TRAINING THE DIET FACULTY OF KARNATAKA STATE IN CONDUCTING ACTION RESEARCH

REGIONAL INSTITUTE OF EDUCATION

TRAINING PACKAGE

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FOREWORD

"A human being is a positive asset and a precious national resource which needs to be cherished, nurtured and developed with tenderness and care coupled with dynamism" is the central concern of the NPE, 1986. The DPEP, a pioneering approach, seeks to operationalise the NPE - POA strategies of achieving UEE by transforming, toning and accelerating the primary education system. "DPEP has to rest heavily on research for its success as it is the research that provides solutions to problems," opined Prof. Murli Manohar Joshi, Hon'ble Minister of Human Resource Development at the Fourth International Seminar on Researches organised jointly by the NCERT and the DPEP and held at New Delhi during July, 1998. Now, DPEP has started focussing, rightly, on action research. This type of research is of immense value to the classroom teachers, as it aims at improving educational practices and providing practical solutions for the prevailing problems. Our primary school teachers have to be trained to take up action research. As a prelude to this, the DIET faculty, in-charge of training the teachers, has to be given a very thorough understanding and practical experience of action research. In this connection, the State Project Director, DPEP, Karnataka, approached the RIE for technical support in May, 1998. This worthwhile research oriented training programme has been taken up by the Regional Institute of Education (NCERT), Mysore, befitting the call of the Hon'ble Minister of Human Resource Development to the NCERT to initiate and promote research on local specific issues across the country besides its dissemination.

In this training programme the DIET faculty is expected to attend four workshops within a span of ninety days so that there is repeated feedback; the follow-up, thus, is in-built. Already the resource persons have met and consequent to the deliberations in their own workshop, the meticulously prepared training package is in your hands. Other than this package, the programme will bring out the original reports of the action researches to be carried out, an abridged version of these research reports (both in English and Kannada for wider dissemination) and a report of the training programme itself.

With the dedicated efforts of the team and the support from the DPEP, there is no doubt that this training programme would be a grand success and produce ripples of action research to encompass the State, the southern region and the entire country.

Dr.S.N.Prasad
Principal

LIGHTED TO LIGHTEN

'**Action**' brings to our mind certain attributes like activity, physical exercise and agility over a short period and the picture of a practitioner. Likewise, the word '**Research**' brings to our mind certain other attributes like academics, mental exercise and perseverance over a long period and the picture of a scholar. When 'action' and 'research' are brought together, there is a pleasant admixture of activity and academics, physical exercise and mental exercise and of agility and perseverance. This change has to be triggered off by self-introspection and catalyzed by the urge for self-improvement. *When the practitioner and the scholar become one, the product is 'action research'*; yes, *this research is unique.*

Ever so many workshops, seminars and in-service training programmes have been going on in different spheres for various purposes. Generally, these are characterized by a short span, some theoretical input and a lack of follow-up. In the present training programme, the DIET faculty are attending four short workshops at the RIEM within a span of ninety days *to imbibe the spirit of action research, to know the process of action research, to get a feed back on the action research and to share their experiences of action research.* These spells of research are interspersed with spells of action, when the DIET faculty go back to their field – their respective DIETs -- to involve a selected group of primary school teachers, carry out the action research, suitably modify it and reflect and report on the action research carried out. *Thus, a feed back is in-built in this programme.* Another point is that usually the target group of the training programme would be either the trainers or the trainees. But here the DIET faculty and the primary school teachers are simultaneously getting the experience of action research; *yes, this training is unique.*

The practical experiences, research knowledge and sincere efforts of the advisory body, the team, the paper contributors and others directly or indirectly involved in this programme have culminated into this "Training Package". This package, prepared with utmost care, has four divisions. In the first division, "Experts' view", Prof. P.R.Nayar has analysed the concept and process of Action Research; and Prof. K.K.Vasishtha has enumerated the issues and problems of Primary Education. *The ground is prepared.*

The "Team's approach", the II division, spells out each move of action research in some detail. There are points on action research for the trainees to ponder upon. As the computer may be put to use to feed and analyse the data, there are brief introductory accounts on Windows, WORD and EXCEL, along with some suggested activities for hands on experience. *The scaffolding is got ready.*

A few action research reports and their abridged versions as well as brief accounts of the classroom activities of teachers (in the spirit of Action research) form the contents of the III section, viz., "Practitioners' Quest". Here, it may not be out of place to mention that to begin with a number of action research reports were down loaded from Australia, U.K. and U.S.A. through Internet. Later a few local practitioners came forward – most enthusiastically - to share their experiences; it was quite heartening. Hence, many of the foreign reports were dropped from this package and the local ones have been brought in. *The model plans and the blue prints are displayed.*

The fourth and last section contains the questionnaire, activity sheet, session report blank and a glossary. *The tools are presented.*

This training package is being released at the inauguration of this programme. We have "Lighted to lighten"; "Trained to train". The fuel – training package – is at your disposal. May we cherish the fond hope that the few lamps lighted here would in turn light innumerable lamps all over and *keep the flame of action research alive!*

EDITORS

WELCOME TO THE ACTION RESEARCH FOR THE FACULTY OF DIETS OF KARNATAKA STATE AT REGIONAL INSTITUTE OF EDUCATION (NCERT), MYSORE

Action research is a term used to describe professionals studying their own practice in order to improve it. Applied to teaching, it involves gathering and interpreting information to understand better an aspect of teaching. Action research is an important development in the broad territory of "teacher's professional development." It is called "research" because teachers are searching/re-searching their classroom practices. It is not research in the traditional sense of the word (it has nothing to do with lab coats, number crunching, or "objectivity"!).

Teacher candidates are asked to identify an aspect of their practice to investigate in the school context and to develop a professional development plan to deal with the identified area of concern. The components of the plan include:

- writing a short proposal describing an area of concern;
- reading relevant literature;
- formulating ideas for action based on the literature;
- critically examining the ideas through personal experience as well as through conversations with others, trial and error, and re-examination of assumptions;
- making claims about what has been learned through the action research project and providing evidence to validate those claims; and
- presenting the action research project to peers.

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ORIENTATION PROGRAMME

DATE	10.00 -11.15 HRS	11.30 - 13.00 HRS	14.00 -15.15 HRS	15.30-17.00 HRS.
3-8-98	Registration,Welcome Introduction (BSU) The Course of Training (ASN)	Action Research (P.R.Nayar)	Problems and issues in Primary Education(KKV)	Panel Discussion (BS/SKS/ULN/GPB /PRR)
4-8-98	Concern & Research questions (BS) Planning for Action Research(HLS)	Study –1 (HSS) Study-2 (SKS)	Group Work: Selecting & defining problem	DIET-wise presentation of the selected problems CP:DNN
5-8-98	Act and Observe(ULN) Reflecting & re-planning in Action research(SKS)	Study –3 (RRE) Study –4 (MS)	Group Work : Proposal -1	
6-8-98	DIET-wise Presentation of the proposal -1 CP: BSU/PRR		Group Work : Proposal -2	
7-8-98	Computers in Action Research (SNP)	DIET-wise Presentation of the proposal -2 (HLS/GPB) Plan of the Workshop -I (PRR)		Wrap-up session (HLS/SB/BSU/ASN /DNN)

SL.NO	GROUP	PERSON-IN-CHARGE
1	DIET-1	A.S.N.Rao Sindhe
2	DIET-2	D.N.Nagaraju
3	DIET-3	S.K.Shamala
4	DIET-4	S.Bhashyam
5	DIET-5	H.L.Sateesh
6	DIET-6	U.Lakshminarayana
7	DIET-7	G.P.Basavaraj
8	DIET-8	P.Ramachandra Rao
9	DIET-9	B.Sarada
10	DIET-10	B.S.Upadhya
11	DIET-11	U.Laksminarayana

REPORTERS

DATES	REPORTERS	CONSOLIDATION
3-8-98	H.L.Sateesh	D.N.Nagaraju
4-8-98	U.Lakshminarayana	
5-8-98	S.Bhashyam	
6-8-98	B.S.Upadhya	
7-8-98	S.Bhashyam	

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LEVEL :1 WORKSHOP - I

DATE	10.00 -11.15 HRS	11.30 - 13.00 HRS	14.00 -15.15 HRS	15.30-17.00 HRS.
18-8-98	Registration, DIET-wise presentation of Action Research (**Activity -1**) and Feedback (CP:P.R.Nayar/HLS)			
19-8-98	DIET-wise presentation of Action Research (**Activity -2**) and Feedback (CP: PRR/SB/DNN/GPB)			
20-8-98	Analysis , interpretation & Reporting (P R Nayar)	Introduction to MS WORD (DNN)	Hands on experience in groups - MS WORD	
21-8-98	Group Work: Tool Development	Introduction to MS EXCEL (DNN)	Hands on experience in groups - MS EXCEL	
22-8-98	Group Work: Tool Development	DIET-wise presentation of the changes in plans & sample tools CP: ULN/BSU/BS/SKS) Plan of the Workshop -IIPRR)		

