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Copy of paper related with Ph.D. research work

Title: Use of ICT as instrument of measurement in routine and scheduled educational measurement and evaluation.

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Introduction:
Education is an essential need to becoming a human. Education is a process of reformation which shapes mind. For a school going child teacher is responsible for the process of reformation and development of child. In the process of education either it may in classroom or it may out of classroom, main process taking place is the transfer of information by various means of communication. But it is also important that rate of transfer and amount of transferred information should be viewed frequently. In present situation it is very difficult in a set up of formal education. Information communication technology can be used to overcome this difficulty.

Information and communication technology:
- Information technology(IT) or information and communication technology(ICT) is the technology required for information processing in particular the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information from anywhere, any time.

- on wikipedia.org.

• The application of computer, audio, visual and tele communications technology to the acquisition, storage, manipulation, analysis and display of information.

The meaning of technology increases all the times even so that it will pass through everything and effects as such that they often go unnoticed by the citizens. The role of information and communication technology can be simplified as under.

- Large scale mobility application in working methods.
- Personalized information & knowledge
- Use of ICT in content production
- Use of ICT in teaching and evaluation process
- Integration of individuals, organizations & interest
- New work culture

The key to success in the future will continue to lie in new knowledge-based products and services. Information technology and knowledge must be used to modernize traditional material production and also to the methods of working.

Combining systematic exploitation of information and communication technology (ICT) in evaluation will improve evaluation results, when compared to traditional evaluation. This will also bring new dimensions to evaluation situations and the entire evaluation environment. Evaluation will be based on 'objective measurement' and supported by making the learning environments and learning situations increasingly interesting. In all phases of life learners and teachers are challenged to develop and even to change their personal work method, in all evaluation and learning environments.

**What is evaluation:**

Measurement is fundamental in education. It is concerned with the way to measure learning. Probably the common way to measure learning is to give a test. Test scores indicate how much a student has learned. Measurement is a quantitative assessment of performance of the students in a given test. It can be used to compare performance between different students and to indicate the strength and weakness of the students. Nature of educational measurement can be listed as:

Measurement is incomplete and indirect.

It has been opined by the experts that a teacher without the help of a highly complex measurement instrument can measure the achievement of his students. In teaching learning situation achievement tests are the measuring instrument to measure achievement of the students.

By means of interaction, information is transferred to students and it results in process. ICT is very useful for information transformation and to view outcomes only by measurement.

Evaluation is a complex term used to describe a means of outcomes through teaching and learning.

Evaluation = Qualitative Measurement and/or Qualitative Description

Plus

Value Judgment

**Information technology in educational measurement:**

Technology used to implement instruction is not limited to web-based materials. Educational measurement can be achieved by utilizing any form of technology that contain information and media. Technology is the most variable element in educational measurement. The more advance the technology becomes, the more options there are to further educational measurement. The creation of the internet subsequently created e-learning and online assessment, as dial up connections were replaced by cable modems. Speed and bandwidth increased and device becomes smaller and more mobile; training and measurement becomes more flexible and further boost to growth and popularity of e-learning and e-measurement.
Basic of educational measurement instrument:

Guiding principles serves as a framework for effective development and use of evaluation device are:

- Integration with instruction.
- On going process.
- Co operative process.
- Clear link with objectives.
- Variety of setting.
- Use of variety of devices.

Mostly teacher have to measure students according to experiences provided in classroom. Teacher have to make items, have to arrange it and have to deliver in presentable form to the students.

Most of teacher prefer printed test paper for educational measurement and evaluation and also facing some problems like; construction of items, arrangement of items, printing of paper, taking a test, evaluation of answer sheets and many other so on. ICT gives better solution for it.

It is also of prime importance that technology used for measurement should be easily available, easily applicable, acceptable, flexible and interesting. Schools or colleges having sufficient communication devices can make evaluation process very easy and interesting. Now a day most of schools are equipped with large display screen facility while colleges with LCD projectors and computers are became commonly used instrument in all educational institutions.

In most cases this equipments are used to transfer instructions in various way and various form, then why should not for measurement and evaluation? Many may ask 'Why?' and 'How?'. Answers are 'to get benefit' and 'with simple way' respectively. It is of important that which way to choose to get maximum benefit?

