Blended Learning Models in Workplace Learning

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ABSTRACT

eLearning has its advantages and disadvantages. Various questions have been raised on the effectiveness of instruction delivered online. Blended learning has been suggested, as a solution to address all the pitfalls that eLearning may possess. Blended learning has been in practice for many years now. The basic philosophy of the approach is to derive the best out many learning channels available today. However, with advancement of technology and proliferation of the Internet, learning professionals are posed with a problem of how to mix the various delivery channels that are available. This paper is an attempt to answer some of the key questions that arise while designing a blended learning approach.

TATA consultancy Services (TCS) is Asia’s largest IT consulting services company that has operations spread across the globe. The learning and development team of the organization caters to the professional development needs of more than 100,000 employees. The employees consist of diverse cultures and are from varied educational background. The paper discusses two approaches to blended learning by Josh Bersin, namely the core and spoke approach and the program flow approach. The paper goes on to describe learning situations where the appropriate approach has been applied to derive expected learning outcomes. To ensure that the learning experience is optimal for the learner, one has to carefully select the learning channels and arrive at proper learning solutions. The learning channels are selected based on the work done by Don Morrison. The paper outlines various case studies of learning programs conducted successfully with in TCS. The paper also discusses various learning channels employed in TCS to effectively provide learning solutions to its employees.

Keywords
Blended Learning, Core and Spoke, eLearning, Program Flow, Learning Delivery Channels.

1) INTRODUCTION

The term “Blended Learning” has been in vogue for many years now. The basic motivation for coining this term stems from the fact that eLearning was not found as effective as the classroom. The basic issue with eLearning in all forms was the fact that social interaction was minimal or none at all. As a natural solution to improve effectiveness of eLearning, practitioners thought it prudent to mix the delivery channels [Anderson Cushing (2000)]. For a long time there was confusion in the definition of blended learning. Some learning professionals and academics simply meant blended learning as mixing instruction delivered online and in a classroom in the “right proportion” [Alkesej Heinze & Chris Procter (2004)].

American Society for Training and Development’s state of industry survey [ASTD Survey (2006)] described the various delivery channels used in training and the percentages of use of these channels (as shown in Fig1).

![Fig. 1 Percentage of use of Learning Channels](image)

Classroom remained the popular delivery
channel. However there were new channels that were also available.

With advent of Web 2.0 technologies, the numbers of online collaborative tools have increased and a recent study conducted by eLearning Guild (eLearning Guild report (2008)) shows that many organizations have adopted web 2.0 methods for training. Web 2.0 technologies like wikis, blogs, podcast etc have become popular learning channels. According to the report adoption of web 2.0 is catching up with many organizations and will remain mainstay of learning technologies for some time to come. Hence a learning professional or a practioner has a plethora of tools that are available to make the learning experience better for the learner.

Larry Bielawski and David Metcalf (2004) in their book “Blended eLearning: Integrating Knowledge, Performance Support, and Online Learning “ have defined Blended learning as “Taking two or more presentation and distribution methods and combining them to enhance the learning content and experience for the learner”.

Now the key question that remains to be answered is “is there a theoretical framework that allows the practioners to choose the right distribution and presentation methods”. Josh Bersin in his book titled “Blended Learning Book Best Practices, Proven Methods and Lessons Learnt”[Josh Bersin (2004)] has described two approaches to Blended Learning. We will describe these two approaches in detail in forthcoming sections of this paper. After having selected the approach, it is still a challenge to come up with appropriate mix of delivery channels. Don Morrison in a path-breaking lecture delivered at Strategy and Practice in Blended Learning conference held in London on “Doctrinaire Vs. Strategic Blending” [Don Morrison(2003)]has set the basic guidelines for learning channel selection. We shall describe the entire process of channel selection in a blended learning in the forthcoming sections. At the end we will present four case studies from TCS where we have successfully applied these ideas and have designed learning programs that ensure optimal learning outcomes and good learning experience.

