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A novel model of blended learning in capacity development trainings at DIETs in Haryana, India

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Abstract
This article reports the implementation of Learning Management System (LMS) integrated blended learning in capacity building trainings of teachers, school heads, mentors and education officials. This paper reflects the innovative idea of blending elements that use online technology with traditional face-to-face training. This new training approach based on constructivist theory has been implemented across 21 DIETs (District Institute for Education and Training) by State Council of Educational Research and Training (SCERT) Gurugram, Haryana. Till date, there are 47145 teachers, teacher educators, mentors and officials of Haryana have been enrolled on the portal for in-service trainings. The blended teacher training model have several advantages viz. easy training management, tracking training process along with discussion forums and interactive learning experiences. It is worth-mentioning that this blended teacher training system supports assessments and feedbacks that make training effective. Furthermore, training evaluation has become easy with online pre-test, post-test statistical data as well as qualitative feedback provided by trainees. This new hybrid approach will be beneficial for training facilitators, coordinators and training instructors.

Keywords: Blended learning, Capacity building programs, LMS

Introduction
In-service capacity building trainings of the educational faculties are imperative for their continuous uplift of skills and knowledge. These trainings provide new pedagogical techniques to teachers that they can apply in their classroom. For school heads these trainings are beneficial to strengthen their leadership skills. For district education officials, teacher educators and mentors these trainings develop capabilities for monitoring and evaluation techniques, community engagement programs and provide new learning experiences to all. These in-service trainings can be given in blended mode that integrates online and off-line learning (Ho, Nakamori, Ho, & Lim, 2016, Paskevicius & Bortolin, 2016). Blended teaching-learning is wide spread term in teacher education that is beneficiary in teacher professional development (Kennedy, E. 2021). Blended learning means the deliberate fusion of both the online learning with classroom offline learning experience (Garrison and Kanuka, 2004). Blended learning has been proven helpful to inculcate required techno-pedagogical skills for imparting education effectively and provides better learning outcomes. The blended learning also known as "hybrid learning" (Brysch, 2020) that refers to the educator's simultaneous engagement with learners attending on-campus learning and digitally.

Problem Statement
According to National Educational Policy-2020 (NEP-2020), Information and Communication Technologies (ICT) must be incorporated in the new methods of teaching and learning process for proper acquisition of knowledge. Many research groups have reported the need for experimentation in blended learning especially in teacher education (Madhumita Baidya et al 2023, Marian F. Byrka 2017). Teacher training programs in traditional face-to-face mode has the limitation as it does not facilitate individual interaction between instructor and learner because of limited time period. Also training assessment through assignments and feedback is not supported well. Moreover, training evaluation with pre-test and post-test results is also a difficult task for the offline trainings. The present work focus on the implementation of technology in trainings and integrate online trainings with face-to-face trainings. This article describes a new model based on constructivism theory for blended learning for in-service trainings.
Various blended learning approaches viz. Advanced Broadband Enabled Learning Program (ABEL) (Owston et al, 2008), Online Discussion for Knowledge Construction (Nami et al 2018), Discussion in Dual Mode (Ho et al. 2016), Teachers as Co-designers approach (Papanikolaou, Makri, & Roussos, 2017), LMS integrated teacher education program (Md. Meraz Ahmed,2024) have been reported in literature. So far, we did not come across any paper describing LMS integrated in-service trainings by training institutions. The current work reports the implementation of LMS Integrated training by State Council of Education and Training (SCERT) Gurugram, Haryana, India. This new hybrid approach will be beneficial for trainings run by educational institutions.

Research Objective
This work is proposed to highlight the approach of LMS integration into in-service training run by SCERT Haryana. The aim of the work is to explore the feasibility, practical aspects, and effectiveness of the LMS in teacher trainings.

Methodology
In the current research, experimental method has been employed. The sample under study is 21 DIETs running capacity building trainings for teachers and school heads. LMS website has been designed on Modular Object-Oriented Dynamic Learning Environment (MOODLE) platform. Various capacity building training modules have been developed on the website. In the next stage, trainings

for all the teachers and school heads have been scheduled from the Month of July-2024 and carried out successfully in ubiquitous format across 21 DIETs of Haryana.