Note: Reporting of each session's activity will be done by the DIET Faculty

LEVEL :1 WORKSHOP - II

DATE	10.00 -11.15 HRS	11.30 - 13.00 HRS	14.00 -15.15 HRS	15.30-17.00 HRS.
6-10-98	Registration, DIET-wise presentation of Action Research (**Activity -1**) and Feedback CP:ULN/SB/PRR/BSU			
7-10-98	DIET-wise presentation of Action Research (**Activity - 2**) and Feedback CP:DNN/HLS/GPB/SKS			
8-10-98	Group Work Analysis & interpretation / Library work			
9-10-98	Group Work Analysis & interpretation / Library work			
10-10-98	Group Work Analysis & interpretation / Library work			
11-10-98	Group Work Analysis & interpretation / Library work			
12-10-98	DIET-wise presentation of the First Draft of Action Research (**Activity - 1**) and Feedback CP:ULN/SB/BS/SKS			
13-10-98	DIET-wise presentation of the First Draft of Action Research (**Activity - 1**) and Feedback CP:DNN/HLS/GPB/PRR			
14-10-98	DIET-wise presentation of the First Draft of Action Research (**Activity - 2**) and Feedback CP:BSU/HLS/BS/PRR			
15-10-98	DIET-wise presentation of the First Draft of Action Research (**Activity - 2**) and Feedback CP:DNN/ULN/SB			Planning of the Sharing Workshop (BSU)

Note: Reporting of each session's activity will be done by the DIET Faculty

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LEVEL :1 SHARING WORKSHOP

DATE	10.00 -11.15 HRS	11.30 - 13.00 HRS	14.00 -15.15 HRS	15.30-17.00 HRS.
4-11-98	Registration, DIET-wise presentation of the Action Research Reports CP:ULN/SB/PRR/BSU			
5-11-98	DIET-wise presentation of the Action Research Reports CP:DNN/HLS/GPB/SKS			
6-11-98	DIET-wise presentation of the views and opinions on Action Research CP:ASN/ULN		Consolidation of the Programme outcomes(PRR)	Concluding Session Compere :BS

Note: Reporting of each session's activity will be done by the DIET Faculty

EXPERTS' VIEW

ACTION RESEARCH - A CONCEPT

Prof. Nayar. P.R.

Concept

The concept of Action Research was developed in the late forties; it has changed and evolved to some extent since. It does not make sophisticated or technically rigorous research – basic or applied; still it is functionally relevant, productive and useful. It doesn't aim at theory formulation or validation; still it utilizes good observations and sound principles in order to design, evolve, systematically try out, prove and stabilize good features, practices and sub-systems. It doesn't attempt to make generalizations or findings with universality; it is rather concerned with the immediate set up, group, concerns and problems. It is a sort of micro-experimental research; it is narrowly delineated in space, time, focus and thrust. No population is covered/studied; so, no sample is taken. The concern here is one's own situation and specific problems felt therein – difficulties, deficiencies and defects. It is situation specific, but not as extensive or intensive as naturalist inquiry. More importantly, Action Research

- Aims at improving things in the given context;
- Signifies change, innovation and betterment;
- Seeks to solve felt problems and/or try out and test promising ideas, solutions, innovations, etc.;
- Tests purposefully planned and promising programmes of action;
- Reflects professional competence, commitment and growth;
- Shows readiness – even urge – to change things for the better and accept the challenge thereof;
- Implies systematic experimentation (though with limited controls, comparisons and a weak design);
- Establishes practicality and productivity with conviction and throws up superior alternatives;
- Makes for adoption, stabilization and popularization of better features, practices, system components, etc.

Though Action Research focuses on 'local solutions to local problems,' its findings may be relevant to and useful for similar situations elsewhere. It may be undertaken by individual, teams or even on a collaborative basis involving different persons/teams in different places; in the latter case suitable modifications or variations are not only

permissible but necessary. Further, analysis of data, formulation of findings, etc., may be done separately. Again, the focus may be on one's own specific classroom problems, overall institutional problems/concerns or even more general concerns/problems – but they have to be identified and specified (pin pointed and clearly defined) before designing and conducting Action Research.

Concerns and problems: *Identification and Analysis*

The concern may be with any aspect or component of the system – its strengthening or improvement. A problem is a felt difficulty or dissatisfaction; it may imply a deficiency, defect or weakness of any other kind. One area of concern has to be selected and the specific problems/features identified, defined and prioritized. The focus may be on one specific problem or even a few which are intimately related and go together. They may be academic or non-academic in nature. They have then to be examined and analysed in order to identify the probable causative or contributory factors and other contextual factors of relevance, apart from the symptomatic features. To solve a problem, it may have to be tackled not only at the symptom level, but also at the root level. Ideas or points for change or solutions may emerge from them and have to be related to them. The sources for such ideas may be one's own background and thinking, observations around, discussion, reading and other kinds of 'searches'. The ideas or points that come up have to be critically examined or evaluated and judged on their merits – promise or possible productivity, practicality, possible difficulties in implementation and ways of overcoming them, etc; lateral, critical and constructive thinking would be involved in this.

Action strategies/hypotheses: *Formulation*

It is important to define basic assumptions or position (if any) and also the basic approach to be adopted in solving the selected problem(s) or testing the innovation concerned. Clear strategies, with specific tactics and techniques may emerge from them and in any case have to be matched with them. The latter also have to be clearly formulated as strategy statements (principles and lines of action) or as research questions or action hypotheses (on their productivity). Often, a multi-pronged approach, multiple-strategy or set of action-lines may be adopted rather than a single strategy or

line of action. Intelligence, imagination, professional sense, resourcefulness, innovation and creativity would come into play at this stage and the next. (But it is no shame to accept good 'models' and replicate, imitate and emulate; better to adopt models to one's conditions and needs before adopting them.)

Both the 'outcome variables' (intended effects or products) and the 'process variables' (components, features) would be explicitly mentioned or at least clearly implied in these formulations.

Action Programme: *Designing and Planning*

This phase consists of

- Defining the beneficiaries/target groups, participants, etc;
- Defining the basic principles to be followed and precautions (if any) to be taken;
- Re-defining the action strategies and elaborating the specific tactics and techniques to the extent necessary;
- Selecting and defining the action lines, components, and features (other than the above);
- Identifying and listing/defining specific activities to the extent necessary;
- Sequencing specific components/activities and scheduling them appropriately;
- Structuring (inter-relating or linking) different lines / components / activities;
- Identifying the support materials and preparatory exercises for each component/major activity, and
- Relating them to the sequences/schedule.

The 'design' would give a broad outline in summary form; it should be supplemented by detailed planning of the entire action programme, covering all the above aspects – and more, if necessary. In other words, ' what to do', and 'how to do them', (including who, where, when, with what) all through the experimental programme must be spelt out in all essentials. No plan should be taken as rigid; reasonable flexibility and change should be permissible even re-planning or revision (but such changes should be recorded). The action programme may be as long and substantial as considered desirable or necessary to bring about the desired changes to a marked extent.

Conducting Action Research – *Implementation*

A clear design and a detailed plan should make the execution smooth and productive. All activities planned must be prepared for and carried out well in good faith and with all earnestness. The continual programme evaluation should help in review and revision/re-planning as necessary. It may even be planned in cycles (plan-act-review-feedback-re-plan-act/continue) with clear phases in the total programme. All relevant records must be collected, organized and maintained properly, all intended data too, as planned.

Evaluation – *Data collection, analysis and interpretation*

The plan must provide for adequately comprehensive and continuous evaluation and collection of relevant data. Ideally the principles and methods of programme evaluation (covering processes and products, in relation to context and inputs) should apply; also student evaluation, where academic or developmental programme components figure. Both have to be clearly objective-based and reasonably objective and valid. Subjective perceptions of participants are relevant too. Pre test-Post test comparisons (or initial-intermediate-final position comparisons) would be appropriate where achievement or developmental outcomes are in focus. A variety of techniques and tools would have to be used; diary-keeping continuous observation, special sampled observations, anecdotal records, observation and interview schedules, questionnaires and inventories, tests (oral, written, practical), etc., may be used as necessary. Formal testing may be resorted to where measurable variables (the achievements, abilities, attitudes and personal qualities) are in focus as 'outcomes'.

Analysis is an essential and important component of any research or systematic experimentation. In this case, it may include:

- A brief description of the course or progress of the action programme as planned and carried out;
- A critical analysis or qualitative evaluation of the programme (process in particular) emphasizing the strengths and weaknesses, the plus points and the minus points, difficulties encountered and ways of overcoming them, objective-subjective perceptions of the target groups and participants etc. (separately, or integrative with the above description)

- Qualitative evaluation of the 'outcomes' or 'effects' as assessed through continual observation and other informal and formal techniques of evaluation) and depicting the trends of changes/gains; variables – taken in wholes or in components (like different levels/kinds of achievements, cognitive capabilities etc.)
- Descriptive statistics, giving pictures of the initial, intermediate and final positions, extent of changes or gains, comparisons between such positions etc. (as appropriate)
- Graphical representation of initial and final positions, and more importantly of the extent of gain.
- Inferential statistics, testing the significance of difference between the initial and final positions, and such other statistics as appropriate.

These may be done separately for different target groups or institutions. The above would yield different kinds of findings of the action research. These may be interpreted in terms of their meaning, significance, cause-effect relationships, implications for practice and change, etc., (not necessarily as additions to knowledge); they may also be compared with findings in similar (not identical) or comparable projects; and together they may yield moderately valid generalizations on viable alternatives, superior strategies and practices (though the intention was not to seek generalized inferences and conclusions).

Conclusion:

It should be emphasized that all formulations/generalizations of action research are tentative, nothing is absolute or final, there is no one way of doing something well, there are alternatives and choices and things must be varied in relation to relevant factors and considerations.

