio is more than a simple collection of data-it can also serve as an administrative tool to manage and organise work created with different applications and to control who can see the work. E-portfolios encourage personal reflection and often involve the exchange of ideas and feedback”** (Lorenzo and Ittelson, 2005).

E-portfolio also known as ‘digital portfolio’ or ‘online portfolio’ is the record of digital works performed by the student. The digital works include text material prepared in Microsoft word software/PDF or other application software’s, video/ audio clips, digital images, digital reports, blog entries, comments posted in discussion for a power point presentations, etc. The digital creations of an individual when stored in digital formats either in online operated portfolio or any digital resources represent an e-portfolio. E-portfolio is the latest trends in teaching –learning as it is an immense tool for evaluating students’ performance. By looking at the digital collection, teacher would be able to judge the performance of learning.

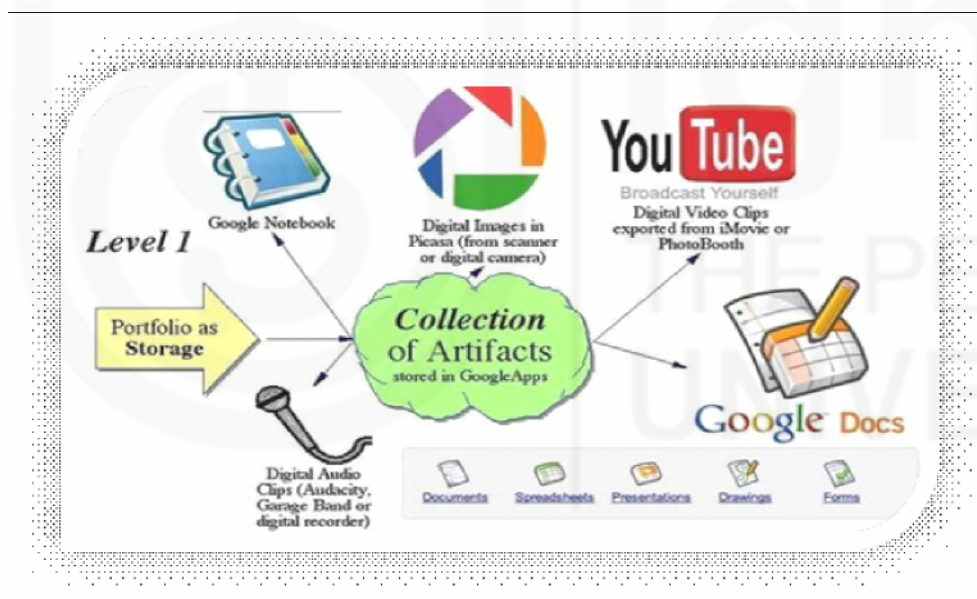


Figure 8.5: Artifacts of e-portfolio

(Source: <http://www.informationweek.com/software/7-ways-to-create-e-portfolios/d/d-id/1110673>)

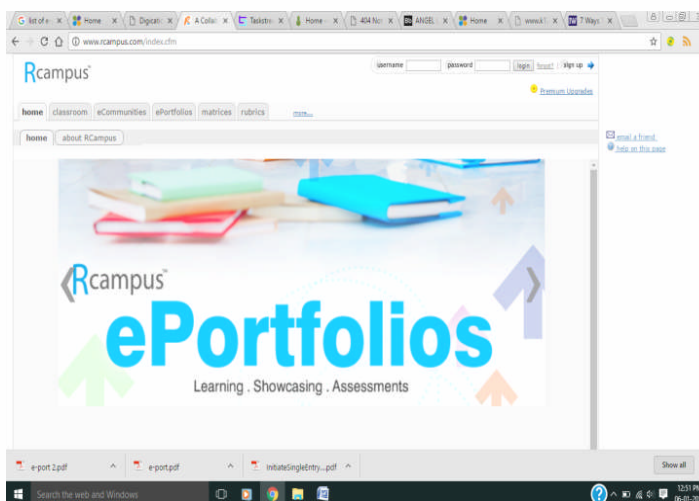
As we know, conventional portfolio is a collection of different non-digital works of a student, such as assignments, reports and so on; while e-portfolios are his/her digital creations like a presentation, project, collection of photography, etc. Why are e-portfolios important in education? First, e-portfolio is a tool for assessment and evaluation. The record of activities performed by the students is accumulated in e-portfolios and at a later stage they are used to judge their performance. Secondly, e-portfolios act as tool for self evaluation. The digital constructions of students will give themselves a status of their performance in various activities. For example, a video clip submitted by a student can be viewed at a later stage, and errors can be identified. Those mistakes can be improved

