

**A MODEL OF HUMAN RESOURCE DEVELOPMENT FOR "I T" ENABLED
GOVERNANCE : THE EXPERIENCES OF INFORMATION KERALA MISSION**

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ABSTRACT

A well - defined human resource development strategy has been identified as a pre-requisite for any meaningful E-Governance programme. Unlike the usual corporate training programmes on IT, training in E-Governance has to be participatory, activity based on contextual relevant to the working environment of the trainees. Information Kerala Mission in view of this evolved a training strategy for imparting computer skill to adult trainees following the principles of situated learning and adult learning which ensures effective learner participation and better comprehension. The strategy was field- tested and was found to be effective in imparting computer skills well as the required conceptual clarity to the local body personnel in a limited time frame.

1. Introduction

An appropriate strategy for human resource development is a pre- requisite for an effective and sustainable e-governance programme. However, this crucial component has always been neglected and major portion of the investment on computerisation in government has been utilised for hardware (Report of the task force on IT in Governance, Government of Kerala). Training of the officials and various other stakeholders involved is extremely important since the programme would not sustain if the end users are not equipped with sufficient skills in operating the machines, using the software applications and handholding. While formulating the Information Kerala Mission by the State Government for the computerisation of its local bodies, the objectives of the Mission, *inter alia*, included the training of various stakeholders of the programme. An effective implementation of the computerisation programme would require training a total of round 22000 people belonging to various user groups and 1.5 lakh training man-days.

Training strategies for e-governance programmes need to be different from the present corporate mode of IT training which intends to equip a trainee with the specific skills requires for rigorous corporate competition rather than the much greater purpose of development of society. This is because of the overriding trends of compartmentalisation, super specialisation and technological determinism (Wyatt et al, 2000), Heeks (1999). Though the corporate sector might overcome these problems by means of the extensive

information exchange and efficient knowledge management systems, the strategy of 'skill – pellets' in the context of e-governance in local bodies could prove to be detrimental. It is in view of these peculiarities, the Information Kerala Mission sought to evolve a human centred and participatory paradigm of human resource development in its programme for e-governance.

2. **Methodology**

The proposed training strategy is a natural extension of the Participatory Technology Development and Application (PTDA) approach in software development and training tried out at Kumarakom Grama Panchayat in Kottayam District in 1998 as a part of the pilot project on computerisation of local bodies (Unnikrishnan, 2001) . The PTDA approach ensures the participation of the end users at every stage of software development, training, and handholding. The Kumarakom Experiment had revealed that it was possible to interact with the users on information system development and draw valuable inputs from them. It also put aside the apprehensions on the influence of personal traits like age and educational status on the learning capacity of the trainees. The general perception regarding ICTs as a threat to employment opportunities could also be changed considerably.

2.1 The Training Methodology: Theoretical Tenets

Considering that the identified target group is massive and heterogeneous with probably little or no skill in using computer, the objective is to enable functional learning in a faster and more efficient manner within a limited span of time. This was attempted by integrating the experiences at Kumarakom and the principles of adult learning and situated learning so as to suit the specific requirements of different categories of end users (Cantor, 1992 and Cranton, 1992). (Profile of the personnel to be trained by the Mission is given in Table 1.)

The principles of situated learning, which conceives learning as a socio cultural phenomenon rather than the action of an individual acquiring general information from a de-contextualised body of knowledge was adopted as a instructional strategy for relating subject matter to the needs and concerns of learners (Kirshner and Whitson 1997). (Shor 1987)

2.2. Field Testing of the Strategy

This training methodology with varying durations and content mix was administered to 403 trainees belonging to different user categories. The categories of the trainees who have undergone training and the number of trainees in each category are shown in Table 2.

3. Results and Discussion

The information Kerala mission has evolved a strategy for the effective training of adult learners in Information Technology and E-governance with special focus on local body administration. The strategy is characterised by various pedagogical interventions and processes as explained below :

3.1 The newly evolved pedagogical strategy

3.1.1. Learner centred and participatory

The participatory approach focuses on the user's central role right from the system study stage and advocates for a three-way partnership of the user, the designer, and the action researcher. The user centred approach ensures a bi-directional flow of concepts and information between the trainer and the trainee.