PROBLEMS AND ISSUES IN PRIMARY EDUCATION

Prof.Vasishtha.K.K

There are innumerable problems and issues of a variety of nature which concern primary education. These may be classified as General V/s Specific, National V/s Regional or Local, Administrative V/s Academic, Content V/s Pedagogical, Educational V/s Socio-political and so on and so forth. No exhaustive list can indeed be drawn. It may be noted that issues are more general and broad in nature as compared to the problems obtaining therein. Some of these are listed below:

Issues pertaining to:

1. Decentralization of primary education: Should Panchayats have full control over primary education? If not, to what extent and in which areas and how? (Refer 73rd and 74th Constitutional Amendments).
2. Primary education as a fundamental right.
3. Prevention of child labour vis-à-vis free and compulsory primary education.
4. Years of schooling at primary stage.
5. The medium of instruction at primary stage - Mother tongue or Regional language or any other?
6. Integration of handicapped children into mainstream.
7. Teaching of homogeneous v/s heterogeneous groups in primary classes.
8. Single teacher/multi-grade teaching at primary stage.
9. Enhancing teachers' motivation.
10. Teaching of all subjects by one teacher - or should there be subject-wise teachers at primary stage?
11. Integration of Environmental Studies - If the system fails to integrate, should we revert to teaching of General Science and of Social Studies separately?
12. Home assignment to students – Should it be abandoned? Or how and in what manner to be prescribed?
13. Revamping of supervisory and monitoring mechanisms at primary stage.
14. Modalities of community participation in school activities.

Problems in Primary Education:

1. Enrolment, particularly with reference to socially deprived sections, minorities, slum dwellers, hill tribes and migratory population.
2. Retention of girls in educationally backward areas.
3. Lack of parental involvement
4. Disbursement of mid-day meals.
5. Marking fake attendance both for students and teachers.
6. Change in attitudes of teachers through recurrent in-service education.
7. Capacity building of teachers and drawing the best out of them
8. Inculcation of desirable habits, attitudes and values amongst children.
9. Automatic promotion to next grade without ensuring achievement (mastery of specified competencies).
10. Large sized classes and their management
11. Managing multi grade – multi level teaching.
12. Availability of teacher-pupil contact hours.
13. Availability of materials and use of available ones.
14. Enhancing the quality of primary education both in terms of academic achievement and development of personality.
15. Non-mastery of MLL.
16. Unsuitable learning habits and poor handwriting.
17. Organizing activity based teaching and also ensuring learning.
18. Arranging and organizing remedial instruction.
19. Monitoring and supervision.

Other than these, there are a number of administrative problems such as inadequate buildings, insufficient teachers, untrained teachers, placement, transfers and promotion of teachers, lack of academic and administrative support to teachers, accommodation for teachers in rural areas, maintenance of records, inadequate facilities and other socio-political problems. *Teachers need to look around carefully to identify problems hampering the growth of students and of institution and examine them vis-à-vis their jurisdiction and capacity to be able to effect any change before undertaking Action Research.*

TEAM'S APPROACH

ACTION RESEARCH - AN APPROACH

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time
T.S.Eliot *(Little Gidding)*

Objective:

The reader understands

- *What action research is;*
- *The main features of action research;*
- *The steps followed in action research; and*
- *The advantages of action research over conventional research.*

INTRODUCTION:

The first standard students invariably go to sleep during the fifth period of the day. With the change over of every period, there is utter confusion in III standard and a good ten minutes are taken away from the planned lesson. The IV standard students have a problem in division with borrowing. The students of standard V commit a lot of spelling mistakes in Kannada. Teacher X never returns the students' assignments. The Headmaster never takes note of the innovative practices of teacher Y. There is a handful of young boys in the nearby slum who are not attending any school. These are but a very few of the myriads of problems confronting us in the sphere of education. Some of them are general to all the schools; but many are specific to each locality, each school, each teacher and each group of students. Where lies the solution for these?

What about all the educational research that has been and is being carried out in our Universities and research institutes? But invariably, people, who perhaps have never taught primary school children, carry out these researches. Their samples are not existing groups of students, but some reshuffled or filtered groups. Their studies are

conducted under artificial conditions. Their suggestions are too time-consuming and costly to be practised. There are also other reasons like inadequate dissemination of the research findings, time lag between the generation of new knowledge and its application in the classroom, isolation of the direct beneficiaries and apprehensions in the minds of the teachers about their capability to take up research in classroom situation. Well then, where do we turn for a solution to our day to day classroom problems? The answer is action research.

WHAT ACTION RESEARCH IS:

Conventional researchers are committed to rigorous procedures; the classroom practitioners need flexibility and intuition in dealing with practical situations. Researchers adopt a stand of neutrality, which poses a problem to the teachers; they have a strong value commitment to their projects. In action research, the practitioner becomes the researcher. Action Research aims to help practitioners refine their own educational practices. It tries to do this by bringing research into the classroom setting. Action research combines a strong research component with a respect for participants' knowledge and understanding. It provides a way of working which links Theory and Practice in to the one-whole. Action and Research are integrated and proceed simultaneously.

Action Research may be defined as **"a form of collective, self reflective, scientific enquiry undertaken by practitioners in their immediate situations in order to improve their own social or educational practices."** Kurt Lewin, who is considered the father of action research, first generated the concept of action research in 1946. This approach has not been widely employed in educational research.

WHAT ACTION RESEARCH IS NOT:

- It is not the usual thing that teachers do during the course of their regular teaching.
- It is not just problem solving.

- It is not research done on other people.
- It is not the rigorous fundamental research.
- It is not the testing of educational theories or of highly specific hypotheses.
- It is not the research done outside the portals of the classroom by people outside the school.
- It is not a high level academic exercise without immediate application to the classroom.

KEY POINTS ABOUT ACTION RESEARCH:

Hult and Lennung (1980) and Kemmis and McTaggart(1988) have outlined a number of key features of action research:

1. Action research takes place in an immediate situation.
2. It is performed collaboratively.
3. It is a scientific attempt of putting practices, ideas and assumptions to test.
4. It is participatory: it is research through which people work towards the improvement of their own practices.
5. It is an approach for improving education by changing it and learning from the consequences of changes.
6. It starts small. It normally begins with small changes, which even a single person can try, and works toward more extensive changes.
7. It begins with small groups of collaborators at the beginning, but widens the community of participating action researchers.
8. Those affected by the planned changes in action research have the primary responsibility for deciding the course of the research.
9. It is a cyclical process of planning, action, observation and reflection.
10. Action research is open-minded;
11. It offers a flexible approach to school improvement through critically informed action and reflection.
12. It works in the real complex and often confusing circumstances and constraints of each school.

13. It simultaneously assists in practical problem solving and expands scientific knowledge.

14. RESEARCH is used to evaluate ACTION and ACTION provides an experimental situation for RESEARCH.

THE COURSE OF ACTION RESEARCH:

I. LOOK:

What is the starting point for action research? It is the genuine concern of people to improve whatever is happening around them. People should be not only open-minded; but in the first place, they should be open-eyed. Look with concern.

I. a. Concern: Look at what causes you concern; what you are concerned about; what needs to be improved. One or more persons may be concerned about the same point. The conditions that cause concern need not be problems - not something pathological, but just that they could be improved. The 'concern' may be related to classroom teaching, discipline, administration or some community situation.

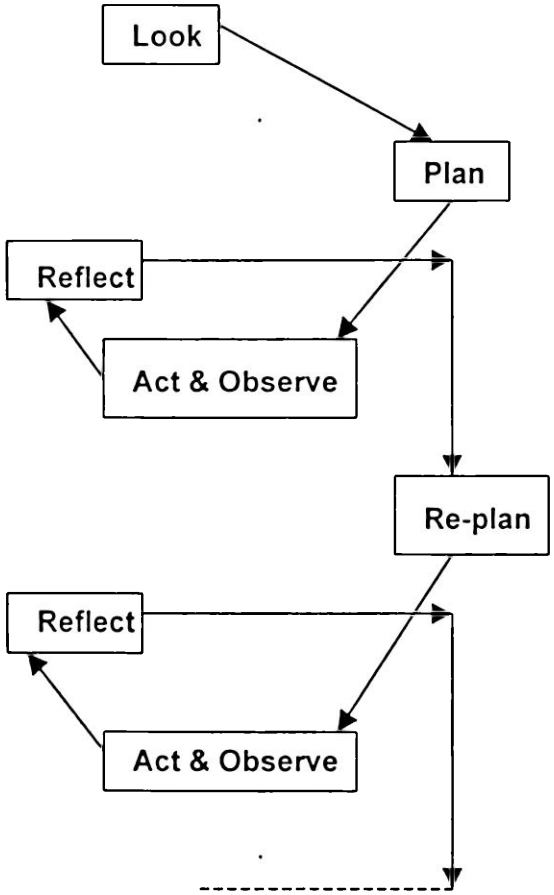
I. b. Research questions: Once the concern has been identified, questions are posed. Why are things as they are? How can they be improved?

II. PLAN:

The concern and the research questions serve as the starting point for the action research. Then the research goes through repeated small cycles of planning, action, observation and reflection.

II. a. Collaborators: Action research is collaborative. Once it has been decided which prevailing practice or an aspect of it needs improvement, the next effort is to collaborate with people who are also concerned about the same; they may be the colleagues, headmaster, parents or students themselves. To begin with, it may

ACTION RESEARCH SPIRAL



Moves in Action Research

LOOK →	PLAN →	ACT →	OBSERVE →	REFLECT
• Concern ↓ • Research questions →	• Collaborator ↓ • Evolution of the plan ↓ • Proposed change in practice →	• Change in action →	• Evidence for change →	• Findings ↓ • Validation

be a small group of two or three and in the subsequent cycles, the group may enlarge.

II. b. **Evolution of the plan:** A particular practice needs to be changed. What strategies can be adopted to effect a change for the better. An answer to this may be borne out of discussions with the collaborators and/or others, who may also be interested in the practice. A review of related literature may help in choosing strategies. At times, the experts' opinions may also be sought. In yet other cases the plan evolves out of sheer intuition. At this stage the tools that may be required to assess the effects of the change will also have to be planned.