LMS Development

Development of Learning Management Systems (LMS) is the field of interest of various education technologists that connects offline learning experiences with online practices (Chee Chern Lim et al, 2004, Irfan Yusuf et al 2019, Alier, M.F., 2010]. There is a potential possibility in LMS to offer guided as well as independent learning. These systems also make management of learning easier, whether it is in the form of test records, assignments, interactive portfolios as well as evaluation of learning. The use of LMS to blend offline learning with online activities have revolutionised the concept of educational technology. This LMS is based on MOODLE that is an Open Educational Resource (OER) has been downloaded from https://moodle.org/. MOODLE is installed into a purchased AWS web hosting service. MOODLE online resource provides setting of automated learning schedule, resources, discussion forum for the online learning (Limongelli, C, 2011). The author has designed and developed the layout, theme and conFigd the plugins of the hypertext pre-processor (PHP) scripted website https://prashikshak.org/ using MOODLE. DNS and data backups have been conFigd for smooth operation of the website. Educational content has been uploaded and multimedia has been added to enrich learning experiences. Fig 1. shows the homepage of the developed LMS for in-service trainings.

LMS-integrated Blended Training Model

In the model under study, constructivism approach in teaching and learning has been used. Fig 2. shows the pedagogical set-up of LMS-integrated blended training. At the first stage, (Step 1) participants create new account and login for the course selection, enrolment on the website and attempt the pre-test as well. In second stage, trainees get fact-to-face lectures from the resource persons at DIET campus. They perform offline group activities and hands-on practices (Step 2). In Step 3, they learn marking their online attendance, filling up daily learning logs, feedback, and assignment submission for assessment of learning. The cycle of Step 2→Step 3→Step 2 is repeated number of times equal to the number of days of training. Participants become familiar with portal and learn the dynamics of the online process. In third stage, on completion of face-to-face training by the trainees, Step 4 enables them to do post-test and finally get their e-certificates of successful completion of training.

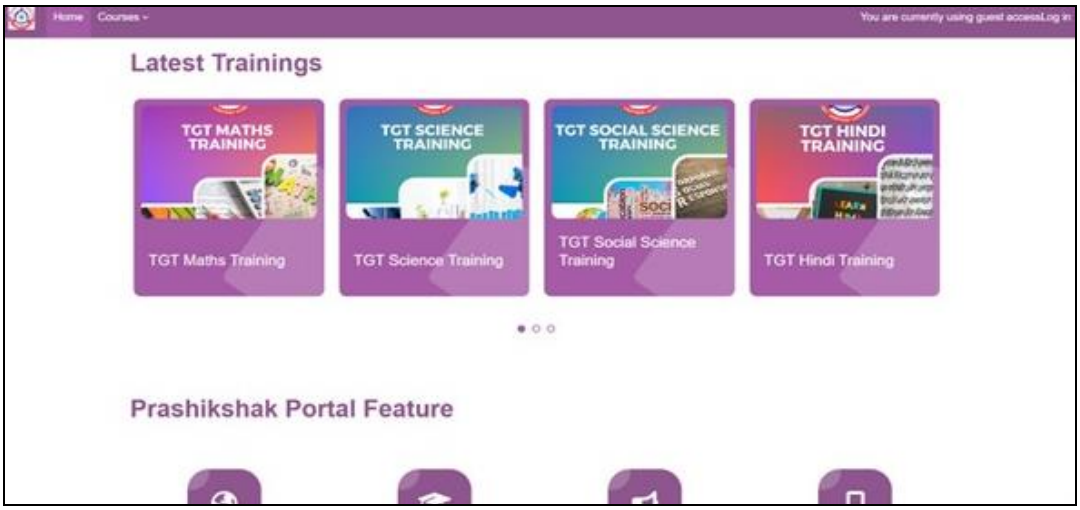

Fig1(a)

Fig 1(b)

Fig 1: The homepage of the developed LMS for in-service trainings (a) latest Trainings display (b) available courses display: https://prashikshak.org/