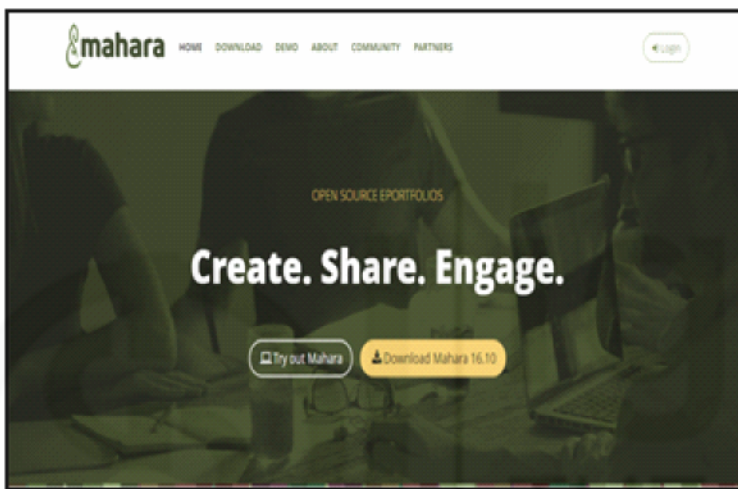
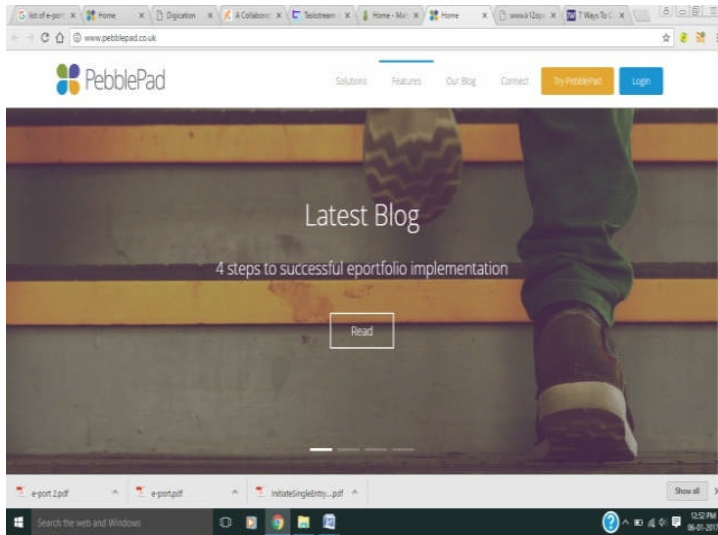
while developing a video clip second time. Third, it is an evidence of children's work. Many a times, records are being missed in schools but in case of e-portfolios, the digital works are stored in digital formats and the chances of missing them are fairly low.

As a teacher, you would be more interested in gaining knowledge about the ways of developing e-portfolios. The questions might come to your mind such as: How e-portfolios are developed? Is there any software to develop e-portfolio? What digital collections would be incorporated in e-portfolio, and so on. Developing an e-portfolio is not a burdensome activity. As you know, today the teaching-learning process engages children in multiple activities, such as conducting a project, preparing assignments, etc. To prepare the assignments children refer different website, download images, etc. Then they prepare the text in MS word or such application softwares. So here, the assignment prepared by the student is in digital form and the same could be included in the e-portfolio of that particular student. There are number of tools/software (free/paid and offline/online), where you can place the digital formations of your students. To create e-portfolio, firstly you have to signup in any particular website. This will generate your account on that particular website. Thereafter, you can start recording the digital works of your children. Some websites are given below (Also the screen shots of home page of some of these websites).

- www.rcampus.com
- www.pebblepad.co.uk
- www.portfoliogen.com
- www.mahara.org
- www.digication.com
- www.taskstream.com
- www.pebblelearning.com
- www.myefolio.com
- www.foliotek.com
- www.epsilen.com
- www.foliospaces.org

Figure 8.6: Commercial/Open Source E-Portfolio Creation Tools/Websites





Source: <https://mahara.org/>Source: <http://www.portfoliogen.com/>

Activity 4

Select a free e-portfolio creator (even google apps) and develop one e-portfolio suitable for children of your class. Describe the process that you have carried out in developing e-portfolio.

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Types of e-portfolios: As discussed in preceding sub-sections, e-portfolios are also known as digital portfolios, web portfolios and online portfolios. Basically the nomenclature is based on the format of portfolios. Generally, online portfolio functions with the help of internet while other formats are internet independent. Based on the functions of e-portfolios, they are classified into three; developmental (or working), assessment and showcase.