II. c. **Proposed change in practice:** Various alternatives may be thought of. All these should be critically analysed. Finally one or two strategies may be tried in the action research. The solution to the problems may be hypothesised. The plan for change should be forward-looking. Often it may be ill-defined; but with subsequent cycles, it would get refined. The plan should be flexible to adapt under the existing situation, with prevalent constraints of the school and also to be carried out in a short duration.

III. ACT:

The change in action: It is the deliberate and controlled implementation of the plan. It is a careful and thoughtful variation of the existing practice. The context and the constraints may necessitate a modification of the plan at the time of implementation. This calls for instant decision and practical judgement. First of all, the tools, if any, will have to be prepared. Then the plan has to be carried out step by step.

IV. OBSERVE:

Evidence for change: When the change is being put to test, there should be elaborate and careful documentation of the effects of the changed practice. The evidence for the effects of the change may be gathered in different ways. In other words, there could be data from multi-source. The data could be quantitative or qualitative. Unlike in the conventional research not only the

objective data, but also the subjective data have significance in action research. The evidence could be from a questionnaire or an interview or performance or the views and opinions of the students, peers, educators or parents or the observation of the body language of the participants. The observation could be undertaken by the collaborators, colleagues and/or the HM, in addition to the researcher himself. The researcher should be responsive and sensitive to the situation; he should also be open-eyed. He should be ready to document the unexpected also; he should be open-minded. Utmost care and sincerity should be exercised in documenting the evidence, as this provides the basis for the reflection.

V. REFLECT:

V. a. Findings: A thorough scrutiny and analysis of the collected evidence would reveal how effective the changed action has been in bringing about the desired result; if it has really improved the existing practice. The research tells you what sort of an action brings in what sort of an improvement; thus it adds to the knowledge. Though most of the action researches address local problems, some of them do deal with problems of a more general nature. In that case, if the research yields a positive result and if a new procedure or technique or practice has been tested, this may catch on with the other teachers in the same school, then with the other schools, the entire district, the State and the country in subsequent cycles; it would gain wider acceptance and be acclaimed as a standard practice in due course. On the other hand, if the research has not yielded a positive result, then alternate strategies may have to be tested in subsequent cycles. Even if the result has been positive, the problem may be better defined and the strategy also further refined subsequently or additional strategies may also be put to test. Thus reflection leads to re-planning.

V. b. Validation: The effect or the impact of the new practice has to be validated before it could be accepted. Validation is done by analysing the data. If the data

is quantitative, statistical analysis and interpretation can be resorted to for the purpose of validation. If the data is qualitative, different procedures of validation may have to be adopted. Reporting the findings and critical discussion serve the purpose. The views of different groups of people will be useful at this stage. If validation leads to the conclusion that the effect of the changed practice is inadequate or further improvement is required, the action research has to go through a next cycle of re-planning, action, observation and reflection. With every cycle the educational practice will be progressively improved. During the course of the research, it might occur that it is some other aspect of the educational practice that needs to be improved; this will lead to another action research.

ADVANTAGES OF ACTION RESEARCH:

- It is more acceptable to teachers.
- It does not require expert training in measurement, statistics and research methodology.
- It takes place in far more naturalistic settings.
- Pupils taught by the teacher are used as subjects.
- It deals with total situations and recognises the complexity of constraints.
- The demand on resources for action research is very little.
- It is highly flexible.
- Research and Action can be mutually supportive.
- The findings are straightaway applied to the classroom transactions.
- It serves as a sort of in-service training.
- It enables socially committed researchers to work towards social change as well as the expansion of norms.
- It may be one way of creating a 'transformative' school, which aims to transform social relations rather than simply replace them.

CONCLUSION:

When the teacher and the researcher become one, there is no question of any time lag in the newfound knowledge entering the classrooms. What is more, the findings of action research are absolutely relevant to the subjects, situation and time. The application of the new knowledge need not be a separate effort, as the transformation from the old to the new practice is concurrent with the action research. Action research gradually transforms the practitioner-teacher, the situation in which he acts and the teaching-learning process. It is not a single cycle of processes; it is a systematically evolving, living process. It is an ongoing process, with one cycle leading to further cycles and one action research paving the way for other researches. It is never ending, for there can be no end to transformation and evolution. Action research is a perennial spring - a spring of concern, research, action and knowledge.

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LOOK

Let 's look around ourselves; are we happy about everything that is going on? At times we may feel that there is nothing to complain about. Let us not be complacent; complacency leads to inaction - stagnation. Under such a state of affairs, neither shall we have the enthusiasm to try anything new nor will our students be inspired. So, let's start looking around a little more carefully; a little deeper and with a little more concern. At this juncture, one point needs clarification. In action research, we are not talking only of problems - something pathological, so to say - abnormalities; the concern may be just to improve some existing practice - one's own method of teaching, classroom management and so on. No man is perfect; nor is any teacher! In the first place, there should be the will to introspect and for self-improvement. Now, let us wake up to the situation and look around with open eyes and open mind and with concern.

Concern

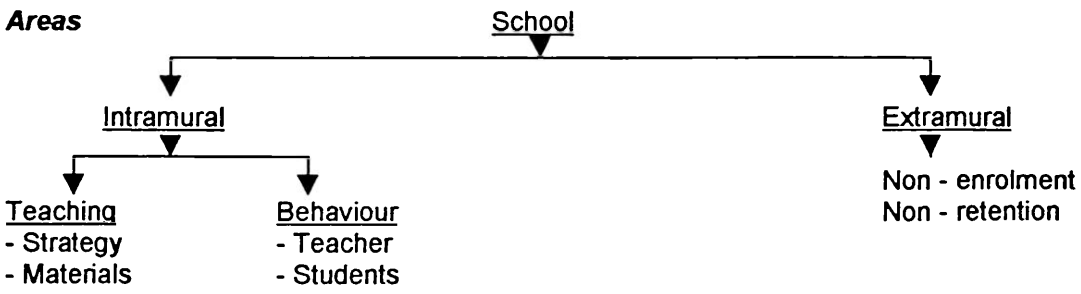
Nature

- Problem / issue / something that causes dissatisfaction
- Situation / strategy / practice that needs to be / could be improved
- General / specific.
- Clear / ill - defined.

Sources

- Self: introspection -reflecting on each lesson, making notes and planning for improvement or a different treatment while teaching next time.
- Students: behaviour, performance (written, oral & practical) and questions / doubts / comments.
- Colleagues: Discussion / comparing notes.
- Parents: Complaints / remarks.
- Community: Conversations / press (educational columns).

Areas



Selection To be determined by the teacher's jurisdiction and capacity to effect any change.

PLAN

Plan facilitates the smooth sailing of the various Action Research operations, thereby making research as efficient as possible yielding maximum information with minimum expenditure of efforts and time. Advance planning is essential for data collection and techniques to be used in analysing the data. Proper research design provides guidelines for the collection of relevant evidence, means of obtaining information, determining the sample, minimising bias and to decide the range of flexibility.

Small **Cycles** of **Plan - Action - Observation - Reflection**

Questions to be kept in mind while planning

- *What is the Study about?*
- *Why is the Study being made?*
- *Where will the Study be carried out?*
- *What type of data is required?*
- *Where can the required data be found?*
- *What periods of time will the Study include?*
- *What will be the sample design?*
- *What techniques of data collection will be used?*
- *How will the data be analysed?*
- *What will be the style of reporting?*

Action Research is **collaborative**

- identify parties concerned
- form groups

1. Evolution of the Plan:

- Evolve a plan through discussion with colleagues and identified parties.
- Expert counseling /opinions.
- Sheer intuition.
- Professional reading (review of related literature and Studies).

2. Proposed change in Action (practice)

- What strategies can be adopted to effect a change for better?
- Various alternatives may be considered.
- Selection of one or two action strategy (ies).
- The solutions to the problem have to be ***hypothesized.****
- Plan for change should be forward looking.
- Flexible enough to adapt under the existing conditions.
- ***Methodology*** ** to be decided for the Study.

*** Working Hypothesis**

Working hypothesis is a set of suggested tentative solutions or an explanation of a research problem, which may or may not be the real solution.It should be

- clear and specific (precise and stated in simple terms).
- testable.
- limited in scope.
- explicit about the relationship between variables.
- amenable to testing within a reasonable time.
- consistent with most of the known facts.

How does one go about developing *Working Hypothesis*?

1. Discussion with colleagues and experts about the problem, its origin and objectives in seeking solutions;
2. Examination of data and records, if available, conceming the problem for possible trends, peculiarities and other clues;
3. Review of similar studies in the area or of studies on similar problems;
4. Exploratory personal investigation which involves original field interviews on a limited scale with identified parties and individuals with a view to secure greater insight into the practical aspects of the problem.

Thus, *working hypothesis* arises as a result of thinking about the subject, examination of the available data and materials including related studies and counsel of experts and identified parties.

****Methodology**

Preparing the research design (methodology) includes:

Sample – Tools – Data collection – Time schedule – Recording procedures

ACT AND OBSERVE

Act and Observe

Execution of Action Research

The success of any action research depends on the way in which it is executed. The effective execution of action research always depends on the following:

• *Components*:	Meaningful, purposeful and goal-directed activity/ies;
• *Data*:	The data should be collected through appropriate and suitable tools and should be adequate and dependable;
• *Course*:	Sequential and logical arrangement of the designed tasks;
• *Time frame*:	Proper time allocation for the proposed task and its completion within that time frame;
• *Recording*:	All the evidences have to be recorded and maintained diligently with proper coding so that smooth analysis of the data can be carried out; and
• *Field check*:	Occasional field check is necessary to judge the authenticity of the data collected.

