

Quadrant-I (e-Text)

Details of Module and its structure

Module Detail	
Subject Name	Education
Course Name	ICT in Education
Course Code	EDU504
Module Name/Title	<i>ICT and Assessment: e-portfolio, electronic rubrics, online and offline assessment tools: rubrics, survey tools, puzzle makers, test generators, reflective journal, and question bank; Use of web 2.0 tools for assessment.</i>
Module Code	IIE014
Pre-requisites	Before initiating the learning process of the present module, it is expected that the learners possess the following: (i) Knowledge and understanding about assessment, its kinds and importance for learning process. (ii) Understanding about the meaning, characteristics and importance of ICT in teaching-learning process. (iii) Skills for using different ICT techniques and web-based tools for educational purposes.
Learning outcomes	After going through this lesson, the learners will be able- 1. Develop and use e-portfolio and e-rubrics as an assessment tool. 2. Apply online tools for creating e-rubrics and make use of different offline and online assessment tools viz. survey, puzzle makers, test generators, reflective journals and question banks. 3. Evaluate web 2.0 tools for assessment and use various web 2.0 tools for educational purposes including assessment.
Keywords	e-Portfolio, e-Rubrics, Puzzle Makers, Test Generators, Reflective Journal, Question Bank, Web 2.0 Assessment Tools

Development Team

Role	Name	Affiliation
Principal Investigator (PI)	Dr. S. K. Bawa	Central University of Punjab, Bhatinda
Subject Matter Expert (SME)	Dr. Vishal Sood	Deptt. of Education, ICDEOL, Himachal Pradesh University, Shimla

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1.0 Introduction

Dear learners, in the previous modules / lessons, we have learned about meaning, characteristics, forms and significance of assessment to enhance learning among the students. Assessment is an integral part of learning process to identify the strengths and weaknesses of teaching-learning process and design remedial strategies for improving learning among the students. As you are well aware that the present era is the era of technology and every sphere of human life and development is greatly influenced by it. The field of education is also not an exception to it. The teacher of today is required to be well acquainted with the application of modern technologies, technological devices and gadgets and other ICT-based tools in the process of education. In the present module, we are going to learn about the role of ICT in the process of students' assessment and learning. You will be acquainted in the present module with different kinds of ICT-enabled tools and techniques that can be employed for students' assessment. It is expected that you will go through the content matter in a very attentive and serious manner and with a positive mindset.

Let us start the discussion with different ICT-enabled assessment tools and techniques:

2.0 e-Portfolio as an Assessment Tool

A portfolio is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas.

E-portfolios, like traditional portfolios, can facilitate students' reflection on their own learning, leading to more awareness of learning strategies and needs. An e-portfolio is defined as an electronic version of a 'traditional' evidence portfolio, not a wider learning portfolio. It consists of a system and process that enables secure, computer-based verification and assessment of evidence. An electronic portfolio (also known as an e-portfolio, digital portfolio, or online portfolio) is a collection of electronic evidence assembled and managed by a user, usually on the web. Such electronic evidence may include inputted text, electronic files, images, multimedia, blog entries, and hyperlinks.

In education, the electronic portfolio is collection of students' work that can advance learning by providing a way for them to organize, archive, and display work. An e-portfolio can be seen as a type of learning record that provides actual evidence of achievement.

An e-portfolio serves following purposes:

- An e-portfolio can reflect the students' learning process and progress.
- Technology enables the use of a range of media – video, sound and images – as well as text to show both the learning process and final products.
- A student's teacher, peers, parents can participate and provide feedback on their learning.
- Students can take increasing responsibility for their own learning by recording and reflecting on their learning in an e-portfolio.
- Students can carry their e-portfolio throughout their learning journey and use it to record, assess, evaluate, and reflect at any time.

