
PCF5:Scenario Based E- Learning Instructional Design



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Promoting Scenario- Based e- Learning at IGNOU: Faculty Experiences

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Abstract

The Open and Distance Education System has proved its capabilities in addressing the needs of knowledge seekers and opportunities for continuing education. With advent of Information and Communication Technologies (ICTs), the delivery of educational programmes has witnessed a paradigm shift from print based teaching- learning to e-learning. The learners having access to the internet and who have adapted to learning through screen have shown their preference for e- learning over print. E- learning has also witnessed dynamic changes and practitioners of ODL have initiated new models of online delivery by incorporating problem- based content software. The focuses of efforts are targeted towards the learner in the core and, the learning context and community within which learners live and work in the periphery. A model of learning and teaching, called scenario- based e- learning, has been devised and well tested universally.

Scenario- based e- learning (SBeL) is situated in a real context and is based on the idea that knowledge cannot be known and fully understood independent of its context. (Kindley, 2002) This paper describes the experience of preparing IGNOU faculty to design scenario- based e- learning instructions. Two workshops were conducted to train the faculty in developing scenarios for the already existing courses. A special e- platform for the workshop was developed to give them first hand experience. The participants comprised faculty members from different Schools of Study involved in professional programmes like medicine, engineering, education, management, law, etc. Each group developed a learning scenario in their respective discipline on a specific topic cantered on a story, challenging learners to reflect, solve problems and involve in learning activity that provide a meaningful learning environment.

Introduction

The ICT led initiatives in e- learning, online student support, digital repositories, open source courseware and provision of instant information to the learners is now part of the Open and Distance Learning (ODL) system. Along with the earlier generations of ODL, the newer generations are ICT dependant for dissemination of knowledge with quality and cost-effectiveness.

Several e- learning initiatives were experimented in Indira Gandhi National Open University (IGNOU) in recent past but they could not take off very well. Some of them were abandoned for various reasons. The Virtual Campus initiative launched in 1999 by the University for the Bachelor's Programme in Information Technology (BIT) had great promises. But the programme was discontinued in 2006. Another programme, Rehabilitation and Resettlement, "RR online", started as single online mode academic programme in 2002, later made as dual mode (online and offline print based) simultaneously. Reflecting on the experiences gained in these programmes, one finds that they could not sustain mainly due to their replication of the print based content into e- learning materials. Though, some interactivity was introduced in the form of chat and e- mail, they were not sufficient enough to retain a continuous learning interest in the pedagogy. The content software was mainly text based with additional PowerPoint presentations and online quizzes. These were followed by a few more motivational initiatives but could not generate much enthusiasm towards e- learning among the learners. The whole exercise still could address the issues of online delivery of ODL programmes and their acceptability among the students.

After a gap of six years, based on the lessons learnt, a consorted effort is now being put- in to create avenues for e- learning by training, retraining and orienting the academic human resources to devise and develop online courses to be offered by the university. From the management angle, a decision has been taken in the IGNOU's Planning Board to incorporate online delivery of its new academic programme parallel to the print based mode. As IGNOU enters in the arena of e- learning, capacity building for internal faculty in the application of technology is becoming an important issue. There is, now a growing need to further develop expertise and experience in e- learning especially in instructional design. As a major initiative in this direction a project was initiated in collaboration with Commonwealth of Learning (COL) to build the capacity of the faculty of IGNOU in Scenario Based e- Learning (SBEL) in a phased manner.

The project adopted a sustainable approach including selection of faculty participants on volunteer basis by exposing them to the concept and seeking their motivational consent for the participation, providing pre- project literature and online support before they were actually provided F2F training. The training workshops (two in number) were judiciously spaced to have intermediate working space with online support from the resource persons. The objective of the project thus outlined as

1. Orienting faculty members in the adoption of Scenario based contents with emphasis on e- Learning designs in professional programmes;
2. Develop competency among participants in successfully employing SBELs designs in the content software for academic programmes;

3. Developing competency among participants in the use of SBeL that is consistent with their performance improvement in learning and teaching;
4. Enable participants to integrate scenario- based e- learning in existing programs;

The complete project have had online pre- workshop orientation and exposure to the contents, first three days orientation workshop conducted in November 2007, online development work followed by review workshop in January 2008. The tangible outcome of this project is nine scenarios developed, available on the project website specially created for the purpose. The Master of Arts in Teacher Education (MATE- I) programme of the Open University of Sri Lanka served as resource to understand the basic concept and application of Scenario Based Learning design strategy.