1. ACT

The Change of Action

After planning the action research, an action researcher has to execute the proposed action. The proposed action should be different from the existing one, to yield better outcomes - that is to say, the change of action or the new practice should be effective and forward looking. At this stage the action researcher has to have the acquaintance with the following steps:

- *Deliberate Implementation of the plan*: Implementing the action strategy has to be deliberate. It has to be carried out in its natural setting - without much artificiality.
- *Careful and thoughtful variation of the existing practice*: Any variation or change of action should be carefully and thoughtfully arrived at through meaningful discussions with the collaborators.
- *Flexibility:* The context and constraints of the situation, sometimes, compel the action researcher to slightly modify the meticulously planned action. This calls for some kind of flexibility.
- *Tool Preparation*: Appropriate and suitable tools have to be prepared or adopted for assessing the effect of action strategy.

2. OBSERVE

When a change is being put to test, there is a need for elaborate and careful documentation of the effects of the changed practices through suitable and appropriate tools. Proper observation and recording of the relevant data are necessary for future course of actions like analysis and interpretation.

Evidence for Change

Action researcher has to collect adequate evidence for the effectiveness of the change of action. The evidences have to be gathered through multiple sources.

There are several methods of collecting data. Important ones are observation method, interview method, through questionnaires, through schedules and discussions in small groups apart from use of tests.

- *Observation method*: The observation method is most commonly used. Observation becomes a scientific tool and the method of data collection for the action researcher, if systematically planned and recorded and subjected to checks and controls. *Direct observation*, if done accurately, eliminates subjective bias and the information gathered relates to what is currently happening. While using this method, the action researcher should be clear in his mind as to : What should be observed? How should the observation be recorded? How can the accuracy of the observation be ensured?

- *Interview method*: The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses.

- *Questionnaire*: This method of data collection is very popular, particularly in case of big inquiries. Before using this method, it is always advisable to conduct a " pilot study " for testing the questionnaire.

- *Schedules* (Proforma containing a set of questions): This method of data collection is very much like the collection of data through questionnaire, with a difference that lies in the fact that schedules are being filled by the enumerators who are specially appointed and trained for the purpose.

- *Tests*: Tests are also administered to gather evidences required for action research. But for a teacher the accessibility of standardized tests is difficult.

Apart from these methods, the evidences collected through documents such as school records, cumulative records, mark registers, and teachers' diaries also help in getting better insights while analysing and interpreting the data..

The data, after collection, has to be processed and analysed in accordance with the outline laid down for the purpose at the time of developing the plan.

REFLECT

To paraphrase Mark Twain, *everybody talks about teaching students to think, but nobody does much about it.* To Think is to develop a **Plan, *to believe***. And **to believe** is to be ***willing*** to **Act**. At this stage, action researcher holds views concerning both **what is** and **what ought to be**.

"Thinking is finding and testing of meanings"(Boyd.H.Bode,1921)

Definition	*Complete Act of Thought*
	1. A recognised problem
" Finding ◄——►	2. Hypothesis(idea, suggestion
and	meaning,hunch)
testing ◄——►	3. Testing steps:
of	discovery-and-explanation
meaning"	prediction-and-verification

Reflect is a basic process of thinking to assess the action undertaken to solve the problem and the observation documented with utmost care and sincerity.

- *Observing the action and data collected;*
- *Approving of the activity, strategy or method used;*
- *Finding patterns and generalization in them;*
- *Forming conclusions based on observations;*
- *Assessing conclusions based on observations;*
- *Thinking critically - identifying unstated assumptions; and*
- *Confirming conclusions with facts.*

FINDINGS:

Findings based on :

- a thorough scrutiny and analysis of the collected evidence
- Influence, effects or impact of action strategies taken

Results

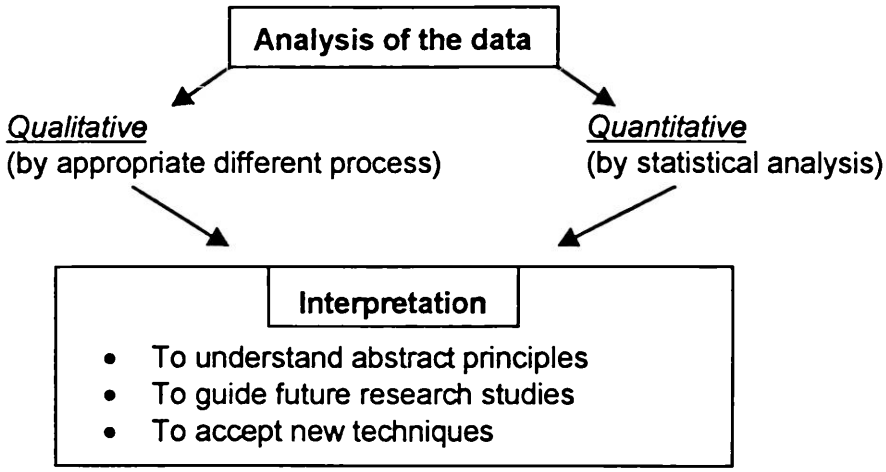
Positive results (with scope for modification and reinforcement to be disseminated to wider circles)

Negative results (lead to new cycles of **Think**, **Plan** alternate strategies, **Act** upon them and **Observe** them in subsequent cycles)

VALIDATION

Each act of finding calls for explanation; each prediction needs to be verified.

The effect or impact of new practice has to be validated before it could be accepted.



If validation leads to the conclusion that the effect of changed practice is inadequate or further improvement is needed, then the action research has to go through a next cycle of re-planning, action-observation & reflection.

REPORT WRITING

Preparation of report

- Logical analysis of the subject matter
- Preparation of final outline
- Preparation of the rough draft
- Preparation of the final draft
- Compilation of bibliography (name of the author, title, place/ publisher /date, number of volume / journal)

PROCESSING AND ANALYSIS OF DATA

The data, after collection has to be processed and analysed in accordance with the outline laid down for the purpose at the time of developing the action research plan. Technically speaking, ***processing*** implies editing, coding, classification and tabulation of collected data so that they are amenable to analysis.

The term ***analysis*** refers to the computation of certain measures along with searching for patterns of relationships that exist among data groups.

Processing operations:

• Editing:	Data - *Descriptive* (literate, sex, honesty, etc.) *Numerical* (Height, weight , income, etc.).
• Coding:	Process of *assigning numerals to descriptive data.*
• Classification:	*Reducing the data to homogeneous groups* to find the meaningful relationships.
• Tabulation:	*Summarising raw data* (arranging logically) and *displaying* the same in a compact form for further analysis.

Statistics

Statistics has two major purposes in the field of educational research

1. To summarise or simplify the data that have been obtained.
2. To obtain descriptions or inferences to be made from these data.

Minimum Statistics knowledge is sufficient to begin with for analysing the data

Commonly used statistical measures are:

- Measures of central tendency(Arithmetic Mean, Median).
- Measures of variance (range, variance and Standard Deviation).
- Measures of relationship(Correlation).

Arithmetic Mean verage and Median

Possibly, the most commonly used statistical calculation is the ***average*** and it is easy to handle. The word *average is usually used to refer to a value obtained by adding together a set of measurements and then dividing by the number of measurement in the set.* Actually, this is a special type of average and is technically called the arithmetic mean.

$$\text{Arithmetic Mean (AM)} \Rightarrow \frac{\text{Sum of all the scores}}{\text{Total number of scores}}$$

Eg.1 : 5 racers ran the 100 metre dash. Their times were recorded as 10.4 sec.,11.5 sec.,9.9 sec.,10.5 sec., and 12 sec., What was the average time for the racers?

$10.4 + 11.5 + 9.9 + 10.5 + 12 = 54.3 \div 5 =$ **10.86** seconds

The **median** is *a such value that half the observations fall above it and half below it.*

Eg: 2 : What is the median time in 100 metre race if the times are 10.4sec., 11.5sec.,9.9 sec.,10.5 sec., and 12 sec.,? It is easy to spot the median if the times are arranged in order by value. Starting from the shortest time the values are:

9.9 sec. 10.4 sec., 10.5 sec., 11.5 sec., 12 sec.,

The median is the middle time (**10.5** sec.)

(If the number of data value is an even number, then the average of the two middle values is the median)

Standard Deviation (SD)

The Standard Deviation is a more sensitive measure of variability than range because it takes into consideration every score, rather than just extreme scores. A basic formula for the SD is as follows:

$$SD = \sqrt{\Sigma d^2 / N}$$

Note: Σ - sum of ; d - Difference from Mean, N - Number of scores and $\sqrt{}$ - Square root

Eg. 3 : Suppose you are given this set of scores: 10,8,17,4,11,8,12 and asked to calculate SD, the calculation would progress as follows:

Score(x)	Difference from Mean(d)	d^2
17	10 - 17 = -7	49
12	10 - 12 = -2	04
11	10 - 11 = -1	01
10	10 - 10 = 0	00
08	10 - 08 = 2	04
08	10 - 08 = 2	04
04	10 - 04 = 06	36
$\Sigma x = 70$		$\Sigma d^2 = 98$
N = 07		
Mean = 10		

$$SD = \sqrt{\Sigma d^2 / N} = \sqrt{98/7} = \sqrt{14} = 3.742$$

This introduction to basic statistics is felt adequate for the novice researcher at this stage. Other measures of variance, correlation and anything more will be taken care of by the computers. Please don't worry yourself unnecessarily. You enter the data carefully and verify them just to check that you have not missed out any. *Bring the entered data on* ***Excel File We shall help you to analyse and process your data.***

REPORT WRITING

Preparation of report

- Logical analysis of the subject matter
- Preparation of final outline
- Preparation of the rough draft
- Preparation of final draft
- Compilation of bibliography (name of the author, title, place/ publisher /date, number of volume / journal)

PREPARATION

Lay out of the report

Preliminary pages

- Acknowledgement
- foreword
- table of contents
- list of tables
- list of illustrations

Main text

- introduction
- research questions
- statement of objectives
- plan (collaboration, evaluation of the plan & proposed strategies/ working hypotheses)
- implementation
- analysis
- reflections(findings & suggestions)
- conclusions

End matter

- Annexure (questionnaire/tools used, technical data)
- Bibliography

WITH COMPUTERS

WE AND COMPUTERS

Computer technology is advancing rapidly, and like it or not, computers will have a growing impact on all of us. They will be smaller, but they will be able to do more things.