Table 1 : Major categories of personnel to be trained as part of the Mission

Sl.No.	Category	No of days of training	Total no. of persons to be trained	Total training days
1	District / Block / Grama Panchayat Presidents	10	1156	11560
2	Corporation Mayors & Municipality Chairpersons	10	58	580
3	Local Body	1	14051	14051
4	District /Block / Grama Panchayat Secretaries	10	1156	11560
5	Corporation & Municipality Secretaries	10	58	580
6	Selected District/ Block/ Grama Panchayat Staff	25	1980	49500
7	Corporation & Municipality Staff	25	448	11200
8	Data Mechanic Trainees	12	1214	14568
9	Master trainers	7	120	840
10	District Mission Coordinators	7	14	98
11	Various level Co-ordinators of People's Plan Programme	12	200	2400
12	District / Block / Grama Panchayats, Municipality & Corporation level activists	25	1214	30350
	Total		21669	147287

Table 2: Category and Number of Trainees

Sl.No.	Category of Trainees	Number of Trainees	Duration of the training Programme Package (Days)	Number of man days
1	Expert Committee Coordinators Municipalities, Block Panchayat, Activists	154	3	462
2	Panchayat Presidents	5	3	15
3	Panchayat Secretaries	5	3	15
4	Staff of Grama Panchayats	10	5	50
5	Secretaries of Municipalities	19	7	133
6	Staff of Municipalities	29	7	203
7	Secretaries of Corporations	1	7	7
8	Staff of Corporations	50	7	350
9	District Planning Officers	12	5	60
10	Deputy District Planning Officers	12	5	60
11	Assistant District Planning Officers	11	5	55
12	Research Officers	20	5	100
13	Research Assistants	33	5	165
14	Senior Technical Assistants	42	15	630
15	Total	403		2305

3.1.2. *Demystification*

The aura of mystery and elitism that surrounds ICTs and prevents its diffusion is mostly because of the notion that apparently higher degree of technical skill and proficiency in English are required to master these technologies. The trainees are motivated to perceive ICT as a multi purpose technology as common as automobiles or electricity and which can be easily used to meet the various needs related to one's daily life. The training session starts with a fairly detailed session on the growth and development of ICTs and their manifold applications in various sectors.

3.1.2. *Concept Building*

The training strategy of the Mission gives sufficient thrust on helping the trainees build conceptual clarity on the features and relevance of the ICT programme envisaged by the Mission and the socio-economic implications of this upsurge including digital divide. During the training programme, the trainees are oriented to the following general concepts:-

- Information Communication Technologies and Society

- General Principles of E-governance and the experiences from similar initiatives in Kerala as well as other states.
- The concept of E-governance advocated by the Information Kerala Mission
- A comparison between the present state of affairs in governance and the futuristic scenario envisioned by the Mission.
- Orientation and hands on training on the software applications will be preceded by elaborate sessions on the respective local body administrative system.

To enable situational understanding of the concept, the sessions on concept building have been judiciously interspersed with the hands- on sessions.

3.1.4 *Use of Malayalam as the medium of instruction*

The scarcity of contents in local language has been pointed out as a major constraint in expanding the use of ICTs, among the local communities (Taglang, 2001). Keeping this in view, all the training materials have been prepared in simple Malayalam with the broader objective of enriching the ICT related literature in Malayalam. Besides this, the trainees are given rigorous training in typing Malayalam by using ISM, the multilingual software developed by the C-DAC.

3.1.5 *Reinforcement through frequent recapitulation*

The training strategy ensures reinforcement of concepts and processes discussed during the learning process by frequent recapitulation. Recapitulation is attempted in three ways :

- (i) Every time demonstration of a major skill is concluded, the trainees are asked to recollect it step by step.
- (ii) At the end of each session, the trainees are requested to recollect the major topics explained during the session.
- (iii) Once a set of similar topics is concluded, the trainees are asked to draw the common elements that have been explained in the previous sessions, for example, while practising MS Word and Excel , the trainees are repeatedly reminded of the common software functions that have been taught during the previous session on Windows.

3.1.6 *Higher Degree of Interaction between the Instructors and the Trainees*

The trainees are deliberately encouraged to interact with the trainers, by initiating discussions on the topic of the session to ensure comprehension and avoid monotony.

3.1.7. *Futuristic perspective on the scope of local body computerisation*

The trainees are promoted to figure out the linkages among the various developmental departments and agencies and the public interface with the government evolved as a result of computerisation. The ultimate integration of the various software applications into a comprehensive application for the local bodies of the state is also explored with the participation of the trainees.

3.1.8. *Emphasis on hands- on training*

The most striking feature of the pedagogical strategy is the rigorous hands on sessions included in the training programme. Each trainee will be made to spend as much time as possible with the computer to reinforce the skills taught. A well –qualified instructor will assist the trainees during the entire session. The number of trainees included in a session will never exceed twenty and every four trainees will have an instructor to help them.