Some of the available online tools for creating e-portfolio are mentioned below:

- b-learning (CANVAS) has an e-portfolio tool.
- Wordpress
- Edublog
- Google Site

3.0 e-Rubric as an Assessment Tool

A rubric is a coherent set of criteria for students' work that includes descriptions of levels of performance. A rubric is an assessment tool, usually in the form of a matrix or grid, clearly indicates achievement criteria across all the components of any kind of student work, from written to oral to visual. It can be used for marking assignments, class participation, or overall grades. Rubrics are sometimes called "criteria sheets", "grading schemes", or "scoring guides". Rubrics can be designed for any content domain.

Assessment Rubrics provide a framework that clarifies assessment requirements and standards of performance for different grades. These enable very clear and consistent communication with students about assessment requirements and about how different levels of performance earn different grades. These can result in richer feedback to students, giving them a clearer idea where they sit in terms of an ordered progression towards increased expertise in a learning domain.

3.1 How to Make a Rubric

1. Decide what criteria or essential elements must be present in the student's work to ensure that it is high in quality.
2. Decide how many levels of achievement you will include on the rubric and how they will relate to your institution's definition of grades as well as your own grading scheme.
3. For each criterion, component, or essential element of quality, describe in detail what the performance at each achievement level looks like.
4. Leave space for additional, tailored comments or overall impressions and a final grade. A sample rubric is given here for a clear and better understanding:

Element of Assignment	Criteria				Points
	4	3	2	1	
Introduction of Topic	Student generated questions or problems around the topic properly	Student generated questions or problems around the topic	Student required prompts to generate questions or problems	Questions or problems are teacher generated	
Conclusions Reached	Very large number of evidence-based conclusions given	Several evidence-based conclusions given	Some evidence-based conclusions given	A single evidence-based conclusion is given	
Main Content Covered	All essential elements with numerous examples covered	Almost all essential elements with some examples covered	Some essential elements with few examples covered	Incomplete content coverage with no examples cited	
Summarization	Well-organized and logical summary	Well-organized but illogical summary	Less organized and illogical summary	Unorganized and illogical summary	
Spelling & Grammar	Punctuation, spelling & sentence structure is completely correct	Less than five spelling and grammar-related mistakes	Five to ten spelling and grammar-related mistakes	More than ten spelling & grammar-related mistakes	
Total Points					

3.2 Tools for Creating e-Rubrics

- *R-Campus*
- *EasyTagger*
- *RubiStar*
- *Annenberg Learner*
- *Quick Rubric*

These web tools can be accessed online through google or any other search engine on the web.

4.0 Survey as an Assessment Tool

Surveys are the most commonly used assessment method. There are surveys everywhere you look, and many are now online. Surveys are useful tools for collecting information regarding attitudes, beliefs, experiences, values, needs, demographic information, perceptions, etc. Surveys can reach a large number of people in a short amount of time and typically produce data that is easy to analyze. In general, surveys can take two forms i.e. paper (offline) or online mode. Paper surveys have some elements that cannot be translated directly into an online version, such as a question within a question. On the other hand, online surveys allow controls (requiring answers, validating answers) that are impossible to enforce in paper. Online surveys also allow distribution to a vast number of people at once.

4.1 Online Survey Tools

There is a plethora of online companies offering survey tools. Many will take the survey creation and posting out of the user's hands completely, for a fee. Most online survey tools offer the hands-on user a free or trial account option with added "upgrade" features for paying customers.

- SurveyMonkey (http://www.surveymonkey.com/Home_Pricing2.aspx)
- Survey Methods (<http://www.surveymethods.com/registration.aspx>)
- QuestionPro(<http://www.questionpro.com/free-survey-software.html>)
- eSurveysPro (<http://esurveyspro.com/Prices.aspx>)
- FreeOnlineSurveys

5.0 Puzzle Makers

A puzzle is a game, problem, or toy that tests a person's ingenuity or knowledge. In a puzzle, the solver is expected to put pieces together in a logical way, in order to arrive at the correct or fun solution of the puzzle. Puzzles are also an important educational learning tool for toddlers and young children as they provide many skills and mental learning benefits and opportunities. Puzzles should be designed so that children can advance through various stages of puzzle difficulty easily. There are varied kinds of puzzles like; Chinese puzzle (an intricate puzzle, esp. one consisting of boxes within boxes), Crossword puzzle (a puzzle in which the solver deduces words suggested by numbered clues and writes them into corresponding boxes in a grid to form a vertical and horizontal pattern), Jigsaw puzzle (a puzzle in which the player has to reassemble a picture that has been mounted on a wooden or cardboard base and cut into a large number of irregularly shaped interlocking pieces) and Monkey puzzle (also called Chile pine because monkeys allegedly have difficulty climbing them).