- Robots are being developed that can see to analyze images and perform inspections of tasks in factories.
- We won't need coins to use telephones. A computer will recognize our voices and add the phone call charges to our house telephone bills.
- Many teachers in western countries use computers for preparing tests, worksheets, study guides, puzzles, illustrations with diagrams, inventory sheets, record grades and for management purposes. Further more teachers have students use computers in instruction for drill - and practice, tutorials, gaming, simulation discovery and problem solving activities.
  Why can't we use computer in Action research now?

Broad characteristics of computers are:

Speed,	*Storage*	*Accuracy*	*Versatality*	*Automation*	*Diligence*

Brief history of computers

Early development: Computers were invented as a result of man's need for fast and accurate calculation.

First actual tool for calculation – Abacus (5000 years ago – China)

Computers have passed through almost 4 generations and landed themselves presently in the fifth. Computers, in the making, will serve as our ears, eyes, mouth and brain –which can understand natural human language, recognize objects, learn, infer, reason and solve problems as humans do. They do this by inference – by drawing conclusions rather than by doing numeric calculations. What we used to call "Electronic brain" in science fiction stories and movies is no longer fiction.

The possibilities are endless, limited only by our imagination, and our ability to identify what people really need and want to make life easier and more productive.

Classification of computers:

Super computer	*Main frame*	*Mini computer*
Micro computer	*Home computer*	

Personal computer concepts: Any personal computer, which meets the standard requirement of an IBM is called a IBM PC compatible. It is called personal computer.

Operating system	*Programmes*	*Electronic worksheet*
Word presentation	*Data Base*	*Multi-media*

INTRODUCTION TO WINDOWS 95

You will :

understand how to start and exit from Windows;
learn working with Windows and icons;
create your Folder and File.

Introduction

Windows 95 is the most popular, powerful software in recent times which provides several features that are not only user friendly but also interactive. The class of software known as **GUI** (Graphic User Interface) has made it possible for the user to interact with computer in running several programmes that are unique. Many of these also have multimedia applications, which can be enjoyed by working with Windows. It is of immense help to the researchers in multifarious ways. Internet and Electronic mail, accessible through Windows 95, can be of help to the action researchers.

How to use Windows 95

- Click on the *Start* button for a display of program menus available.
- Click on the *Program* menu to see the various programs available.
- Click on the *selected program* from the menu to access the particular program. (Eg. **MS Word, MS Excel**, etc.,)
- Click on *Settings* for a display of various settings available (Do not change the settings if you are not sure)
- Click on *Find* to search a file or a folder when the name is known but the path is not known.
- Click on *printer* to enter printer set up to add a printer.
- Click on *Help* to activate the Help Window and access on line help.
- Click on *Shut down* to close the program and switch off the computer.
- Click on *Programs / Explorer* to see a detailed list of various programs /folders available.

Task 1 ⟶ Switch on the system and work on Windows

- Switch on the computer by pressing the Power Button.
- Switch on the display unit (monitor).
- Wait till the system loads and stabilizes.
- Observe the Icons on the monitor.
- Note the Task Bar and Start Button.

Task 2 ⟶ Accessing Programme

- Click on **Start** Button for display of menu
- Select **Programs** and Click on it.
- From the menu of the programme, select a Program and click on it for a display of that program.

Task 3 ⟶ Accessing different drives

- Click twice on **My Computer** icon.
- Note the display of the various **drives** available on the computer.
- Select **3½" drive** if you want to work on a floppy and double click.
- Double click on the subfolder you want to work on.

Task 4 ⟶ Formatting the disk

- Double click on **My Computer.**
- Click on 3 ½" floppy icon.
- Click on **file** and select **format** and click on it.
- A new window appears for formatting. Click **OK.**
- Wait till the disk is formatted.

Task 5 ⟶ Exploring the Windows Programs

- Click on **Start** and then **Programs**
- Select **Windows Explorer** and click.
- Windows Explorer displays a complete list of programmes.
- Double click on any program to access it.

Task 6 ⟶ Minimizing , Maximizing and Closing Windows

- Note three symbols on the top right corner of the screen with Windows Explorer. –, 🗗, X .
- Click on "-" to minimize the program window and place it on the Task bar.
- Click on 🗗 to set the program window to the original size.
- Click on 🗗 to maximize the window.
- Note the change of the sign to □

- Click on ☐ to reduce the window to original size.
- Click on **X** symbol to exit from the program/file.

Task 7 → Creating a folder

- On the **Explorer Window**, select the programme in which you want to work.
- Click on **File** to view a pull down menu – Click on **New** and Click on **New Folder.**
- Type the name you want on the folder.
  (Any file created in any program can be sent to this folder to save it).

Task 8 → Switching between the Programs

- Click any **Program** to open it. Minimize it and place it on the task bar.
- Click and open another program. Minimize it on the task bar.
- Note that these two programs can be accessed at your will by clicking on each of them.

Task 9 → Finding a File

- Click on **Start** button – select **Find** and click it.
- A window appears wherein you can type the file name and click on **Find** button.
- Note the display of the status of the file.
- If the file is in a different drive, click on **Browse** button, select the drive – Repeat the first 3 steps.

Task 10 → Seeking Online Help

- Click on **Start** button – select **Help** and click on it.
- Click **Index** on the help window.
- Type the Topic of help you want and click on **Display.**
- Note the display of a detailed help text.
- Click for further help or close the help program.

Task 11 → Shutting down the Program

- Click on **Start** and select **Shutdown**.
- Select the first choice in the option that appears as follows:
  - Want to shut down the computer
  - Want to restart the computer
  - Want to restart in DOS mode

[Note: We have to close all other running programs before shutting down the computer.]

Activities

Activity 1	*Switch on the system to work on Windows*
Activity 2	*Select Programme* " MS WORD"
Activity 3	*Explore the Windows Programs*
Activity 4	*Create your folder*
Activity 5	*Find your File*
Activity 6	*Shutdown the Program*

MS WORD

Microsoft "**Office**", a Window based programme, consists of the following:

- **MS Word** - *Word Processor*
- **MS Excel** - *Spread sheet*
- **MS Power Point** - *Presentations/Slide show*
- **MS Schedule** - *Contact/Time manager*

The basic window is similar in all these programmes. Thus a person working in one of these can easily adapt himself to other programmes.

The "**Word**" is a software package that helps to *create* and *edit* a **document**.

The **tasks** that can be carried out on **MS Word** are:

- **Typing** *document* using keyboard on any of the discs.
- **Retrieving** the documents from discs.
- **Copying / pasting** of the document (word/line/paragraph/tables, etc.,).
- **Selecting** *fonts* (size and style).
- **Inserting** Symbols/Pictures/Charts/Tables etc.
- **Checking** *spelling* and *grammar.*
- **Designing** *layout* for documents.
- **Printing** the documents using any of the available printers.

To access **MS Word** in Windows '95 programme:

- Click on '*Start*' button that displays the menu.
- Click on *Programme* to get a display of the available *Programmes.*
- Select *MS Word* in the Programme list and click to access the **Word** Window document.

Once the **Word** screen is displayed, you will find the following menus on the top of the screen on a menu bar.

File	Edit	View	Insert	Format	Tools	Table	Window	Help

Each of these *menus* provides a dialogue box when clicked on it. This will help us to get more and more user-friendly applications for creating documents.

Ex: Tool bar can be brought on the screen by clicking on view menu

The screen consists of the *scroll bars* to scroll vertically and horizontally. The vertical scroll bar is to the right side of the screen. Horizontal scroll bar is at the bottom of the screen.

To insert words between the texts, bring the cursor to the position where the word has to be inserted and press *insert* key on the keyboard and now type the word. To move the cursor without erasing the text, use *arrow* keys.

Creating and Editing Documents:

Creating a document involves typing text into the internal memory of the computer and saving it on the disk. *Editing* document involves correcting the spelling if any and spacing the words/sentences and paragraphs.

- Click *file* on the menu bar for a pull down menu.
- Click *New*, a dialogue box appears.
- Select blank document and click OK. *Start entering the text.*

Saving documents:

- Click *file* on the menu bar for a pull down menu.
- Click *save*. A dialogue box appears.
- Enter your file name in the prescribed window and click *save*.
- Now, your file is saved in the given name. Wait till it appears on the *title bar on the top of the screen.*
- If the document is to be saved on a floppy, select the appropriate **drive** from the *dialogue box* and click on *save*

Editing documents:

Editing the document involves operations to change font (size/ style); cut, copy and paste text; format the text; and align the text. In order to edit the text, the text area has to be highlighted first.