Rationale for Scenario Based Learning

Scenario- based learning is learning that is embedded in the context, within which learners live and work. It's based on the concept of situated cognition, which is the idea that knowledge can not be developed and fully understood independent of its context (Kindley, 2002). A widely held belief is that high quality of pedagogical design is possible by engaging the learner in the learning process (Schank, Fano, Jona, & Bell, 1994).

Scenario- based learning takes the form of a storyline in which learners are required to assume a key role (Schank & Cleary, 1995). The roles need to be carefully selected, preferably something that a learner might actually perform in real life. Supporting materials and resources in the form of readings, and other forms of resource materials can wrap around the scenario for deeper understanding of the concepts. A well designed Scenario can offer learners and teachers a highly interactive and engaging learning and teaching environment that is imperative in open and distance educational settings. The scenario- based learning can be used for teaching of any kind of subject matter, at any level of education and training and via any delivery mode. However, the experience from the MATE- I clearly indicates that scenario- based learning has particular advantages for practice- based discipline areas where the experience of practitioners is especially relevant to what constitutes knowledge and understanding in the field. (Naidu et al, 2005).

While certain learning functions can be best performed by Learning Management Systems (LMS) based on structured content, higher learning, based more on discovery and exploration, require learner- centric pick- and- choose tools. E- learning technology can be put to good use by enabling blended learning through information, interaction and collaboration. Apart from the basic e- learning tools for interaction and collaboration, it is also essential to have structured e- content that is contextualized reflecting on real- life situation.

Experience from the SBeL Project

The project was initiated keeping the outcomes as having a group of faculty members at IGNOU with expertise and exposure to Scenario- Based e- Learning who will be able to provide leadership and assistance to other IGNOU faculty over a period of time. It was envisaged that the first group of trained faculty shall create a suite of learning and teaching scenarios developed for each one of the identified subjects and a package of scenarios containing at least one scenario based e- learning material in each professional area involved.

A preliminary workshop was held at IGNOU in Delhi during November 21- 23, 2007.

Participants comprised 25 Academic staff from 10 academic programs. The participants were drawn from IGNOU faculty members dealing with professional courses, who were keen on promoting their skills and expertise in teaching, and ready to offer e- learning courses. All the participants in this program were new to the concepts of both Scenario- Based Learning and e- Learning. However, despite this level of familiarity, significant progress was made over the three days on their understanding of both concepts and processes. By the end of the third day, all Faculty groups had identified subjects for development using scenario- based learning and all had begun the preliminary work of scenario development. In order to support and maintain motivation and interest of the participant's, second workshop followed on the heels of the first in January 2- 5, 2008 to keep up the momentum that was generated in the first workshop. The January 2008 workshop focused on further developing and refining the work on scenarios and the development of online versions of the same. The second workshop was mainly hands- on in which participants worked on IGNOU's online e- learning platform in real- time.

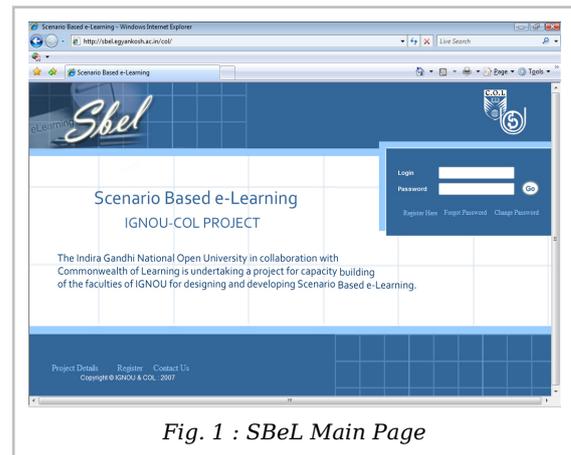


Fig. 1 : SBeL Main Page

The specially designed e- learning platform developed in house for the purpose has facility for scenario based content creation in an e- story board template. The groups working for a topic has the facility to collaborate online for content creation, reviewing, and editing. Version control is inbuilt in the system facilitating reverting back to earlier versions. Other tools included in the platform are: discussion forum, resource sharing and video chatting. The platform provided first hand experience to the participants in designing and developing scenario based e- content.