- **Developmental (working) e-portfolios:** These e-portfolios collect and record students' activities. For example, students are assigned a project of two months as a learning activity. During the period of the project, they have to submit short reports every 25 days in MS Word format. Such a digital report will be stored in the database of e-portfolio. Thus developmental e-portfolios record activities over a period of time. The primary objective of recording the progress is to communicate the progress to the students and the teachers.
- **Assessment e-portfolios:** These e-portfolios collect and record children's activities for the entire duration of the programme/course. The primary objective is to assess and judge the competency of children in specific skills/ courses and programmes. These portfolios are submitted for assessing and evaluating the performance in a learning activity/programme. For example, digital formats of assignments in a single subject submitted during his/her studies in eighth class.
- **Showcase e-portfolios:** These portfolios exhibit exceptional works/skills of an individual. This may include works in preparing reports, inserting graphic/pictures in preparing write-ups, development of quality video/audio clips and so on. These portfolios happen to judge one's performance, selection to a job, etc. Thus, as the name indicates, showcase e-portfolios are images on individual persona.

Check Your Progress 5

- Note :** a) Write your answers in the space given below.
b) Compare your answers with those given at the end of the unit.

6. Define e-portfolio? Discuss the artefacts 'recorded in e-portfolios.

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E-Rubric: During learning, children participate in various activities, which are assessed to judge their performance. Generally achievement tests are employed in evaluating the children. What is rubric? Rubric is a set of guidelines on which students' performance is assessed. A rubric is a unified criteria for students' work that includes descriptions of the level of performance. Thus a rubric will have few set criteria and description of levels of performance for those criteria. Rubric is more descriptive in nature such that, the skills to be evaluated are described as various levels and that the level of the students is identified for that particular skill. Even though descriptive, the level of performance is used in judging the performance of individual. Thus the main purpose of rubric is to assess the performance. For example, if you aspire to measure the skill of children in using a thermometer to read temperature; the rubric prepared for

the same would include skills such as holding thermometer, measuring temperature, recording the reading and so on. Thus the parameters included in rubric are holding thermometer, measuring temperature, recording the reading and so on.

To develop rubric, the assessment levels such as very poor, poor, average, good, very good for any particular parameter will be assessed (See Table 8.1). You can also refer Unit-7 of this Block. These parameters are developed as template of rubric. For example, the rubric template would look like the following:

Table 8.1: Rubric Template

Parameter	Level 1 (Very Poor)	Level 2 (Poor)	Level 3 (Average)	Level 4 (Good)	Level 5 (Very Good)	Total Score
Holding Thermometer						
Measuring temperature						
Recording Reading						

Now let us understand e-rubric. In a digital learning atmosphere, the rubric is prepared in digital format. The rubric that we have discussed above (Table 1) is prepared in non-digital format (may be in normal paper or other non-digital resources). While e-rubric (electronic-rubric) is prepared by any digital means. Generally, e-rubrics are prepared with the help of rubric creators/websites/ online tools, etc. The e-rubrics are stored in either computers, mobiles, CD-ROMs, hard drives or any storage devices, which can be retrieved and manipulations are possible at any time. Thus whenever a task is assigned, the teacher would prepare its rubric template and the performance level will be recorded against each criteria. At the completion of task, the rubric will be used to assess the performance of the student.

As a teacher, you may be interested in gauging information on tools used to develop e-rubrics. Similar to e-portfolios, you may find websites either paid/free (commercial/non-commercial; open source), which may be employed to develop e-rubrics. Few such websites are mentioned below:

- <http://rubistar.4teachers.org>
- <http://www.assessmentfocus.com>
- <http://www.rcampus.com>
- <http://www.teach-nology.com>
- <http://www.learner.org>
- <http://www.essaytagger.com>
- <http://www.edudemic.com>
- <http://edtechteacher.org>

Techniques and Tools of Assessment and Evaluation



Figure 8.7: Home page of websites used for creating e-rubric

(Source: <http://rubistar.4teachers.org>, <http://www.assessmentfocus.com/>, <http://www.rcampus.com/>, <http://www.teach-nology.com>)

Importance of e-rubric : We have discussed the basic purpose of building of e-rubric. Basically, e-rubric helps us evaluating a students' performance. Let us elaborate its importance in the teaching learning and evaluation process. In a teacher's point of view, e- rubric is a tool to set his learning objectives. While deciding on the topic or activity to be transacted, he/she should think of the learning objectives and skills to be developed among students. Accordingly different criteria will be developed and recorded in the e-rubric template. Later, the students will be evaluated based on the e-rubric and that will help you, as a teacher to know the performance of the students. This will also help you to reflect on your teaching process. In the case of students, e-rubric is an instrument for self reflection. While teacher identifies the criterion for any particular learning activity/task, the same could also be discussed with students. Thus students are aware of the criteria based on which they are going to be assessed. Thus as students proceed with the task, they would pay attention on the criteria leading to development of learning skills as desired by the teacher. Such a process provides scope for students' self-reflection and to become aware of their own learning.