3.1.9. *Evaluation of feed back and proficiency*

The needs and expectations of trainees at the beginning of the programme and the levels of learning at the end of the training are evaluated using semi-structured evaluation proforma. The proficiency attained by the trainees is evaluated by means of a structured teacher made test, with multiple-choice questions administered through the computer.

3.1.10. *Use of computer Based Training Materials (CBT)*

The trainees are made to follow up the topics further by means of user friendly Computer Based Training (CBT) materials installed in the machines. Trainees will be guided through different topics and are facilitated to scale different levels of understanding at a pace facilitated to scale different levels of understanding at a pace suitable to one's learning capability.

3.2. *Content of the training programme*

The content of the training programme vary across user groups. The general contents that have been standardised and included in the training programme may be broadly categorized into Computer Basics, Local Body Systems, Software Applications and General Concepts, as Shown in Table 3 below.

3.3. Effectiveness of the training programme

Effectiveness of the programme is illustrated by analyzing the post training

responses of 79 staff members from 20 Municipalities and from the Calicut Corporation through a semi-structured post training evaluation questionnaire is provided in Table 4,5,6 and 7.

3.3.1. *Performance of the trainees*

The trainees have shown significant improvement in acquiring the skills and understanding the concepts included in the programme. 86 per cent of the learners have obtained marks above 60 per cent. Out of them, 29 per cent of the trainees have scored marks above 80 per cent.

3.3.2. *Trainee's evaluation of the components of the training programme.*

As evident from Table 5, majority of the trainees have rated the components of the training programme either as very good or good.

3.3.3. *Trainee's evaluation of the training materials*

Analysis of the trainee's evaluation of the training materials distributed during the training programme has shown that majority of the trainees have rated the features of the materials to be either Very good or Good.

3.3.4. *Level of confidence acquired by the trainees*

Only negligible fractions of the trainees were found to lack confidence in handling the skills expected to be acquired by the trainees during the training programme. Majority of the trainees have exuded confidence in their capability to operate the machines.

Table 3: Major Contents of the Training Programme

	Major Category of the Topics	Details of the topics under each category
1	Computer Basics	<ul style="list-style-type: none"> • Computer hardware and peripherals • Background of system software and data base systems • Net working • windows
2	Local Body Systems	<ul style="list-style-type: none"> • Plan Monitoring System • Service System • Revenue System • Accounts • Establishment • Purchase and Works • Work Flow • Local Body Organisation

3	Software Applications	<ul style="list-style-type: none"> • MS Word • MS Excel • MS Power point • Internet • Sulekha (Plan Monitoring System) • Sevana (Service Delivery System) • Sanchaya (Revenue System) • Sakarma (Decision Support Systems) • Sannkhya (Accounts) • Sookhika (Work Flow)
4	General Concepts	<ul style="list-style-type: none"> • Information Communication Technology and the Society • E- Governance experiences from around the world • Challenges of local body administration in a changing scenario • The origin, evolution, methodology and context of the information Kerala Mission • E – Governance experience from other states • The capabilities to be acquired in the new context of local body administration and e-governance.
5	Implementation	<ul style="list-style-type: none"> • Experiences from Pilot Rollout • The Implementation Strategy

Table 4 : Scores obtained by the trainees (staff of Municipalities and Corporations) and the end of the programme

Marks in percentage	Frequency of trainees (N)	Percentage of trainees
> 50	2	3
50-60	9	11
60-70	23	29
70-80	23	29
80-90	20	25
90-100	2	3

Table 5 : Trainee's Evaluation of the components of the training programme

Sl. No	Description of the training components	Rating Abbreviations VG-Very Good, G- Good, A- Average, P- Poor, VP- Very Poor (N=79)											
		VG (n)	% age	G (n)	% age	A (n)	% age	P (n)	% age	VP (n)	% age	NR* (n)	% age
1	Content of the training programme	16	20	49	62	12	15	0	0	0	0	2	3
2	Coverage of subject matter by the resource matter	19	24	42	53	16	20	0	0	0	0	0	3
3	Degree of interaction in the training sessions	24	30	41	52	13	16	0	0	0	0	0	1
4	Simplicity of presentation	32	41	36	46	3	4	0	0	0	0	0	10

5	Use of examples and other illustrations to make the sessions effective	25	32	42	53	7	9	2	3	0	0	0	4
6	Timing of the training sessions	19	24	28	35	17	22	8	10	4	5	5	4
7	Overall improvement of the trainees in terms of knowledge and skill	16	20	38	48	23	29	1	1	0	0	0	1
8	Utility of the training materials	26	33	37	47	15	19	0	0	0	0	0	1

