

# **Towards A Theory Of Learning In Large Scale Professional Development Programmes For Teachers and Resource Persons in the Indian Context<sup>1</sup>**

Subir Shukla

Principal Coordinator, Group Ignus

Mobile: 9910307993 ; subir@ignus-erg.org ; subirshukla@gmail.com

## **Abstract**

The pandemic lockdown led to a surge in online in-service professional development programmes in the country. Ignus Pahal, an organisation with substantial experience in CPD, was tasked with developing and implementing such a programme for 1.3 lakh teachers and resource persons. However, an initial survey of online programmes brought about limitations in terms of generating reflective experiences for participants. The context of government school teachers and limitations in terms of ability to process digital inputs too contributes to the gap between intention and achievement. To address these gaps, Ignus Pahal identified the key qualities of processes known to work in in-person CPD and then examined ways in which those could be incorporated in online professional development. This led to the identification of ‘learning parcels’ as the unit of engagement, different means of generating engagement and reflection, establishing relevance, enabling contextualisation and personalisation, and promoting application. The use of an interleaved learning flow to promote active retrieval practice along with a judicious blend of online and offline tasks, along with tech-based and human interaction all contributed to enhanced participation, completion and learning.

## **1.0 The Backdrop**

In 2020, following the pandemic, on-line in-service training of teachers became common across the country. Ignus Pahal, the non-profit wing of Group Ignus, too had the opportunity to develop and implement:

1. A large-scale online teacher professional development programme for 1,20,000 government middle-school teachers in Rajasthan, focused on the NCERT;
2. A programme on Foundational Learning in Rajasthan (3,000 teachers)

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<sup>1</sup> We acknowledge the support of UNICEF field offices in Rajasthan and Uttar Pradesh in implementing the projects that led to formulation of the theoretical approach captured in this paper.

### 3. Two programmes for supervisors and Resource Persons (300) in Maharashtra and Uttar Pradesh

Our three decades of experience in teacher professional development, a study of key research, and exposure to existing on-line resources and programmes led us to formulate what may be described as an initial theoretical approach to online professional development for teachers and resource persons in the Indian context.

An initial survey of the various on-line programmes launched in India in response during the lockdown period to bolster teachers' capabilities showed that most relied on videos, presentations, pdf texts and assessment questions. Though experiential and constructivist learning have been advocated for generating the 'reflective teacher' (Yadav, 2012), most such efforts tended to be in the didactic, 'knowledge transfer' mode. Though there is considerable data on participation and completion rates in these programmes (even if not always readily accessible) there is little information on the effectiveness of these courses. This made it imperative to find out if there was a better way.

## **2.0 Existing experience on in-service training as a source of learning – or the desired 'process objectives'**

The first help towards finding better alternative modes came from some of the key lessons derived from the experience of in-person in-service training programmes (Shukla, 2002).

These include the following:

- 1) Recurrent inputs matter: not one-time but a series of shorter inputs spread over a longer period tend to get better results in terms of conversion into classroom processes.
- 2) A mix of different means, methods and materials works better – involving experiential inputs along with scope for reflection and application enable engagement, relevance, and contextualisation.
- 3) Case studies, open-ended questions, and exercises requiring teachers to make judgments or fill 'gaps' generate the greatest response.
- 4) Overall, a classroom focus with scope for adaptation seems to be welcomed by teachers. Teachers tend to derive 'theory' from action/experience before they can go from theory

into the action they need to take in their class. This is what principles of andragogy also indicate.

- 5) Use of performance indicators at multiple levels (i.e. for teachers as well as resource persons) can concretize the improvement expected and also provide a means to assess the degree of shift.
- 6) Roll out in sequence of complexity – starting with what is easier to understand, and then implement and moving step by step towards more complex aspects has a greater chance of internalisation. This also connects with sequence in which teachers learn.
- 7) Rigorous inputs into the development of trainers / facilitators / follow-up personnel and supportive supervisors, including HMs and CRC-BRC RPs are critical to ensure successful implementation
- 8) Data on teacher performance helps supportive supervisors to provide optimal inputs to bring about targeted levels of improvement in teachers and student learning.
- 9) Assessment of the effectiveness of TPD inputs on an ongoing basis and incorporation of research enables subsequent inputs to build on what has been done rather than starting from scratch every time.
- 10) Alignment with state requirements of performance expected from teachers, especially with the immediate priorities laid out ahead, helps generate a sense of relevance and enhances the uptake of what is offered.

### **3.0 The context of government school teachers**

Before incorporating these insights into online professional development programmes it was also critical to consider the following context.

#### *3.1 Access*

Most online professional development programmes are designed to be accessed over mobile phones because most teachers do have smart phones. They use them to upload data required by state authorities and receive instructions through WhatsApp. Hence there is some familiarity with mobile usage, social media and search functions. However, network issues exist in large areas, while net speed is in any case not high and data packs used by teachers may be more 'basic'. (Research Group – APU, 2020)

### *3.2 Time on task and low persistence*

Pre-launch surveys and interactions revealed that teachers do not have the time for continuous engagement (usually 5 mins seems to work at a time, and beyond 10 mins is seen as too long). It also appeared that at one time, 3-5 minutes is what teachers are able to absorb (some reasons for this may be seen in the subsection ahead).