Steps to Create E-Rubric

As we have discussed, e-rubric is an effective tool to assess children's performance. Generally teachers can prepare two types of e-rubric; one general e-rubric and the other specific e-rubric. In general e- rubric, general activities and its criterion will be included. For example, writing an assignment; in writing assignment, the criterion includes, writing a good introduction, body (content), conclusion, supporting examples, figures and so on. Irrespective of the subject, the format followed in writing assignment remains the same. In specific e-rubric, criterion for specific activities is included. For instance, performing experiment in a chemistry laboratory. In the laboratory, each student is required to perform certain activities; may be mixing chemical in a specific proportion, taking measurements and so on. Such tasks are specific tasks and each student is supposed to develop those specific skills. The following steps should be used to develop an e-rubric.

- i. Select the learning activity from your subject of teaching. It can be either general or specific in nature
- ii. List the criterion relating to the learning activity. At this stage, children may also be encouraged to suggest criterion.
- iii. Decide levels for each criterion ranging in different modes; can be 1 to 5, low to high, minimum to maximum, poor to high and so on. A five point level would be reasonable for assessing children on varied tasks.
- iv. Develop re-rubric template. The e-rubric template will show the criterion and different levels for specific or general learning activity. You may also leave a column for students to write their comments. The e-rubric can also be shared with students.
- v. Execute the learning activity and record scores against each criterion in the e-rubric template.
- vi. Asses and evaluate children's performance based on the scoring in e-rubric.
- vii. If required, revise the e-rubric based on the feedback and performance of children.

Activity 5

Identify a task of your choice and develop its criterion in a rubric template. Carryout the task in your class and record the level of children against each criterion.

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Check Your Progress 6

Note : a) Write your answers in the space given below.
b) Compare your answers with the one given at the end of the unit.

7. What is e-rubric? Why e-rubrics are important for students?

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8. Describe the steps for developing an e-rubric.

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8.8 USE OF ICT TOOLS FOR PREPARING TESTS AND ANALYZING RESULTS

In the earlier section, you have studied that ICT has immense opportunities in assessment and evaluation. Till now we have discussed, various ICT resources, online/e-examination, e-portfolio and e-rubric. As a result, today, the potential of ICT is being explored in multiple ways. In this Section we will discuss specific tools, websites and resources which can be used to construct questionnaires and tools that have inbuilt options to analyse test results.

ICT may be employed at three stages for assessing children, they are:

- before beginning of the teaching session,
- during the teaching session, and
- after the teaching session.

In the beginning, assessment will help you to identify the learning level of children, while during teaching session, it will give you an idea of how far children have achieved learning objectives and at the end, assessment helps to find out the achievement of the learning objectives. As we have discussed earlier, teachers

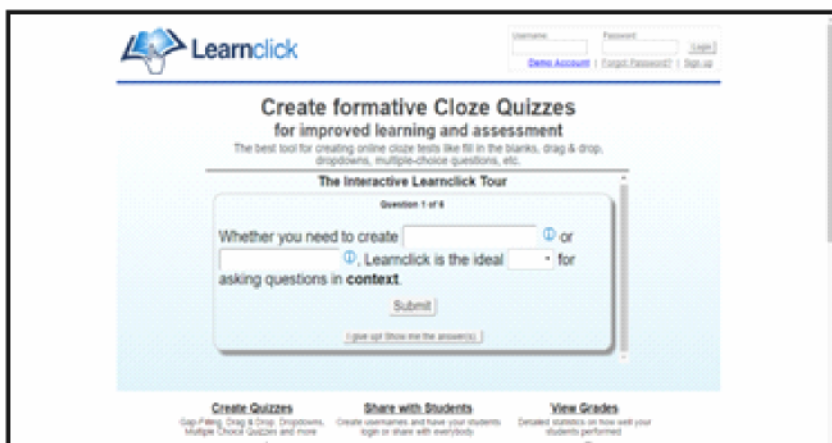
have important role in utilizing ICTs. It is up to the teacher to select appropriate technology or tool to assess children at various levels of teaching. You can make use of mobile technology to assess children’s learning in the beginning or during teaching session. Even computer made tests can also be employed. At the end of the teaching session, computer made tests and online or e-exams are preferred. The following websites (home page of some of the websites are also given in Figure 8.8) can be used to create test of your choice.