2) BLENDED LEARNING APPROACHES

Josh Bersin in his book has described two approaches to blending namely the core and spoke approach and the program flow approach.

2.1) Core and Spoke

The core and spoke approach is a simple approach to blending. In this approach the learning program is designed with a central core to start with. The learners or participants will necessarily have to go through this core. The core is usually the body of the learning and the learners or participants must go through it. To help the learners maximize their learning various spokes can be designed around the core. The spokes are normally used as a supplementary material or complementary to the core. It can also be used for reinforcing the learning. It is left to the choice of the learners to use these spokes. These spokes are additional facilities provided to the learners to ensure that they meet the program’s learning objective. The following figure represents this approach schematically.

![Schematic Representation of Core and Spoke](image)

The main advantage of this approach is speed to implement. One can ideally start implementing the program as soon as the core is ready and spokes can be developed as the learners are going through the core and can be periodically released. The biggest benefit of this model is deployment simplicity. When the blended learning elements are optional and involve self- study, you can have hundreds or thousands of people in the program moving at their own pace. You have the benefits of blended learning available to learners, but you do not have to schedule, manage, and track
learners through a series of linear steps. The approach is also highly flexible and learners will be able to customize the learning assets to suit their particular need and style. You could start of with content at the core and change the core at a convenient time in the life cycle of the content. We will discuss this in detail when we discuss our case studies and present Don Morrison’s ideas on channel selection.

2.2) Program Flow

The program flow approach is a linear approach that can be carried out iteratively till the desired learning outcome is achieved. This is very popular approach and most of the examples of blending that one comes across in practice follows the program flow approach.

In this model one creates a step-by-step curriculum that integrates several media into a chronological program or syllabus. It is analogous to the process of taking a college or high-school course. Each chapter or step is orchestrated to build on the one before. The program has a strict outline and requires that learners step through material in a linear fashion. At the end, a final step typically includes an exercise or assessment to measure total learning.

To apply blending concepts to the program flow model you replace some of the physical events with self-study or e-learning activities. For example, suppose you have a well-developed week-long class for new hire training. Instead of the introductory lecture, you create a mandatory pre-class assignment on the web and then follow it up with minimal face-to-face interaction. The following figure represents the approach schematically

![Fig 3 Schematic description of Program Flow](image)

The only disadvantage of this model is that it imposes a rigid sequence of events and is linear. All learners must ensure that they finish the activities on schedule and are ready to take up the next activity at the same time. The model can be repeated iteratively to improve the learning performance of the learners.

3) LEARNING CHANNEL SELECTION

As described earlier, with advent of web 2.0 technologies, the channels available for learning delivery have increased by many folds. This poses a challenge to learning program designers. How do we arrive at the necessary channels? It is widely believed that type of content and learners drives the channel selection. This however is not true. There are various other parameters that needs to be considered before one can arrive at proper channels for learning delivery.

Don Morrison has presented a simple set of parameters that one has to look into before deciding on the channels. We have multiple channels for delivering training in our organizations. Synchronous channels like the classrooms. Classrooms are most popular delivery channels. According to the eLearning Guild survey about 71% of the respondents use classroom as learning delivery channel. But nowadays, organizations that are on aggressive growth, space (classrooms) can be a premium resource. Hence there is a business case to use classrooms judiciously. Many organizations have resorted to use other synchronous channels like videoconference, tele-conference, web cast etc. According to the eLearning Guild’s report on Learning Modalities, 35% of the respondent organizations use synchronous eLearning channels.

Most organizations also use asynchronous channels like off-the-shelf courses from companies like Skillsoft, Element K etc. In-fact according to the Guild survey, asynchronous eLearning channels stood third most frequently used delivery channel. Normally organizations will have a subset of these delivery channels. We are often faced with a question of which channels to use and why should we use these channels. Channel selection is key stage in the development of blended learning. What criteria should be applied to strategic channel selection? There
are six inter-related criteria. Figure 4 shows a schematic representation of the six criteria and how they influence the learning delivery channels.