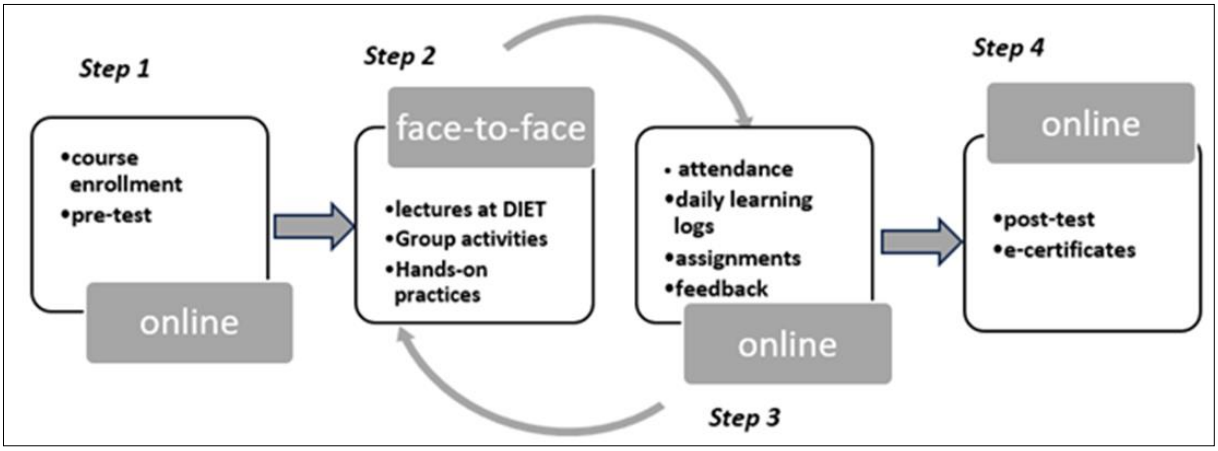

Fig 2

Fig 2: The pedagogical set-up of LMS-integrated blended training

Realisation of LMS-integrated Blended Training Model

This new hybrid training model has been realised for trainings of school heads, teachers, mentors, and other educational officers. Various training programs for school heads, teachers and mentors have been carried out. It has been found that this blended model of training has made training management easier and effective.

Advantages of LMS-integrated Blended Training Model

Monitoring of trainings

This LMS has provided efficient tracking of trainings running in all the 21 district institutes by the centralized institute SCERT, Gurugram, Haryana, India. SCERT officials' as well as master trainers could easily monitor the enrolment of participants, offline delivery of course modules through daily learning logs. They have access to feedbacks regarding resource persons instructions effectiveness, relevance of the content taught in face-to-face sessions and food arrangements as well. This simultaneous online monitoring of the trainings going on all in the district by the authority has become possible with the utilization of this LMS.

Easy Assessment

Formative assessment in training is carried out in the form of assignment done by trainees. It is worth-mentioning that this blended teacher training system supports assignment submission for grading that make training aligned.

Interactive learning experience

Website based trainings provided high level of interaction between master trainer and trainees as trainee could raise questions that may be discussed during face-to-face sessions. It provided discussion forums along with interactive learning experience.

Dissemination of course content

All the learning material has been made available to trainees for download in the powerpoint presentations/word document format after the completion of training. This course content may be helpful for them to utilize their learning's in their schools, classroom scenario. This practice will enhance the training learning outcomes.

Reduction in truancy

Password generated daily online attendance has reduced the truancy rate of trainees from trainings sessions that is a major issue for traditional face-to-face settings.

Cost reduction and Time-effectiveness

On completion of training, generation of e-certificates for participant has reduced the need for funds for certificates printing and hence reduced the training cost. The LMS blended trainings adhere to the timetable and also optimise the learner's time.

Inculcates competencies

This particular method of trainings builds up ICT competency among learners as they learn to use the LMS. The self-management competency is also developed as they learn to create and edit LMS account, enrolment procedure and successful assignment submission. Learner individual work through online learning management system Moodle enabled them to use ICT comfortably.

Peer learning

It has been observed that after getting offline instructions about LMS usage, trainees helped each other in their peer group. This provided opportunity for interaction with each other and created a sense of community among teachers and school heads. This practice has made the achievement of training goal of collaborative learning and transfer of knowledge as well.

Easy training evaluation

Due to availability of quantitative data of trainees, it has become easy to manage and retrieve it. LMS has made easy to download the required data viz. district-wise enrolment count, pre-test and post-test results to carry out detailed statistical analysis along with qualitative feedback for the training evaluation that are necessary for further improvement.

Challenges and Future Scope

There is need for the technology expertise (ICT competencies) of resource persons to impart the instructions about use of online LMS while offline training. Fast network availability is also a major issue faced during trainings that is the first requirement for the implementation of blended trainings. Also, there is dire need for more education technologist for course development and

assistance. Training evaluation from the data obtained through LMS is the topic of future action. The next research will focus on formative and summative assessment plans for this LMS integrated blended training.

Conclusion

In the present course of investigations, design, development and implementation of MOODLE based LMS for capacity building program has been carried out. This work describes a new model based on constructivism theory for blended in-service trainings. The research sample is 21 DIETs running subject-specific trainings for teachers and leadership specific trainings for school heads and officers. The website inclusion enabled easy training management, tracking, progress monitoring, collaboration and communication and assessment and feedback. In a nutshell, this potential website has added an additional learning to trainees as well as benefited to course instructors, coordinators, and other stakeholders to track, review and evaluate the trainings.

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