5.1 Online Puzzle Generation Tools

'Puzzlemaker' is a puzzle generation tool for teachers, students and parents. One can create and print customized word search, criss-cross, double puzzles, fallen phrases, math squares, mazes, letter tiles, cryptograms, number blocks and more using his / her own word lists. Following puzzle generation tools are available online that can be employed to create / make your own puzzles for classroom or home use:

- [Free Puzzle-Maker.com](http://FreePuzzle-Maker.com)
- Discoveryeducation.com

6.0 Test Generator

The test generators are also known as quiz makers. Test generators or quiz makers enable teachers to create assessments quickly and easily. They take the guesswork out of formatting and reduce the risk of errors. Online test makers also allow the teacher to create an answer sheet at the same time. Some test generators are built in order to develop online content and may even grade the questions for you, whilst others generate a printable version. Online tests or quizzes can be enjoyable for students to take and are

more closely aligned with the type of assessment used at tertiary institutions and places of work. Feedback is often immediate, enhancing the learning experience. They are also great for the environment because they save on paper.

6.1 Online Test Generator Tools

Here are some interactive test generators or quiz makers available online that can be accessed through any search engine on the web:

1. Easy Test Maker
2. iSpringQuizmaker
3. Go Conqr (formerly known as Exam Time)
4. Class Marker
5. Quiz Works
6. Help Teaching

The other online quiz maker or test generator tools are; Pro Profs, Poll Maker, School House Technologies, Articulate Studio, Vocabtest, Quizinator, FreeOnlineSurveys.com, Online Quiz Creator, Quiz Revolution, Hot Potatoes, Google Forms + Flubaroo, Adobe Captivate 9, WondershareQuizCreator, Respondus 4.0 and Question Writer HTML5.

7.0 Reflective Journals

A reflective journal is a personal record of student's learning experiences. It is a space where a learner can record and reflect upon their observations and responses to situations, which can then be used to explore and analyze ways of thinking. A reflective journal is a means for learners to reflect on their learning and learning experiences in different ways. They are employed to reflect upon the subject content and personal experiences as a means to increase learners' understanding and also used to analyse learning process for self-development.

7.1 Assessment through Reflective Journal

The purpose of the reflective journal assessment is to develop students' critical reflection on the learning experience and self-directed learning skills. Journal writing can become one of the most important components of the assessment process because it has the potential to promote critical thinking. According to Spaulding and Wilson (2002), reflective journal writing serves

four purposes for the student and three for the teacher. For students, journal writing serves as a permanent record of thoughts and experiences; establishes and maintains a relationship with the instructor; provides a safe outlet for frustrations and concerns; and aids internal dialogue. For the teacher, reflective journal writing serves as a window into student thinking and learning; establishes and maintains a relationship with the student; and serves as a dialogical tool. Finally, reflective journal writing provides an opportunity for both the teacher and the student to assess learning.

8. Question Banks as Assessment Tool

Question banks are databases of questions that can be shared between courses and programmes of study. A question bank is the list of questions for concerned subject according to a particular syllabus. In other words, a question bank is a planned library of test items pooled through cooperative efforts for the use of students, teachers and evaluators. These question banks can be in both online and offline format. Question banks are searchable so that questions meeting specific criteria can be drawn from them to create assessments. The question banks allow users with the appropriate access to create questions. A question bank serves many purposes. Questions from the question bank can be used by teachers at the pre-testing stage, for setting question papers, for measuring pupils' achievement etc. Enrichment of questions by updating, discarding, replacing, modifying and adding new questions should be a continuous process. In question banks, all types of questions such as; objective type, short answer type as well as long answer type that could be on a particular topic are included. Large scale public examinations involving wider content coverage have enhanced the significance of question banks. Using an online question bank helps prevent cheating, since no group of students will get the same questions, at the same order, while taking the same exam. It also lets you add more content to the exam material, since you can cover a lot more ground with a bigger set of questions (even though the students are not getting all of them) than with just a few questions.