3.1) Speed

While designing a learning program, the designers especially, in corporate environment will have to consider the timing of launch of program. The most important parameter is speed to market. If the learning program is delayed, then the basic business problem or the performance problem it sets out to solve is not achieved. How important is speed to market for the content under consideration? Normally most of us have been confronted with situations where we are expected to quickly organize a program. Normally business leaders come with yesterday’s deadline. Where speed is critical, synchronous channels like virtual classrooms and Web casts deliver your message to the most people at the highest speed. However one can’t base the channel selection by looking at one parameter in isolation. The importance of this parameter and all other parameters will drive the selection of the learning channel.

3.2) Cost

Cost is an important parameter influencing learning solutions. There are two basic costs one is cost to create content and cost to deliver the training.

According to research conducted by Bryan Chapman (2006) of Chapman Alliance, it takes 36 hours to develop one hour of instructor lead training, whereas it takes 221 hours of development effort to create one hour of eLearning course. If the eLearning is simulation based the development effort can range from 750 hours to 1300 hours.

It is common knowledge that content that is costly to develop is cheaper to deliver and vice versa. Creating self-paced courses is expensive, however it is cheap to deliver and is highly scalable. On the other hand it’s much cheaper to develop ILT courseware, but it does cost (travel, availability of faculty, space etc) to deliver this in classroom and is not scalable. So we must select those channels that will give us best impact for an optimal cost. Some time downloadable tools like templates; forms and job aids might do the trick. Combining these with self-paced courses can really deliver the impact at an optimal cost

3.3) Infrastructure

Infrastructure can be a big influence in selection of these delivery channels. Selection of the synchronous channels is primarily depending on classroom infrastructure available in the organizations. Many a times business takes a priority and these channels are unavailable to learning departments. Learning departments have to devise ingenious ways to keep the training going on. Also network infrastructure or IT infrastructure available in the organization can also influence the implementation of asynchronous or synchronous learning channels. Also it should be noted that in the current business environment, infrastructure (IT or physical) comes at a premium and needs to be used optimally. This justifies the strong case for blended learning as well.

3.4) Policy

Policy can also dictate channel selection. For example, an organization might want to move 50% of all its training to the online mode. Needless to say the channel mix will have self-paced courses, virtual classrooms and other collaboration tools. Policy does influence the channel selection in a big way. An organization

3.5) Content

Contrary to the popular belief, content types do
not determine the channel selection. Lifecycle of content will however dictate the channel selection. All strategies, tools, processes start as a notion and develop over time. These are either superseded by newer ideas or fall out of fashion. Hence every piece of content does have a lifecycle of its own. Every stage of content’s lifecycle might warrant a different channel selection. Shelf life of content does dictate the learning delivery channel. If content has low shelf life, then it does not make business sense in investing on creating a full-fledged online self-paced course. Also if the content is dynamic and is evolving then we will have to decide on relevant tools to create content that will allow us to make changes to the content quickly. We will discuss this concept in more detail when we discuss the case study on application training.

3.6) Learner Base

Learner base can also influence the channel selection. Particularly size and the geographical spread of the learner base decides the channel selection. If there were large numbers of participants to be trained, then one would consider self-paced eLearning courses or virtual classes.

4) TCS CASE STUDIES

In this section we will present four case studies and will demonstrate the application of ideas presented earlier. The first case study is a program called iLearn. This learning program aims to train TCS staff on various technologies that are used for software development within TCS. Second case study refers to the training provided on integrated quality management system adopted within TCS. The third case study is program designed to reduce the defects in the email communications done with clients by TCS associates. The fourth program is unique program that was designed to train TCS employees on use of an internal system called iCALMS. The program was unique in a sense that it did employ core and spoke approach. When the content matured the core was replaced.