There is also low ability to persist – despite this basic familiarity with digital technology, a large number of teachers tend to give up quickly the moment they are required to figure out anything technical on their own.

### *3.3 Difficulties from exposure mainly to ‘consumption’*

Teachers’ exposure to social media and common online material/PD packages, which mainly involve more ‘consuming’ and less ‘doing’ (mentally), leads teachers to want ‘simple’ modules and seem to limit the ability to persist with reading text (whether in print or in written form). This also leads skewed comprehension skills – thus an academic argument presented with data and evidence tends to lose audience fairly quickly.

### *3.4 Limitations of available courses*

Most the videos used in Indian online professional development programmes tend to be of the ‘talking heads’ or PPT kind (a throwback to the lecture mode) or low-quality animation (mainly explicatory). These do not present an alternative experience or challenge the audience to complete or complement or contradict what is being presented. Overall, videos and texts, even if reasonably interesting or well curated (along with a few tests) – do not appear to generate the kind of engagement, internalisation, contextualisation, recall or application in new situations that would be hoped for. In particular, texts generate weak response in print, and might work even more poorly on a phone screen.

### *3.5 The biggest challenges*

The biggest challenge for online training is in terms of generating experiential and hands-on processes where teachers get to experience for themselves what they are expected to create for children – and then evolve their own context-specific processes. This hampers the chance of training getting implemented in classroom.

#### **4.0 Attaining the desired ‘process objectives’ of online PD within the contextual constraints**

The key question then is: how can the contextual constraints be overcome to attain the desired process objectives known to facilitate effectiveness of in-service professional development?

Clearly, a mobile-based programme offers the widest means of reaching teachers, school leaders, resource persons and supportive supervisors. A strong advantage of such online inputs is that compared to face-to-face training workshops / meetings where a substantial number of participants tend to get neglected or left out of the process, it is possible here for each individual to receive the full measure of the input provided. The design of the online PD programme, therefore, can build on this to attain optimal results. Some of key aspects this design needs to include are indicated below.

##### *4.1 ‘Learning parcels’ as a unit of learning in online sessions*

As discussed earlier, time is a major factor affecting participation – it helps, therefore, to develop ‘sessions’ in terms of ‘learning parcels’ - units of learning that last 3-5 minutes, present something comprehensible and relevant, and then immediately require participant to address a challenge, solve a problem, express their view.... It is useful to plan in terms of short sessions 45 minutes or so, with several learning parcels.

##### *4.2 What makes for engagement, reflection and application*

While each ‘learning parcel’ involves engagement, reflection or application, the overall structure promotes these too.

##### 4.2.1 Generating engagement

The purpose of engagement is to enable participants to make the greater effort needed in order to internalize what is being communicated and convert it into practice. As principles of andragogy would indicate, beginning with experience works better as an entry point into learning. Thus, using ‘caselets’ (or short case studies) giving, for example, two different teachers’ ways of working given a particular situation immediately involves participants in thinking, which then initiates the learning process. Here, connecting with classroom situations and actions seems to generate engagement even in complex theoretical issues – however, this

works better when incomplete examples have to be completed by teachers with reference to their situation.

This can be sustained through a series of tasks of clear relevance (emerging from the caselets) but pitched at what might be called the participants Zone of Proximal Development. Instead of providing complete or ‘finished’ understanding, online material works better when it leaves ‘openings’ that require the participant to add her own view or information or context, thus co-creating her own understanding.

One of the dangers of online programmes is that participants might simply ‘click through’ the content without pausing to engage, consider or internalise it. Here, it is useful to introduce what are called ‘desirable difficulties’ – i.e., creating conditions that lead to a considerable but desirable amount of effort being made. The engaging nature of the content makes this worth ‘enduring’ for the participant. Desirable difficulties are known to improve long-term performance. (Brown, et al, 2014)

A reflective approach is also promoted by scope for failure (Kornell, N, 2009a) and recovery – in many exercises and tests, if participants have the scope to make mistakes, get feedback on why an error is an error, and correct themselves (and correcting themselves is incentivised as it changes their score), this leads to greater reflection. And at times, to metacognition too.

#### 4.2.2 Establish relevance through contextualisation and personalisation

Enabling contextualisation is a critical and specific means of generating reflection. There is a need to recognise that, ultimately, the online course is only a generic input – it ‘works’ only when it has the scope be interpreted, converted into specific contextual ‘manifestations’ and adapted to teachers’ individual needs and preferences.

Many exercises and scenarios can encourage teachers to reflect on whether advocated practices or understanding hold true for their situation and what they would need to modify in order to make them practicable. One device we have found to be particularly useful is to enable teachers to create their ‘own manual’ based on triggers from the online course. This provides a solid output that can be used and continuously adapted by a teacher in the future. It also generates the kind of ownership that enhances the likelihood of change in teachers’ classroom behaviour.