4. Use of Web 2.0 Tools for Assessment

Web 2.0 tools are free digital programmes that can be used for creating and sharing student-generated projects and products. Web 2.0 tools can very broadly be defined as end-user applications that require dynamic interaction, social networking, or user interfacing between people and information. They almost always have accompanying websites and associated apps for smart devices. They are interactive, multi-purpose, easy-to-use digital platforms that encourage students to collaborate with each other or create and share individualized response products. Web 2.0 tools also provide students an opportunity to interact with others as they share their knowledge. One of the benefits of Web 2.0 tools is their ease of use. Most students find these tools to be intuitive and user-friendly. Web 2.0 tools also can facilitate authentic interactions with content and with other learners. These tools offer students opportunities to solve real-world problems and to collaborate in meaningful ways with peers in face-to-face or online classrooms. Familiar examples of Web 2.0 sites and tools include wikis and blogs (PBworks and WordPress), social networking sites (Facebook and Twitter), image and video hosting sites (Flicker and YouTube), and applications to generate Web content for education, business, and social purposes (Wikipedia, Weebly and Instagram).

9.1 Web 2.0 Tools

There are a couple of useful websites that describe a variety of tools according to instructional purposes. One such website is <http://cooltoolsforschools.wikispaces.com/>. Another website is <http://webtools4u2use.wikispaces.com/Finding+the+Right+Tool>. These websites are organized by the types of tools, such as presentation drawing, video sharing tools, etc., and they provide links to the websites for different tools. Most tools can be adapted for a myriad of instructional or assessment purposes and subject areas. Some of the web 2.0 tools are ShadowPuppet, Padlet, Thinglink, Weebly, VoiceThread, Socrative, Plickers, Quizizz, QuizSocket, AnswerGarden, Arcademic Skill Builders, Doctopus, eduCanon and Kahoot. These web 2.0 tools can be accessed online through any web search engine. There are a lot of assessment tools on the

web that are free, easy to use, and can be accessed by the teachers, students and parents for use in classroom situations and in homes.

9.2 Limitations of Web 2.0 Tools

While Web 2.0 tools offer many advantages for instructors and students alike, they are not the perfect solution for all educational challenges. The tool must actually enhance the learning process, not simply add unnecessary tasks for students to complete. If students can communicate their understanding of the learning objectives without technology, then a more traditional response assignment may suffice. Instructors must also consider all of the steps in the process of using the tool. Instructors must also consider the complexity of the tool to be used and how much time it will take to teach the tool itself. In face-to-face classes, instructors can demonstrate how to use the tools and be present to help students troubleshoot any problems that arise. In distance learning courses, this process may be more cumbersome. Instructors can make screen shot videos to show students the step-by-step procedures. There is also a danger of over-using these tools. Even the newest and engaging tool can become passé if it is assigned too often or used unnecessarily. Web 2.0 tools have a better chance of sustaining student engagement if they are used judiciously and purposefully.

10. Summary

In this module, we learned about use of various ICT-related tools for students' assessment. There are certain ICT-based tools that can be employed for sharing students' work and for other educational activities. On the other hand, certain online tools are there that can be used for assessment purposes. E-portfolio is the collection of students' work, progress and achievement in one or more areas. Through reflective journal, students maintain a personal record of their own learning experiences that helps in improving critical thinking among them. Both these tools can also be used for assessment purposes. The other ICT-based tools like, e-rubrics, survey, puzzle maker, test generator / quiz maker and question bank are specifically employed for students' assessment in different domains of individual personality. In the

end of this module, we studied about web 2.0 tools that are used for creating and sharing student-centered projects through different online sites. It is expected that you have assimilated these ICT-related tools that can be used by teachers, students and parents for educational as well as assessment purposes.