4.1) iLearn Program

Tata Consultancy Services is engaged in providing IT services to its clients. The customers are normally billed for the time spent by TCS employees on the customer projects. The services can also maintenance related, wherein TCS employees troubleshoot and solve several application related issues for the clients. In this scenario, every second an employee is away from his/her workstation will lead to a loss of billing. Hence managers and project leaders were skeptical in sending their staff for the training. The learning and development unit in consultation with business came up with a blended learning solution called iLearn (Innovative Learning). The primary driver for this solution was to ensure that effective training is provided without allowing the employee to leave the workstation. The approach used for this design was the core and spoke. At the core there were self-paced learning courses procured from Skillsoft. The participants were provided with virtual labs, case studies, Books24x7 reference-ware, and mentoring support on instant messaging. The parameters that influenced the channel selection were cost, policy and infrastructure. Since the opportunity cost of an employee being away from work was the primary driver, the entire program was to be delivered on the network. These business leaders could see immediately the value and hence a policy all employees within a business unit need to undertake online learning. To ensure that the program met its objectives, the participants were given case studies that had to be solved and experts graded these.

1722 employees participated in this program till December 2007. 138 participants got over 80% marks in the end course evaluation. Overall participant satisfaction stood at 87.84%. 90° feedback was collected to ascertain the effectiveness of the program and also to ascertain if the program improved the performance on the job. The figure below is snapshot the results.
The entire analysis has shown that the program is as effective as the one delivered in the classroom.

In addition to this close to 115,000 person hours of billing was saved. This has ensured that performance development plans of employees could be met along with the business goals of the organization.

4.2) iQMS Learning Program

TCS follows a integrated quality management system to ensure that all products and services delivered meet a certain quality. As part of this exercise it is mandated that every one of the 116,000 employees undergoes a training on iQMS procedures. Normally these were delivered in the classroom. The Learning and Development team decided to apply a blended learning approach to this and ensure the optimal and effective training delivery. Since the program was mandatory and objective was to ensure that every one is aware of the iQMS procedures and every one effectively applies it on the job, Program Flow approach was adopted.

An internally developed online self-paced course was developed that covered all the aspects of the integrated quality management system. The participants were expected to complete this online course and this was followed by a online quiz. Once the participants cleared the quiz, they were allowed to participate in a classroom event. In the classroom, a case study was solved to ensure that participant comprehend how the quality procedures can be applied to work situations. This was followed by a evaluation and on successful completion the participant were deemed to eligible to work on client engagements.

The parameters that influenced the channel selections were, speed, infrastructure, policy and learner base. The learning and development has to complete these training programs within a specified time and given that the infrastructure available is finite and also needs to be used for the other programs as well, it was obvious that online delivery was the only possible solution. An organizational policy that every associate needs to be trained also played an important role in deciding the channel. The large learner base and distributed learners across 54 countries was another factor to be considered. To ensure a high level-learning objective of application, one-day classroom based workshop was organized. Using this approach Learning and development team could reduce the classroom usage from 3 days to 1 day. The participant satisfaction and learning effectiveness remained the same as the one calculated for participants who attend only classroom session prior to this program.

4.3) Communication Enhancement Program

The Communication Enhancement Program (CEP) is a L&D training model that makes judicious use of Mentoring, Instructor-led training and tech-enabled learning. By blending these three different modes of training the program not only manages to save precious time for the projects but also helps associates show improvement in the way they communicate in the work environment.

CEP consists of choosing mentors from within the project. Each mentor would have 6-8 “mentees” assigned to him/her. Depending on the focus for improvement (e-mailing/writing/speaking etc), the mentor would evaluate samples from the mentees on a weekly basis and provide feedback. The mentor would use an L&D checklist for this purpose. Both mentors and mentees would also undergo various web-based courses during the duration of the initiative and also attend review sessions by the language expert.