Commercial website

Free website

- <https://www.classmarker.com/>
- <http://www.contentgenerator.net/>
- <http://www.easytestmaker.com/>
- <http://elearningbrothers.com/>
- <http://www.ecomscotland.com/>
- <http://www.exambuddy.com/>
- <https://www.igneon.com/>
- <http://www.mygradebook.com/>
- <https://www.onlineexambuilder.com/>
- <http://www.proprofs.com/quiz-school/>
- <http://www.questiontools.com/>
- <http://www.questionwriter.com/>
- <https://www.quia.com/web>
- <http://www.quiz-builder.com/>
- <http://ww17.quizlet.cm/>
- <http://www.respondus.com/>
- <http://www.help4teaching.com/>
- <http://www.qarbon.com/>
- <http://eng.smartlite.it/>
- <https://yacapaca.com/>

- <http://www.fiftysneakers.com/>
- <http://funnelbrain.com/>
- <http://web.uvic.ca/hrd/hotpot/>
- <http://www.kubbu.com/>
- <http://www.cram.com/>
- <https://quizslides.com/>
- <https://www.studyblue.com/>
- <http://www.btl.com/surpass/>
- <http://www.schoolsonic.com/>
- <http://www.learnlick.com/>
- <http://www.mobilestudy.org/>



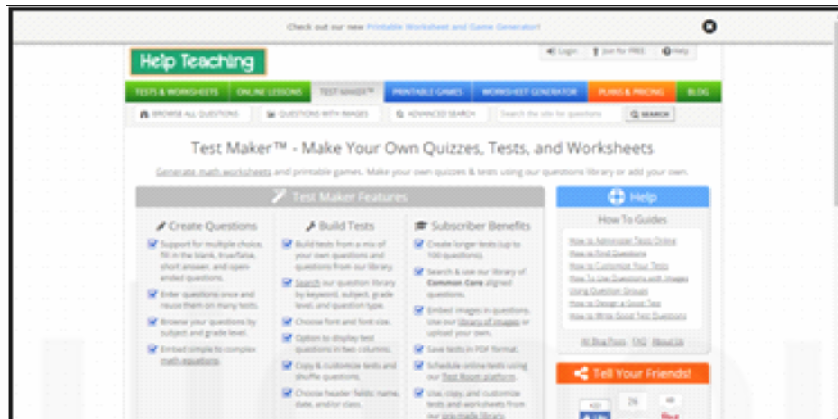
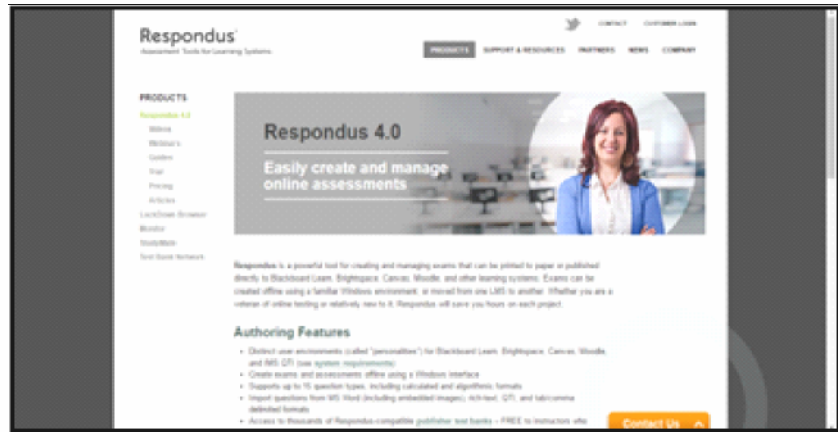


Figure 8.8 : Commercial and free websites for ICT tools

In conventional tests, answers are written on papers while ICT tests employ mainly computers. A teacher has to devote lot of his/her time to conduct conventional examinations. In the case of computer made tests, the time devoted is considerably less. Let us understand as to how the time gets reduced in organization of the ICT based of tests. To substantiate, let us pick a free tool from the list given in Figure 8, <http://www.learnclick.com/>. Learnclick is free application software that provides choices in developing tests of varied nature. You will find options, such as Blank Boxes and Dropdowns, Generated Dropdowns, Drag and Drop, Matching, Multiple Choice (one answer correct), Checkboxes (several answers correct), Essay (open-ended question), Description, etc. As you browse 'learnclick', the homepage will appear where you will find sub-links to create tests. The screen shot is given in Figure 8.9:

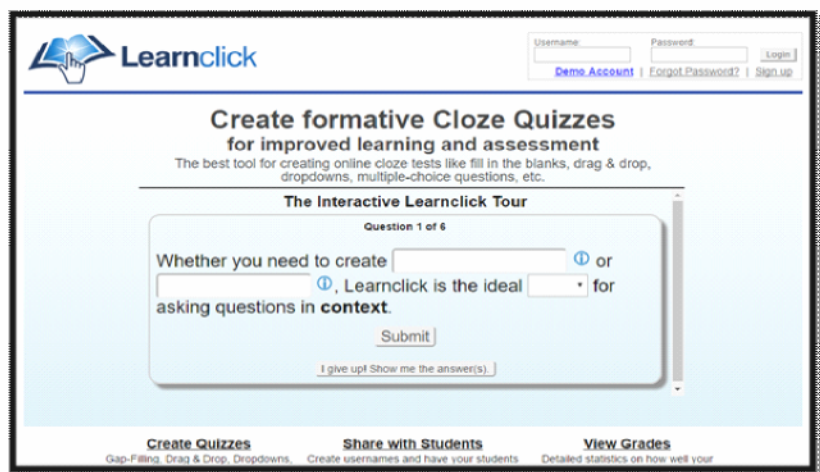


Figure 8.9 : Learnclick – A free application software

(Source: <http://www.learnclick.com/>)

After opening the home, click on the sub link “Create Quizzes, which will take you to another window as shown below.

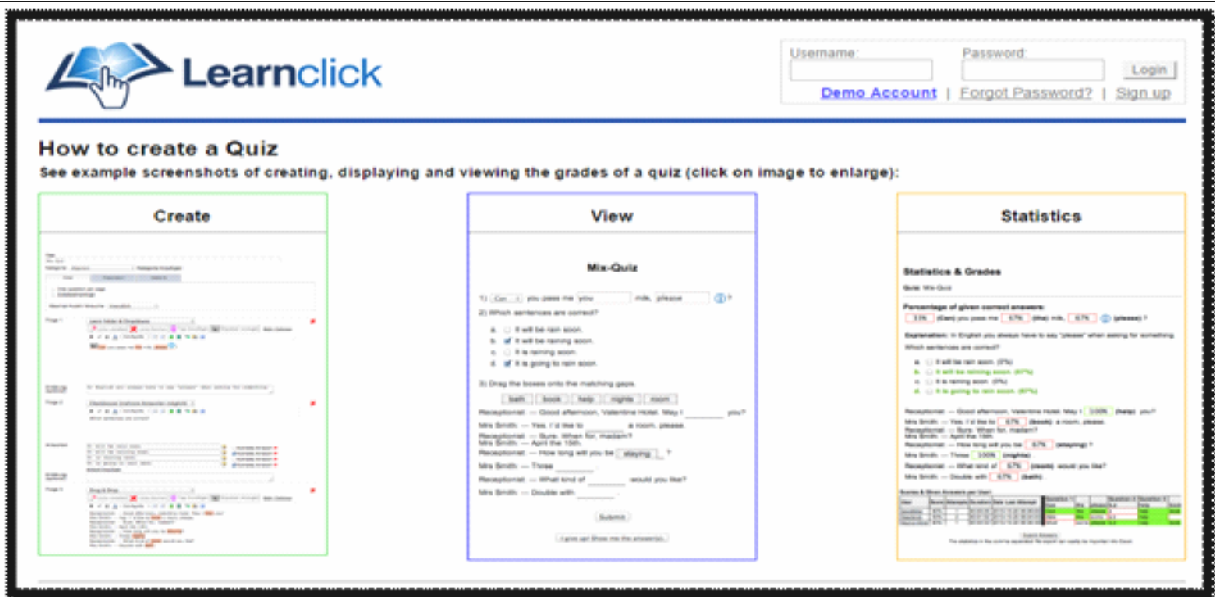
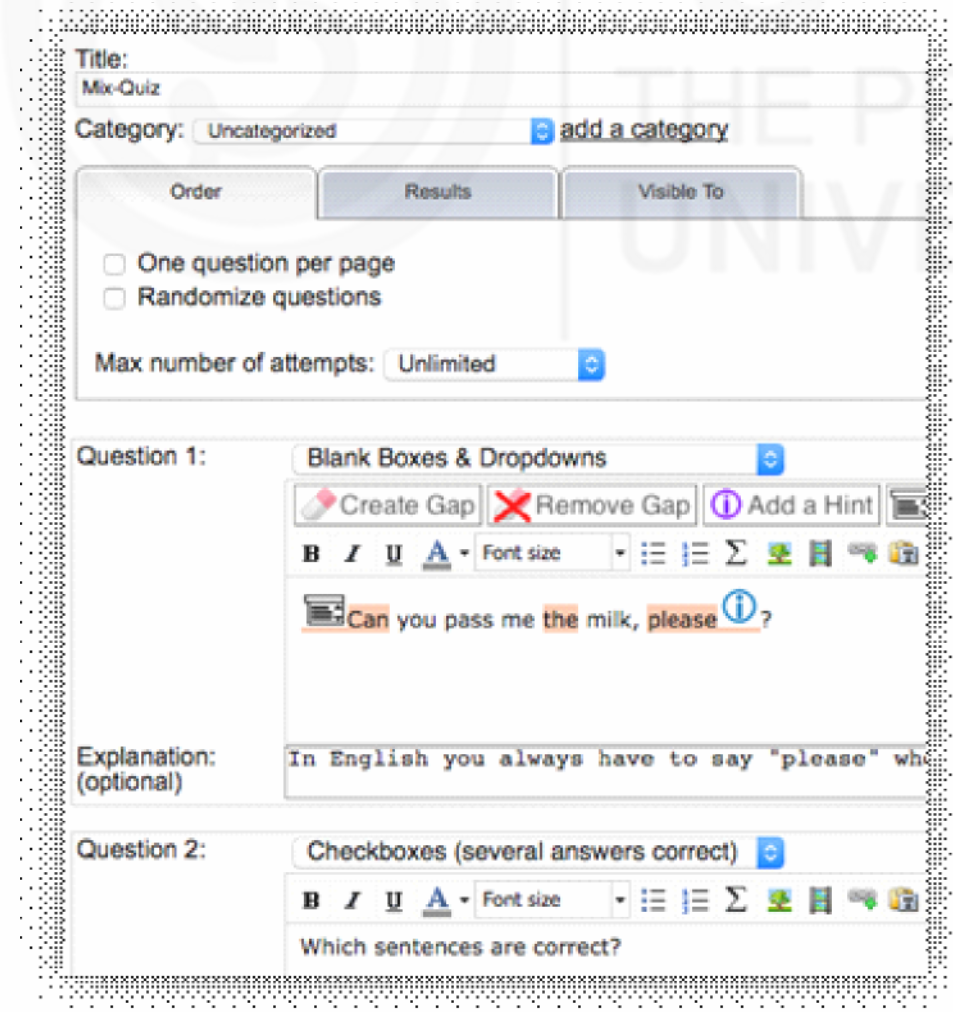