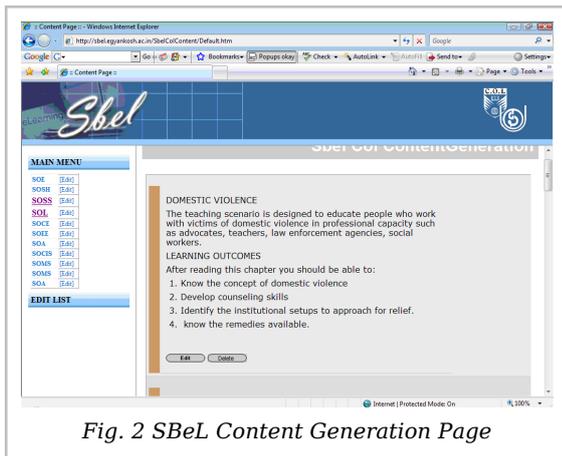


Fig. 2 SBeL Content Generation Page

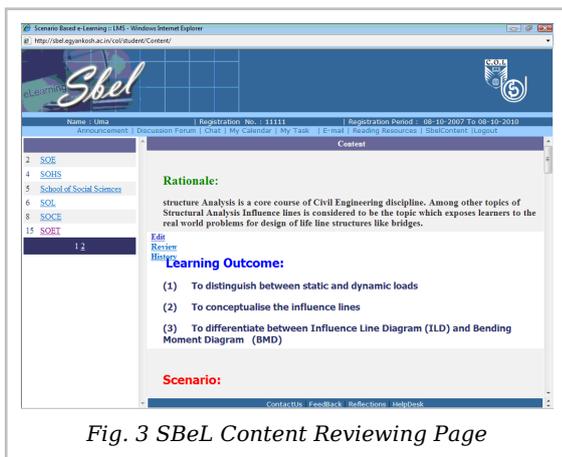


Fig. 3 SBeL Content Reviewing Page

The platform is to be used in future for training of other faculty members in developing scenario based e- learning content.

Scenarios Developed during the Workshop

The following frame work was given to develop the scenarios:

1. Define critical competencies for graduates of the program
2. Identify learning outcomes for students in the program
3. Identify learning context and develop suitable learning scenarios that reflect the events in life and work of persons who have acquired these competencies
4. Define learning activities assessable and non assessable tasks.
5. Identify all learning resources and instructional opportunities
6. Identify and define cooperative and collaborative learning opportunities using technologies.
7. Identification and definition of opportunities for feedback and remediation.

The team from the School of Education developed scenarios revolving around characteristics, principles and modes of learning. The scenarios were in the form of role playing with learning activities embedded in them. School of Health Sciences worked diagnosis of frozen shoulder which was again based on role playing. The Scenarios developed by the School of Law focused on Domestic violence as an aid to educate and sensitize people on the issue. School of agriculture worked on profitable wheat cultivation, School of Management on networking skills for NGO's, School of Computer and Information Science worked on web designing and Library Science Faculty on reference service. The School of Engineering and technology developed an elaborate content on Structural

Analysis. The scenarios developed were based on either stories or dramatized situations with integrated activities. A sample Scenario is given below to give an idea about the extent of work done by the team in such a short time.

Topic: Structure Analysis

Rationale:

Structure Analysis is a core course of Civil Engineering discipline. Among other topics of Structural Analysis Influence lines is considered to be the topic which exposes learners to the real world problems for design of life line structures like bridges.

Learning Outcome:

- 1) To distinguish between static and dynamic loads
- 2) To conceptualize the influence lines
- 3) To differentiate between Influence Line Diagram (ILD) and Bending Moment Diagram (BMD)

Scenario:

It was a shining morning of October. All students of your class are in cheerful mood traveling to Roorkee in Jan- Shatabdi Express for educational trip with Prof. Datta. Suddenly, you feel a shock as train stops abruptly. While waiting for the train to re- start, it is learnt that due to some accident on the bridge ahead, the train will not move at least for next 5 hrs.

Out of curiosity you all move to the accident site with Prof Datta. You observe that there is a lot of distortion of the track and even the rails have gone out of place. While discussing the reasons of track failure, Amit points out the presence of visible cracks in the side beam of the bridge. Suresh asks Prof. Datta whether the bridge failure is due to excess loading. In turn, Prof. Datta asks the students, whether they remember different types of loading on the structures. You all start naming the different types of loading, you have seen earlier.

Learning Activity 1:

- a) List out the different types of loading on structures.
- b) Categorize the above list into static and dynamic loads.