We found that this initiative not only helped mentees improve but enhanced competencies of
the mentors as well, led to learning and sharing and a cascading effect within the team. More important: no simulations were needed as live project work was used as content. There was no or minimal need for infrastructure and no direct external costs. Results were quantifiable and dashboards could be presented to Management and the external customers as needed.

The Steps involved:

1) The first step involved is to Identify Language Expert and CEP Coordinator. Once this is done a formal communication is sent to Stakeholders on the launch of CEP Initiative within the Engagement. A Program Schedule is prepared and sent.

2) Once the CEP coordinator identifies the batch, which is to undergo the training mentors are selected from within the project with the help of the Language Expert. Each mentor is then assigned 6-8 Mentees. Both the Mentors and the mentees have to be from the same project, this overcomes problems related to information security.

3) A CEP Kick-off Meet is held to explain objectives

4) A workshop on writing skills is conducted and self-study material shared

5) Soon after the workshops, the Mentors begin the review process. Each Mentor reviews 2 messages (email / ticket responses) of each Mentee per week (continuous assessment). This is done regularly over a period of about 8-12 weeks. Each week the mentor helps the mentees improve in select areas. For eg. In week 1 the emphasis is only on Punctuation and Spelling. Week 2 would focus on sentence structure and organization etc.

6) Each week, the mentors and Mentees take specific web-based courses from Skillsoft so that they understand the basics of the topic selected that week.

7) The Language Expert and coordinator review the progress fortnightly and appropriate feedback is given.

8) Finally the performance of the associates is measured through Grade Assessment and Exit Tests

The Benefits:

- Improvement in message quality (emails / ticket updates)
- Structured approach enables short learning curve
- Builds confidence in individuals
- Develops mentors in the account

As is evident from the program design, Program Flow approach was used in this program design. The parameters that influenced the channel selection were Speed, cost, infrastructure, learner base and policy. For any initiative of this kind to succeed it is very important for the senior managers and executives to endorse the initiative. Policy ensured that this endorsement came through and the program was huge success. More than 90% of the participants showed a major improvement in their email writing skills. After a 180° perception survey that involved the supervisor, customer, it was found that 90.78% of the participants could write mails that were good and were above acceptable levels.

4.4) Application Training

The last of the case studies presented is a classic example to highlight the life cycle of content and how core can be replaced when the content is in life cycle. Integrated Competency and Learning Management System popularly known as iCALMS was a new initiative to automate the delivery and tracking of competencies and learning with TCS. The system was ready for deployment in October 2005. As part of the deployment, entire staff in TCS had to be trained on use of this system and all the underlying workflows. A core and spoke approach was employed. At core was the virtual class conducted by iCALMS functional team. Webex was used for this purpose. As the roll out progress, spokes like job aids for various roles, FAQs, and iCALMS advisor on the internal instant messaging system were
added. Every employee was required to attend the synchronous one-hour event on Webex and then could choose to use either one or all of the spokes. The parameter for selection of the channel was speed, infrastructure, and policy, content and cost. The speed of rolling out the training program left with no choice for the L&D but to zero-in on the online delivery. The life cycle of the content dictated the choice of the online delivery channel. Since the content was in early stages of evolution, it was decided to carry out a Webex. Once the system use had become more commonplace, the core of this program was replaced by a full-fledged self-paced online course. This is classic case where core was replaced with more stable online course, once the content matured in its life cycle. Since the learning program had to touch every employee of the organization, classroom infrastructure was not enough and this lead to natural choice of online delivery of the program. In such organization wide roll out, its very important to keep the costs down, online delivery was chosen, so that travel was kept to bare minimum.

The first level feedback was extremely positive and participants were very enthusiastic to use the new system. As a proof of success of the learning program, L&D did a survey to find out the satisfaction levels and awareness about the system. 90% of the respondent showed a high level of awareness of the system. The results were similar to the one obtained in an ILT.

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REFERENCES