One easy way to use ICT for measurement:

Now a day computer is became well known at all level of educational institutions. Very commonly used computer programme is MS-Office. Applications of this programme are mostly used daily by teaching and non-teaching staff. Teacher uses for transfer of information and clerical persons for account and records. Such applications are Word, Excel and Power Point Presentation. Power Point Presentation
is mostly used by teachers during classroom teaching and sometimes by students for presentation. The advantage of this application can be taken in different means and way for measurement of students.

At the college of education- Mangrol such experiment was carried out on 96 trainee. Teaching of subject was done with power point presentation for class of bachelor of education throughout the semester. At end of each chapter learning of students was measured by power point presentation. Fruitful result of this programme encouraged to both, students and lecturer. According to opinions of trainee implemented method was easy, burden less, fast and reliable to assessment. So how the programmed model was?

**Model:** Complete model was programmed in following steps;
- Teaching with Power Point Presentation by LCD projector.
- Preparation for measurement programme.
  - Construction of multiple choice type items
  - Making slide for each item separately.
  - Making of instruction slide.
  - Arrangement of slide in sequence.
  - Animation to slide.
  - Setting of remaining time of slide.
  - Presenting answer key.
- Oral instruction and distribution of answer slip.
- Start up of measurement presentation.
- At ending of programme instructed to stop work.
- Instructed to change their answer slip with their collegues.
- Presentation of answer key.
- Assessment by students.
- Each one obtained their result at a time.

**Benefits of Model:**
- Creation and collection of question slides.
- Equal time spent by students to answer each question.
- No printing of question papers.
Only small OMR slips provided for answering.
Immediate use of acquired knowledge.
Once question disappeared no chance for recall of it.
Minimum chances to note down late recalled information
On the spot assessment do not load burden on teacher.
On the spot self assessment accepted naturally as transparent assessment.
Saving of paper is indirect way to protect environment.
Storage of test as soft copy.
Facility to change serial of question and to add or remove question.
Applied for single or multiple student measurement.
A presentation of model may encourage students to perform such method while they placed in job

Limitations of Model:
Requires computer and LCD projector or Large Display.
Unavailability of electricity may cause interruption.
Congested sitting arrangement may results in copying of answer.
Retention time of slide may be boring time for higher achievers.

Advantages of technology based measurement:
Technology based measurement is;
- Technology based measurement is beneficial to education and to all types of learners.
- Technology based measurement is affordable, saves time and produce measurable results.
- Technology based measurement is more cost effective than traditional methods as less time and money is spend.
- Technology based measurement can be done in any subject.
- This type of measurement is much less costly then doing measurement by a traditional method.
- Flexibility is a major benefit of technology based measurement.
- Measurable assessments which can be created so the both the teacher and student will know what the student have learned, and how they perform.
Students like technology based measurement because it accommodates different types of measuring style.

- Advantage of easy handling of measurement schedule.
- Technology based measurement can be fit into busy schedule.
- Technology based measurement encourages students to use hyperlinks and site on the world wide web.
- Students are able to find out result very quick.
- Technology based measurement encourages students to take personal responsibility for their own results.
- Success in technology based measurement will build up self knowledge and self-confidence in learners.

Disadvantages of technology based measurement:

- Institute need to have computers as well as the internet.
- Evaluator need to have computer skills with programs such as word processing, internet browsers, and e-mail.
- Slow learners or older may feel uncomfortable to computerized accessing course material.
- Managing computer files and learning material.
- Also requires to attending class and completing assignments in traditional class room.
- Without attending traditional class, students may get confused and causing the students to fail or do poorly.
- Student may not get benefit of late recall.

Conclusion:

In present world of information explosion and use of technology, education technology had developed it’s various means to serve the educational process. Use of technology in education is a gift for students and teachers. Teacher should be trained to overcome coming challenge of education and measurement patterns. Journey of teaching started from ‘chalk & talk’ while measurement with ‘paper & pencil’ not now ended to use of computers in education but has no end in sight because of ICT.
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