Quadrant – III (Learn More / Web Resources / Supplementary Materials)

5. Books, Articles, Research Papers, Journals, Case Studies etc.

- Belanoff, Pat & Dickson, Marcia. *Portfolios: process and product*. Portsmouth, NH: Boynton/Cook Publishers, 1991.
- Black, Lendley C. (1993). Portfolio Assessment. In Banta, Trudy & Associates (Eds.) *Making a difference: Outcomes of a decade of assessment in higher education*. San Francisco: Jossey-Bass Publishers, 139-150.
- Huba, M. E., & Freed, J.E. (2000). Using rubrics to provide feedback to students. *In Learner-centered assessment on college campuses*. 151-200. Boston: Allyn & Bacon.
- iRubric: An online rubric design system for using, adapting, creating, and sharing rubrics.
- Izard, J. (1991). *Assessment of learning in the classroom*. Geelong, Vic.: Deakin University.
- Morrison, G. R., & Lowther, D. (2005). *Integrating computer technology into the classroom*. New Jersey: Pearson/Merrill/Prentice Hall.
- Murdoch, Kath & Wilson, Jeni (2005). *How to succeed with learner-centred assessment*. Australia: Educational Services.
- Nandra, I.D.S. (2011). *Learning resources and assessment of learning*. Patiala, 21st Century Publications.
- Rhodes, T. (2009). *Assessing outcomes and improving achievement: Tips and tools for using the rubrics*. Washington, DC: Association of American Colleges and Universities.
- Sadaf, A., Newby, T. J., & Ertmer, P. A. (2012). Exploring pre-service teachers' beliefs about using Web 2.0 technologies in K-12 classroom. *Computers & Education*, 59(3), 937-945.
- Stevens, D. & Levi, A. (2013). *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback, and promote student learning (2nd ed.)*. Virginia: Sylus.

6. Websites, Blogs, Open Sources etc.

<http://www.rcampus.com/rubricshellc.cfm?mode=studio&sms=build&#REQUEST.rsUrl>

<https://www.essaytagger.com/commoncore>

<http://rubistar.4teachers.org/index.php>

http://www.learner.org/workshops/hswriting/interactives/rubric/?utm_campaign

<http://www.quickrubric.com/>
<http://www.uwec.edu/CETL/resources/upload/online-assessment.pdf>
http://wiki.cetis.ac.uk/images/d/de/Assessment_2_v2.pdf
<http://cooltoolsforschools.wikispaces.com/>
<http://webtools4u2use.wikispaces.com/Finding+the+Right+Tool>
<http://www.thejep.com/current.cfm>
<http://www.aaeebl.org/2012conference>
<https://teaching.berkeley.edu/resources/assessment...evaluation/...assessment/e-portfolio>
www.jsums.edu/assessment/files/.../Using-the-ePortfolio-as-an-Assessment-Tool1
https://www.riemysore.ac.in/ict/unit_9_ict_in_assessment.html
<https://ieeexplore.ieee.org/document/7814837/>
<https://penzu.com/how-to-write-a-reflective-journal>
<https://www.itee.uq.edu.au/.../Guide%20to%20writing%20a%20Reflective%20Journal...>
<https://www.brookes.ac.uk/Documents/Students/Upgrade/Study.../Reflective-Journal/>
<https://www.puzzle-maker.com/>
www.discoveryeducation.com/free-puzzlemaker/
<https://puzzel.org/en/>
<https://www.easytestmaker.com/>
<https://www.testshop.com/>
<https://www.schoolhousetech.com/test/>
<https://www.testshop.com/blog>
<https://blog.tcea.org › Good Teaching>
<https://www.mindmeister.com/974610958/web-2-0-tools>
kennedyttis.weebly.com/web-20-tools-for-students.html
virg.vanderbilt.edu/assessmentplans/Methods/Home.aspx
http://www.surveymonkey.com/Home_Pricing2.aspx
<http://www.surveymethods.com/registration.aspx>
<http://www.questionpro.com/free-survey-software.html>
<http://esurveyspro.com/Prices.aspx>

7. Glossary:

- **e-Portfolio:** An e-portfolio is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas. e-portfolios, like traditional portfolios, can facilitate students' reflection on their own learning, leading to more awareness of learning strategies and needs.