- Response not obtained

Table 6 : Trainee's evaluations of the training materials

Sl. No	Features of the Training materials	Rating : VG-Very Good, G- Good, A- Average,P- Poor, VP- Very Poor (N=79)											
		VG (n)	% age	G (n)	% age	UD (n)	% age	P (n)	% age	VP (n)	% age	NR*	% age
1	Coverage of topics	25	32	46	58	5	6	0	0	0	0	3	4
2	Simplicity of language	43	54	33	42	2	3	0	0	0	0	1	1
3	Clarity and explanation of concepts	27	34	40	51	8	10	2	3	0	0	2	3
4	Presentation and layout	25	32	44	56	7	9	0	0	0	0	3	4

- Response not obtained

3.4 ***Correlation between different attributes of the trainees and the marks obtained***

Correlation between the marks obtained by the trainees and their personal attributes show reiterated the fact that no significant correlation between the marks obtained and the age and experience of the trainees. (See Table 8). However, educational qualification and marks are found to have a significant positive correlation, reiterating the need to evolve more effective pedagogical strategies for the less educated.

Table 7 : The level of confidence acquired by the trainees in executing the expected skills

Sl. No.	Skill	Rating VC- Very Confident, C- Confident, NC- Not Confident (N= 79)									
		VC (n)	% Age	C (n)	% age	CM (n)	% age	NC (n)	NR*	% age	
1.	Start a computer	57	72	21	27	1	1	0		0	
2.	Open a programme in windows	50	63	26	33	3	4	0		0	
3.	Find a file	37	47	37	47	5	6	0		0	

4.	Open an existing file	37	47	33	42	7	9	0	2	0
5.	Save a file	37	47	35	44	6	8	0	1	0
6.	Delete a file	32	41	30	38	12	15	3	2	4
7.	Create a new folder	34	43	29	37	12	15	2	2	3
8.	Copy and Paste a file	27	34	31	39	16	20	4	1	5
9.	Copy a file to floppy disc	7	9	21	27	23	29	22	6	28
10.	Create a table in Word	35	44	34	43	9	11	0	1	0
11.	Create a letter using	31	39	36	46	10	13	0	2	0
12.	Insert page break	30	38	33	42	12	15	1	3	1
13.	Find average using MS Excel	18	23	34	43	23	29	3	1	4
14.	Find percentage using MS Excel	19	24	38	48	19	24	3		4
15.	Find sum of numbers using MS Excel	24	30	36	46	15	19	2	2	2
16.	Prepare a salary statement using MS Excel	23	29	32	41	20	25	3	1	4
17.	Prepare graphs using MS Excel	13	16	26	33	26	33	10	4	13
18.	Start ISM	17	22	23	29	29	37	8	2	10
19.	Set a language from ISM	6	8	33	42	28	35	11	1	14
20.	Open a website	13	16	41	52	22	28	3		4
21.	Search a topic from the Internet	14	18	40	51	24	30	1		1
22.	Prepare a Power Point Presentation	20	25	38	48	15	19	4	2	5
23.	Shut down a computer	58	73	15	19	2	3	2	2	3

Table 8 : Correlation between different personal attributes of the trainees and the marks obtained

Marks	Experience	Age	Education
	.015	-.119	.293 **
N*	77	77	77

3.4. Review of the Training Methodology

The training strategy based on the principles of situated learning has unearthed the strengths and weaknesses of the training programme and it has resulted in some quite useful revisions in the content and treatment of the programme.

The major revisions incorporated into the training strategy are as follows:

It was decided that the training materials on the software applications developed by the Information Kerala Mission must be split into two parts- the manual on preprocessing of data from the local bodies and the manual on software application based on the observation that the practices in book keeping and data maintenance were not uniform across the local bodies.

Duration of some of the sessions was changed to accommodate some other topics. For instance, in the curriculum of Municipality Staff, the duration of topics on Urban Local Body Systems were reduced to accommodate more hands on training of the software applications.

The order of topics and session were structured in a logical sequence to facilitate gradual and orderly learning and to graduate from the preliminaries to comparatively higher levels.

4. Conclusion

The formulation and field testing of a training strategy for the stakeholders of the e-governance programmes initiated in the state has led to more comprehensive understanding of the requirements of the end-users of the computerisation programme. An improved form of this strategy would be implemented in a much larger scale in connection with the IT literacy project, 'Information Technology for the Masses' scheduled to be implemented in Vengara and Tiruraungadi Blocks in Malappuram District. Further, this strategy has been the basis of the syllabus for computer proficiency prescribed for the employees of the state government. It requires wide research and explorations to formulate a feasible strategy applicable universally.

5. References

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