Learning Resources:

- 1) ET- 502 (B) : Structural Analysis, Block- 4, Unit1 (Course material of Engineering programme of IGNOU).
- 2) BIS Code : BIS 456: 2000 (Indian standard).

After going through the list, Prof. Dutta asks you that why the live loads are not considered as dynamic load when the movement of goods and human beings are considered in the live load.

Learning Activity 2:

Give the characteristics of static loads and dynamic loads.

Prof. Datta says that now you know that moving loads are one of the types of dynamic loads and informed that they are more critical in the design of structures like bridges.

He further adds that in previous chapters (Unit- 5, 6 Block1) you have learnt to draw BMD and SFDs for static loads and asks the students whether the same technique is sufficient for designing of structures under moving loads. While brain storming by every one, Pankaj says "NO". Then, Prof. Datta asks, "then what is the added dimension to deal with this situation?"

Learning Activities 3:

What do you understand by "influence line"?

Learning Resources

ET 502B- Block 4 Unit 1

Listening to the reference of ILD, Suresh seems to be very perplexed and puzzled. On noticing this, Prof. Dutta asks, "What happened"?

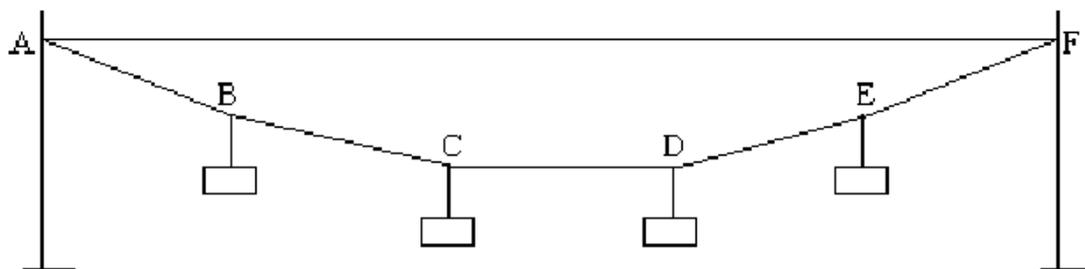
"It is bothering me that what is so special about ILD while it also involves simple calculations of BM, SF or reactions" Suresh replies.

"Very good observation" Prof Dutta appreciates his concern. Prof. Dutta throws the question open to all students.

Activity 4

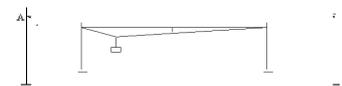
What is the difference between ILD and BMD? Emphasize the difference between ILD and BMD.

Prof. Datta asks the learners to tie a rope across two poles tightly. He then asks Suresh to hang four bricks at four different places and observe the deflected shape of the rope.



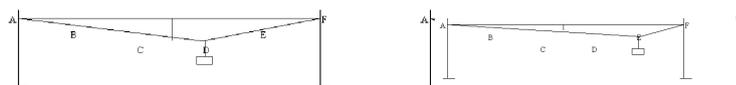
Now this time he asks Pankaj to remove the three bricks from the rope starting from the

right pole and observe the deflection of rope at mid point.



He

further asks to repeat the same exercise by moving the brick at points B, C, D and E subsequently and observe the deflection at mid point each time.



Learning Activity 4

Prof. Datta asks you to now draw two diagrams on paper. One shows the deflected shape of the first diagram. The other represents the mid point deflections in second, third, fourth and fifth diagrams at points B, C, D and E respectively.

Can you now differentiate between BMD and ILD for BM at mid point on the basis of the diagrams?

Resources:

- 1) Video CD - ET- 502(B)- ILD
- 2) ET- 502(B) : Structural Analysis, Block- 4, Unit1

Conclusion

The quality of scenarios that were developed indicates the interest level of the faculty involved in the project. The whole exercise was very challenging and a significant achievement was made in a very short time, both in the form of capacity building in innovative course design and e- learning at IGNOU. The participants in this initiative can be considered as innovators and champions in this regard, who would be well placed to lead their colleagues following in their footsteps.

As the University is planning to move towards e- learning mode of delivery, the experience gained is going to play a vital role. Converting the complete programmes into Scenario based learning may not be justified but hopefully we will be seeing more and more scenario based content getting integrated in the self learning material in future.

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Work in progress, expect frequent changes. **Help and feedback is welcome.** See [discussion page].



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