Figure 8.10 : Sub-link of Learnclick website to create quiz

Thereafter, you may insert questions and it may be distributed to your students for answering. After attempting the test, the system itself will evaluate and test results will be displayed. Closer screen shots are given below:



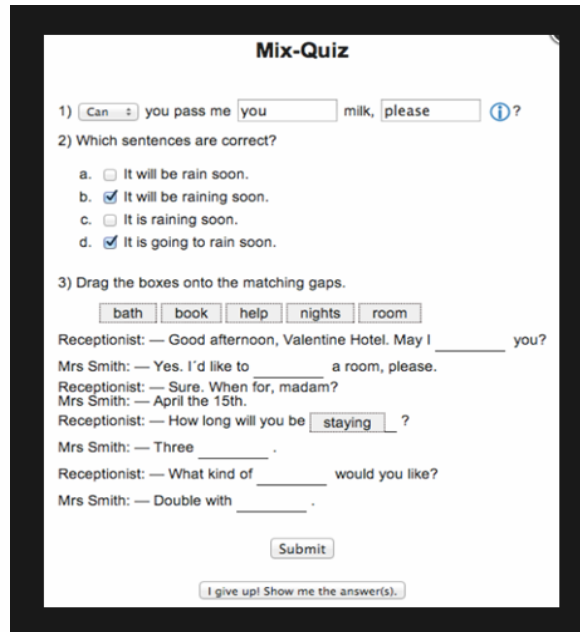


Figure 8.11 : Closer screen shots of Mix-Quiz

Those tools mentioned above are specially designed to create tests/questionnaires/quizzes. In addition to these Microsoft Word, PowerPoint, etc. can also be used in developing tests. Many e-learning softwares, Learning Management Systems (LMS), survey tools, e-contents, blogs, wikis, e-books, chat services, virtual classrooms, e-mails, PDF readers, concept maps, etc. also have many inbuilt features to test performance of the students. Let us discuss few of them.