To change:

1. *Font size* – click on font size window on the formatting bar and select the appropriate size.
2. *Fonts* – click on font window on the formatting bar and select the appropriate font.
3. *Font style* - click on font size buttons on the formatting bar and select the appropriate font style viz., regular, bold, italics. The text can be underlined by using **U** button on the formatting bar.
4. *Formatting the text* – click on format menu; click on paragraph, select line spacing and click on single line spacing and click OK button.
5. *Aligning the text* – click on left, right, center buttons on the formatting bar to align the text left, right or center respectively.
6. Save the document after editing by pressing **Ctrl+S** keys together.

Closing the document:

1. *To close the document:*
   Click on *File* menu on menu bar and click on *Close.*
2. *To close the Word programme:*
   Click on *File* menu on menu bar and click on *Exit.*

Activities

Activity 1: *Boot* the system and access MS Word.

Activity 2: *Create* your own folder.

Activity 3: *Create* a document and enter the following text:

Many times when working with some programme in Windows one may require to make mathematical / trigonometric calculations. Instead of searching for a calculator we can make use of the computer's calculator. The display of calculator on the monitor helps to use it like any calculator.

Activity 4: save it by a giving a file name in your folder.

Edit the document as follows:

- Change *font* to Times New Roman
- Change *font size* of the document to 14
- Change the *text style* from italics to normal
- Make the words *bold* : mathematical / trigonometric
- *Underline* the words 'display of calculator'
- *Copy* the word 'calculator' and *paste* it as the title in font size 18 and *align* it to center
- Change the *line spacing* of the text to 1.5
- *Save* and *close* the modified document.

M S EXCEL

M S Excel is a Window based application like M S Word. This progrmme is a part of the package M S Office. There are quite a few operations, which are similar to those done in M S Word. The file in **Excel** programme is called a Workbook and a Workbook consists of several Work sheets.

Excel can be used for a variety of applications: Financial and Accounting, Statistical Analysis, Scientific Functions, Educational Research etc.

The important features of M S Excel are:

- Window based application makes it is easy to learn
- Large data management capabilities make it popular
- Data analysis features are easy and can be worked out quickly
- Multiple Worksheets enable to work on more than one set of data
- Objective linking and embedding feature enables embedding of charts, picture and videos on to the worksheets

Accessing the progrmme Excel

- Click on *start* button and then *Programme*.
- Select *M S Excel* from the list of programmes and click on it.
- M S Excel window is now open.
- Note that the *title bar*, *menu bar standard tool bar* and *formatting bar* are placed in the same way as it was done in M S Word.

Creating a new Work sheet

- Click on *File* on the menu bar
- Click on *'new'* select blank workbook and click *OK*.
- Note a workbook open up
- Note the several rectangles in the worksheet which are the cells, with the rows named by the alphabets and the columns by numbers.

Entering Data in a work sheet

The **data** to be entered in a worksheet may be in the form of numbers or text. Taking the *cursor* to the desired cell using either the mouse or the arrow keys enters this data.

The *height* of the cell in rows and the width of the cell in the columns can be adjusted according to requirements. To do this, take the cursor to the first row/ column. The cursor will now change shape indicating the selection of the particular row or column. When the arrow changes shape, press the mouse button and drag it as per requirement.

Hiding columns/rows: When large sized data consisting of several rows and columns are to be entered, it is difficult to keep the title of the data and data being entered in the same screen. In such cases, the data in between along with its row/column can be hidden. To hide a set of rows/ columns, first select the area to be hidden and click on format. Select row/column and click on hide. To unhide the hidden rows/columns, follow the same steps and click on unhide.

Editing worksheet: The **editing** operations like *cut*, *copy*, *paste*, and *undo/redo* are the same as in MS WORD. However, rows/columns and worksheets can be inserted/deleted depending on the requirements. To *insert rows/columns*, use insert menu. To *delete rows/columns*, use delete option from the edit menu. It is always necessary to highlight the area of selection for editing.

Calculations: MS Excel allows you to calculate using **formulae**. A formula bar is provided for this purpose. Type "=" to activate the formula. Write the formula expression in terms of rows/columns. This formula can be copied easily to other rows and columns for getting the results of those rows/columns.

An **auto sum** feature is also available on the standard tool bar with a symbol "Σ" on it. The *sum* of a row/column can be obtained by highlighting the row/column and

clicking on Σ. While selecting rows/columns *one additional cell has to be highlighted* to provide space for the results.

Function wizard: This feature enables to perform calculations directly using the data in the rows/columns. There are features like *statistical, accounting, percentage, average and many others* that can be worked out. To use this facility click on *function wizard button* on the toolbar and follow the instructions in the dialogue box for selecting suitable formula.

Charts: Data can be represented in different forms of **graphs** like *bar, pie chart, column, line etc.,* To obtain *graphs* select the data range by highlighting and click on chart wizard button. A dialogue box opens. Follow the instructions to obtain the graph.

(Note: In our next Workshop, we will help you to calculate, to create graphs, etc. Try to see that the data are entered correctly and properly saved).

Activities

Activity 1 Select the programme *MS Excel*, - Find your folder and file - Open workbook and observe work sheets

Activity 2 Enter the following data in your work sheet: and save in your File.

12	12	14	15	08
11	13	12	14	10
14	11	12	15	07
13	12	13	14	09

Activity 3 Change the following data in your work sheet: and save in your File

12	18	14	15	09
11	13	12	14	10
14	11	13	15	07
13	11	13	14	09

Activity 4 Calculate the sum of each column and row, and also check whether the sum of Column and sum of row are equal.

POINTS TO PONDER

CLASSROOM ACTION RESEARCH

What Do Teacher Researchers Do?

Teacher researchers...

1. develop research questions based on their own curiosity about teaching and learning in their classrooms.

2. examine their underlying assumptions about teaching and learning.

3. systematically collect data from and with their students.

4. share and discuss their data and research methodology with fellow teacher researchers.

5. analyze and interpret their data with the support of their colleagues.

6. write about their research.

7. share their findings with students, colleagues, and members of the educational community.

8. discuss with colleagues the relationships among practice, theory, and research.

9. assume responsibility for their own professional growth.

CLASSROOM ACTION RESEARCH

What Are Some Effects of Teacher Research Projects?

Some effects are...

1. increased sharing and collaboration across departments, disciplines, and grade levels.

2. increased dialogue about instructional issues and student learning.

3. enhanced communication between teachers and students.

4. improved performance of students.

5. revision of practice based on new knowledge about teaching and learning.

6. teacher-designed and initiated staff development.

7. development of priorities for school wide planning and assessment efforts,

8. contributions to the profession's body of knowledge about teaching and learning.

COMPARISON OF FUNDAMENTAL RESEARCH AND ACTION RESEARCH

Aspects	Fundamental research	Action research
Objectives	Its purpose is to develop and test educational theories and to obtain universally applicable principles.	Knowledge obtained is intended to be applied in local setting. It also provides a sort of in-service training to participating field workers.
Expertise	Expert training is needed in measurement, research methodology and statistics	Only an ordinary training may suffice. Action Research can be done by an average teacher under the guidance of a consultant
Locating the Research problem	A wide range of methods and a vast process is used to locate the research problem	It deals with problems, which hinder classroom teaching-learning process. Thus the participating teachers can easily identify them.
Involvement	The research worker may not be personally involved in the problem he selects for research	The teacher is invarjably involved in the research problem
Hypotheses	Highly specific and well-stated hypotheses are formulated and adopted.	Action hypothesis is only the specific statement of a problem having 'Goal' and 'action' parts
Review of literature	It necessitates an exhaustive and thorough review of literature in order to have a complete understanding of the accumulated knowledge in the area.	It demands simply a general understanding of the area. There is no need for a thorough or intensive review.
Sampling	A random or otherwise unbiased sample of the population is studied.	Pupils studying in the particular class taught by the teacher are used as subjects.
Design	Careful attention is paid to maintain comparable conditions thus reducing errors and bias.	Procedures are planned only in general terms.
Analysis of data	Complex analysis is often called for.	Simple procedures for analysis are considered sufficient.
Statistical treatment	There is stress on befitting statistical treatment of data for the sake of objectivity.	Not much stress on objectivity and statistical treatment. Even the subjective opinion of participating teachers is given weightage.
Application of results	The research findings usually remain confined to research reports and publications. There is no coordination between the research workers and field workers to ensure utilization of valuable conclusions.	Findings are applied straightaway to the classes of participating teachers and lead to far-reaching improvements in the teaching learning process.

EPISC:

ESTIMATE	PLAN	IDENTIFY	SUPERVISE	CLARIFY DOUBTS (if any)

PROFOMA FOR FINANCIAL ESTIMATES

Financial Estimates

1.	Books, Journals and other reference materials	:	Rs.....
2.	Purchase of material for teaching aids, Improvised apparatus, etc. (No item of permanent nature)	:	Rs.....
3.	Duplicating, Printing, Typing, etc	:	Rs.....
4.	TA and DA for visits	:	Rs.....
5.	Stationery, correspondence and other contingencies	:	Rs.....
6.	Miscellaneous(if any)	:	Rs.....
	Total	:	Rs.....

Signature of the Head master

Signature of the Action Research incharge

PRACTITIONERS' QUEST

ABRIDGED VERSION

DEVELOPING "RECODING" AND "TRANSCODING" WRITING SKILLS AMONG STUDENTS OF CLASS V

Action Researcher: S.K.Shamala

Area: Writing skills in English - class V

Look:

Concern: The learners of class V find it difficult to recode or transcode written expressions. They are capable of writing question and answers in a mechanical way.

Research Questions:

- Can writing be made interesting and challenging?
- Can visual and verbal stimuli help the learners to write better?
- Can an alternate strategy/activity achieve the desired objective?