### 4.2.3 Promoting application

Eventually, contextualisation involves choice-making (Kornell, 2009b) on the teacher's part (from among nearly alike/close options and articulating the reasons behind them), which generates as well as tests the ability to apply what has been learnt.

The process described above may also be termed 'generative learning' (Wittrock, 1992) – where learners generate meaning based on what they already know and what they are now learning (principles, concepts, practices, information, skills). Creating their own manifestations and their own statements of what they have learnt is critical aspect of this.

### *4.3 Using the sequence of learning to good effect*

The architecture of the online course requires the creation a 'learning flow'. While in-person training allows mid-course corrections, in large-scale online courses it is difficult to make changes of this kind. Hence, most of the decisions need to be taken beforehand. This makes the learning flow critical. In order to sequence it, it is more effective to follow the sequence in which teachers learn, following the order of complexity of classroom implementation rather than the sequence of, say, a textbook.

Here, the learning parcel approach facilitates a recurrent process of having to think for oneself every few minutes that seems to lead to the greatest degree of involvement and completion rates. It also offers 'multiple entry points' for important areas of learning. This kind of spiralling progression, also termed 'interleaving', is known to boost learning (Rohrer, D, 2015) and can be incorporated in the Learning Flow. A feature of such a progression is 'active retrieval practice' – there is scope for participants to recall and apply what they are learning multiple times, including in self-tests, application exercises, supplementary tasks, etc.

It should also be possible for teachers to move to the next parcel of the course only after completing the previous parcel. The inability to 'leap' over any sections ensures that pre-requisites are learnt (Huelser, 2012). This also incorporates the scope for instant feedback and a live 'score' that enables progress tracking, thus giving the participant control and promoting autonomous learning.

As can be seen, though online courses may not be able to generate the kind of experiential learning in-person courses can, a thoughtful approach can create a fair proxy for experiential learning, where teachers get to experience for themselves the kind of reflective and experiential learning they are required to promote among their students.

#### *4.4 Blending online and offline, tech and human*

It is well known that a blended approach contributes greatly to effectiveness of online PD programmes. It is equally important that every session of online engagement lead to off-line action, for about half the time that the online session takes. Say, a 45 minute session followed by 25 minutes of off-line work. This enables the learning to extend into real life situations.

Next, enabling interaction among peers as well as with mentors or resource persons enhances the chances of achieving objectives. Creating teacher groups supported by trained local mentors adds tremendous value (but only where mentors support more and monitor less). This requires empowering and supporting mentors, and providing them with teacher engagement data so they can support teachers through 'in-person' interaction.

Adding the human dimension can be facilitated by well-thought out, open-ended questions to be discussed among teacher groups (especially when no clear answers are provided in the digital content), something that would not happen if 'complete' information were provided.

### **Conclusion**

As can be seen, the core pedagogical principles of constructive learning and the andragogical aspects of experiential learning inform the processes involved in continuous professional development of teachers, school leaders and supportive supervisors. However, the limitations of technology and its usage, especially in our context, can lead to online programmes with little efficacy. The approach described above combines a theoretical understanding of learning in such programmes with practices that can be incorporated in online PD programmes to generate learning effectively.

## References

- Huelser, B.J. and Metcalfe, J. (2012) Making related errors facilitates learning, but learners do not know it. *Memory & cognition*, 40(4), pp.514-527.
- Kornell, N. and Son, L.K., (2009.) Learners' choices and beliefs about self-testing. *Memory*, 17(5), pp.493-501.
- Kornell, N., Hays, M.J. and Bjork, R.A. (2009). Unsuccessful retrieval attempts enhance subsequent learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 35(4), 989.
- Pan, S.C. (2015) The interleaving effect: mixing it up boosts learning. *Sci Am*, 313(2).
- Peter C Brown, Henry L. Roediger, and Mark A. McDaniel. (2014). *Making It Stick: The Science of Successful Learning*, Belknap Press.
- Research Group – Azim Premji University. (2020) *Myths of Online Education, Field Studies in Education*
- Rohrer, D., Dedrick, R. F., & Stershic, S. (2015). Interleaved practice improves mathematics learning. *Journal of Educational Psychology*, 107(3), 900-908. <https://doi.org/10.1037/edu0000001>
- Shukla, Subir. (2002) Systems in Transition: A Case Study of DPEP in India, The World Bank. [https://webcache.googleusercontent.com/search?q=cache:2t7Y2u5gi-UJ:https://web.worldbank.org/archive/website00237/WEB/DOC/INDIA\\_-2.DOC](https://webcache.googleusercontent.com/search?q=cache:2t7Y2u5gi-UJ:https://web.worldbank.org/archive/website00237/WEB/DOC/INDIA_-2.DOC)
- Wittrock, M.C. (1992) Generative learning processes of the brain. *Educational Psychologist*, 27(4), pp.531-541.
- Yadav, S.K. (2012) *Impact of In-service Teacher Training on Classroom Transaction*, NCERT