You are aware that Microsoft Power Point is extensively used software for presentations. Let us see, how PowerPoint is used to develop tests. Think of a classroom situation. Ms Aparna, a secondary school teacher is teaching the concept of 'force'. After teaching the concept, she tried to check 'whether children have grasped the concept or not. For this, she prepared a multiple choice test in Power Point. The screen shots of the test are given below. The test is prepared in three slides. The first slide contains the question and four options which the student has to pick out the correct option by pressing the button given against each option. As the button is pressed, it will then jump either to second or third slide which will further indicate whether the option chosen by student is right or wrong. If it is wrong, the children have to press the button given in the slide, which will resume to the very first slide.

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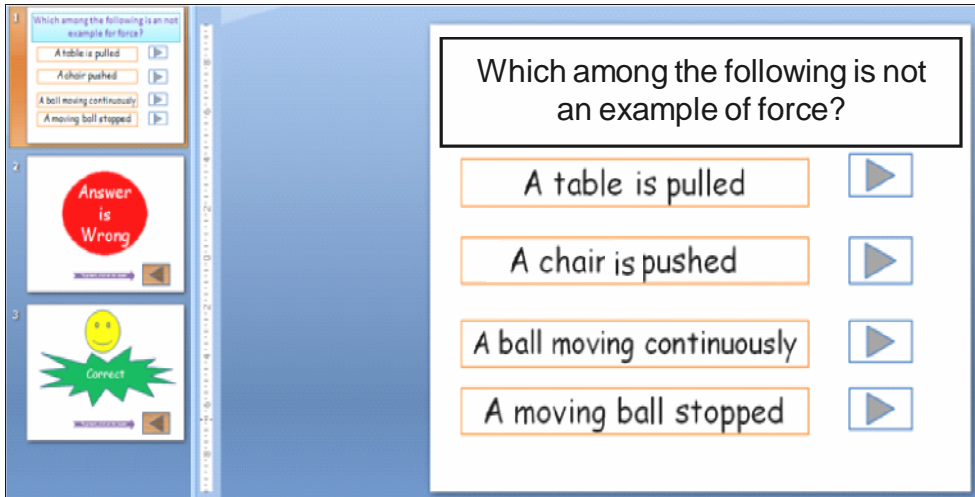


Figure 8.12 : Multiple choice test item in power point

Activity 6

- i) How will you use blogs for evaluating your children’s performance? Suggest a plan.
- ii) Develop a test in PowerPoint software and execute it in your classroom. Prepare a report on the difficulties faced by you in executing the test in your class.

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8.9 LET US SUM UP

As you have studied, use of ICT in the process of teaching-learning and assessment is not an isolated activity but it is highly appreciated when ICT becomes an integral part of the process. NCF, 2005 also highlighted such aspect that ICT should be an integral part of teaching-learning process and assessment (refer Unit1 and 2 of Block-1 of this Course).

In this Unit, we have discussed the importance of ICT in assessing students' performance and also role of the teacher in technology-based evaluation. You have also learnt in this Unit about the concept of online/e-examination and its use. E-portfolio and e-rubrics are used as assessment tools in our school system. In this Unit, the concept and the process of developing e-portfolio and e-rubrics are also discussed and the online sources for developing portfolio and rubric have been highlighted. The Unit ends with a discussion on various application softwares/tools/websites such as content generator, learnclick, respondus, help teaching, etc. which are useful for the creation of online tools and tests. As a teacher, you can try to develop the online tools on any subject and topic of your choice as per the list of online sources given in this Unit.

8.10 REFERENCES AND SUGGESTED READINGS

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<https://hotpot.uvic.ca/>

8.11 ANSWERS TO CHECK YOUR PROGRESS

1. Because it is time saving, economical, interesting, and motivating.
2. Diagnostic evaluation is conducted to know the learning difficulties and accordingly to provide remedial instructions. Formative evaluation is used to know the learning progress whereas summative evaluation is used for grading and certification of the students.
3. Develop an e-content on any topic. Include multiple choice questions in it. Let students attempt it. (You may use e-content developing software like eXe, etc)
4. To select appropriate technology considering weightage to pedagogy and content and standard of teaching
5. Allotting user ID and password, attempting questions, saving answers, submitting answers, etc.
6. E-portfolio is digitized collection of artefacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution. Collection of digital work of any individual/student, images, pdf, audio-video, etc. For the rest of the answer, refer Figure 8.5.
7. Rubric prepared in digital format is called e-rubric. It helps students to assess their learning.
8. Select learning activity, identify the criterion for that learning activity, assign levels for each criterion, develop rubric template, Use rubric to assess children's learning for that particular activity.