- **e-Rubric:** An e-rubric is an assessment tool available online, usually in the form of a matrix or grid, clearly indicates achievement criteria across all the components of any kind of student work, from written to oral to visual. It can be used for marking assignments, class participation, or overall grades.
- **Survey:** Surveys are useful tools for collecting information regarding attitudes, beliefs, experiences, values, needs, demographic information, perceptions, etc.
- **Puzzle Maker:** A puzzle is a game, problem, or toy that tests a person's ingenuity or knowledge. 'Puzzle maker' is a puzzle generation tool for teachers, students and parents.
- **Test Generator:** A test generator is a software used to create tests for a variety of uses. The test generators are also known as quiz makers.
- **Reflective Journal:** A reflective journal is a personal record of student's learning experiences. It is a space where a learner can record and reflect upon their observations and responses to situations, which can then be used to explore and analyze ways of thinking.
- **Question Bank:** A question bank is a planned library of test items pooled through cooperative efforts for the use of students, teachers and evaluators.
- **Web 2.0 Tools:** Web 2.0 tools can very broadly be defined as end-user applications that require dynamic interaction, social networking, or user interfacing between people and information.

Quadrant – IV (Self-Assessment)

As you have successfully finished the present module, so assess yourself by giving answers to the following questions:

1. In e-portfolio, the students' learning progress can be tracked with convenience. True / False
2. An e-portfolio is only helpful in exhibiting students' progress in academic area. True / False
3. What is other name of rubrics?
 - (i) Portfolio
 - (ii) Test Generator
 - (iii) Scoring Type
 - (iv) Grading Scheme
4. Same rubric can be employed for different assignments. True / False
5. EasyTagger is a _____.
 - (i) Digital Rubric
 - (ii) e-portfolio
 - (iii) Puzzle Maker
 - (iv) None of these
6. Questionpro is a software for developing _____.
 - (i) e-Rubric
 - (ii) Online Survey
 - (iii) e-Portfolio
 - (iv) All of these
7. Puzzles are helpful in developing social values among toddlers. True / False
8. Monkey Puzzle is also called _____.
 - (i) Chinese Puzzle
 - (ii) Chile Pine
 - (iii) Criss-Cross
 - (iv) None of these
9. A puzzle in which the player has to reassemble the irregularly cut pieces of a picture on a cardboard base is called _____.
 - (i) Maze Puzzle
 - (ii) Criss-Cross
 - (iii) Jigsaw Puzzle
 - (iv) Chinese Puzzle
10. There is no provision of immediate feedback to learners on his / her response in an online test created through test generator. True / False
11. Easy Test Maker creates only online tests. True / False
12. Reflective journal assessment is carried out to develop _____ among students.

- (i) Critical Thinking (ii) Imaginative Thinking
 (iii) Psychomotor Skills (iv) None of these
13. The other name given to question bank is _____.
- (i) Test Item Library (ii) Item Pool
 (iii) Item Reservoir (iv) All of these
14. In question bank, only multiple choice type questions can be created.
 True / False
15. Web 2.0 tools are interactive and multi-purpose end-user applications.
 True / False
16. Facebook is a web 2.0 tool. True / False
17. ShadowPuppet is a digital _____ web 2.0 tool.
 (i) Mathematical (ii) Story Telling
 (iii) Visual Information Sharing (iv) None of these

Answers: 1. True, 2. False, 3. iv, 4. False, 5. i, 6. ii, 7. True, 8. ii, 9. iii, 10. False, 11. False, 12. i, 13. iv, 14. False, 15. True, 16. True, 17. ii