Plan:

Collaborators: Colleague teaching the other section

Evolution of the Plan:

- Library work of four studies
- Observation of learners who enjoyed visual and performing art activities
- Discussion with the colleague

Proposed change in practice: Usage of group work instead of individual work
Usage of selected art education activities to introduce written work

Act:

Change in action: Pre-test to measure recoding and transcoding ability
Visual art education activities to recode visual to verbal activity
Dramatization activity to transcode verbal stimulus to verbal expression

Observe:

Evidence for change: Students were active, interactive and co-operative in the group work - developed the skills of composing a written work, drafting and editing with confidence.

Reflect:

Findings: Learners enjoyed the art education activities
Group dynamics nurtured individual talents
Learners developed transcoding and recoding writing skill

Validation: The colleague used the same techniques to teach the writing skills to the other section.

Re-plan:

Collaborators: Colleagues who teach VI & VII

Proposal: to select, plan and adapt appropriate art education activities to suit writing activities of other lessons.

EFFECTIVENESS OF LEARNING BASE 2 SYSTEM BY SIMULATION METHOD

Action Researcher H.S.Sastry

Area Mathematics

LOOK

Concern The students of class VII did not understand how and why a base 2 number becomes equivalent to a specific base 10 number.

Research Questions

- Is there a simpler and easier way of converting base 10 number to base 2 number other than the successive quotient method?
- Does simulation of "shop model" help learners write base 2 as well as any base system including base 10 with ease and understanding?
- Does simulation reinforce successive division of the given number by 2 and the "why and how" of the process?
- Can "simulation" help learners check the answer got each time and develop confidence in them?

PLAN

Evolution of the plan By intuition

Proposed change in practice Shop simulation method would help the students understand the principle of conversion of base 2 number into base 10 number and vice versa.

ACT & OBSERVE

Change in action The students were divided into small groups and role-played a shop scene. The bill for the number of commodities was written by marking 1 or 0 under the place values of the binary system.

Evidence for change Children were enthusiastic about the activity.
They were administered a written test.

REFLECT

Findings There was a marked improvement in the performance of the students in solving problems involving base 2 numbers.
After sometime children were able to interchange base 2 and base 10 numbers without the simulation activity.

Validation Children wanted to try more difficult problems and also problems involving base 5 numbers.
This activity was reported in workshops attended by teachers from different schools.

THE EFFECTIVENESS OF USING GANITHA BHASKARI IN TEACHING ADDITION AT THE PRIMARY LEVEL - A STUDY.

Action Researcher: E. Roopa Rao

Area: Mathematics

Look:

Concern: Poor achievement in mathematics at the higher primary level is due to lack of mastery of basic concepts i.e. characteristics of Hindu Arabic System of Numeration (HASN).

Research Questions:

- How can I make the learning of the characteristics of HASN enduring?
- How can I eliminate the defects of traditional methods of teaching mathematics, which hinder the learning of addition?

Plan:

Evolution of the Plan: professional reading of materials on speed mathematics and books on abacus. - visits to primary schools to study the method and devices used while teaching HASN and process of addition. - discussion with user of abacus.

Proposed change in practice: using Ganitha Bhaskari will not only improve the concepts of HASN but also clarify the process of addition.

Act:

Change in action: first, familiarized the group with Ganitha Bhaskari and gave them practice in representing numbers on that and reading numbers so represented. Demonstrated and discussed the characteristics of HASN on it. Then taught on it addition of numbers without carry over and with carry over. Gave practice through work sheets.

Observe:

Evidence for change: students' performance in post-test.
Excitement while using the instrument.
Discussion with parents, - the behaviour of students while working on it.

Reflect:

Findings: using Ganitha Bhaskari has helped in giving better understanding of HASN and also speeded the process of addition.

Validation: Statistical analyses of test scores. - discussion of qualitative data with students and parents. - Reporting.

ACTIVITY BASED TEACHING - LEARNING STRATEGIES (ABTS) IN LARGE -SIZED CLASS AT PRIMARY STAGE - A STUDY

Action Researcher: Mrs.M.Sharada

Area: Environmental Studies-II

Look:

Concern: The general complaint from primary school teachers is that ABTS are not suitable for large sized classes.

Research Questions: How can I implement ABTS in large sized classes?
How effective will ABTS be in large sized classes?

Plan:

Evolution of the Plan: Discussions with the teachers of different schools; - Professional reading; - Experiences gained at the previous workshops and training camps; - Success with ABTS in small sized classes.

Proposed change in practice: By introducing a variety of learning materials and a number of individual and group activities/strategies, learning in large sized classes can be maximized.

Act:

Change in action: The selected competencies in EVS - II (hard spots) of class IV were converted into teaching points and for each teaching point different ABTS were planned.
Teaching the concepts was supplemented with a number of learning materials.
The students were allowed to carry out the activity individually and in convenient groups; inside and outside the classroom.
Role-play, dramatization, demonstration, project, peer group learning, conversation, experimentation and quizzing were some of the strategies implemented.

Observe:

Evidence for change: I observed the participation and contribution of each student; questioned them orally and administered a written test.
The students were very curious about the materials brought to the class and were visibly enthusiastic at the beginning of every EVS - II class
Non-masters freely discussed in groups and accepted peer correction.

Reflect:

Findings: From the written test, 83% of the students were found to have mastered the competencies.
All the students participated in all the activities.
Students were engaged in the activities even in the absence of the teacher.
ABTS created confidence even among the non-masters.

Validation: Students enjoyed doing the activities. - The colleague remarked that after this action research, the students had become more attentive, communicative and interactive in her class too. - This research was reported at the national and international levels.

TOWARDS A LEGIBLE HANDWRITING

Action Researcher:	Triveni.U.
Area:	Writing skills in English
Look:	
Concern:	Most of the students are not able to read what they themselves have written due to illegible handwriting.
Research Questions:	How could the students be helped in acquiring a legible handwriting without feeling the drudgery of it?
Plan:	
Collaborators	Colleagues and teachers of other schools.
Evolution of the Plan:	Previous practices did not yield the desired result in improving the handwriting. Exposure to a professional handwriting development programme. Professional reading of 'Italic writing' by Horsburgh.
Proposed change in practice:	Convincing the students of the importance of a legible handwriting, demonstration of the scientific formation of the letters of the alphabet and practice of the same would help the students improve their handwriting.
Act:	
Change in action:	The students were briefed about the curves and strokes that formed the basic shapes of the letters. The teacher demonstrated the formation of the letters on the blackboard highlighting the angles and the directions in which the strokes and curves are formed. The students were asked to practice in a four-line notebook to begin with and then take to a single-line notebook.
Observe:	
Evidence for change:	The students' handwriting was observed over a period of two months. Notebooks of subjects other than English were also observed.
Reflect:	
Findings:	Many students had evolved their own legible style. Many wrote legibly only in English notebooks and not in Science and Social Studies notebooks. A few slow learners had not picked up the correct formation of some letters like a, m, n, u, v, w and s.
Validation:	Students wrote willingly and did not consider copy writing a burden. There was a marked improvement in the handwriting of most students.
Replan:	This project can be tried right from the first year of learning English. There is a need for collective consciousness among colleagues regarding the emphasis on legible handwriting.

CREATING SHORT-TERM LEARNING OPPORTUNITIES

Action Researcher: Heather Alger

Area: Classroom discipline

Look:

Concern: In every period first 7-8 minutes was taken away from the lesson because of the disruptive behaviour of the students of Grade - V.

Research Questions:

1. When is the disruptive behaviour at its greatest?
2. What did the disruptive behaviour signal?
3. How can I reduce the disruptive behaviour of students?

Plan:

Collaborators: Associate Teachers

Evolution of the Plan: Discussions with the associates and own observations revealed;
The disruptive behaviour is at its greatest during change of periods;

- Students wanted a break between long lessons;
- Students were interested in drawing with pencil and listening to stories.

Proposed change in practice: Introducing 5-minute short-term learning opportunities once a day may reduce the disruptive behaviour.

Act:

Change in action: One day the teacher drew on the blackboard, after giving necessary instructions and providing each student with a pad and a pencil. The students drew in their pads. The next day the students listened to a 5-minute mystery on an audiocassette. They were asked to solve the mystery by asking the teacher only Yes/ No questions.

Observe:

Evidence for change: Transition to the next lesson/activity was smoother. Children participated more during the following lesson with fewer interruptions.
Remarks by the students

Reflect:

Findings: A variety of short-term learning opportunities geared to the students interest can overcome disruptive behaviour that can be a result of students wanting a break in between lengthier lessons.

Validation: Students and other teachers experienced a positive change.
Reporting and wider dissemination.

Re-plan:

Collaborators: Associate teachers

Proposal: The associate would also try it next term.

PROVIDING OPPORTUNITIES FOR INTERACTIVE LEARNING THROUGH DRAMA, LANGUAGE AND MATHEMATICS

Action Researcher: Fatima Santos

Area: Learning opportunities

Look:

Concern: I was not giving my Grade IV students sufficient opportunities for productive interaction with their peers.

Research Questions:

How can I promote student interaction in the classroom?

Plan:

Collaborators: Associate Teachers

Evolution of the Plan: Discussions with the associates. - Professional reading:

- Kohn's book " Beyond discipline: From compliance to community ".
- Primary Programme Foundation Document of British Columbia.
- Ontario Mathematics Curriculum, 1997.

Proposed change in practice:
Introducing drama across the curriculum
Relating Mathematics to real life
Allowing the students to lead the teacher in an activity
Integrating Mathematics and Literature

Act:

Change in action:
For a lesson on friendship students in groups of 3/4, prepared and played skits.
For a cross curriculum unit on Whales (with video series) - students in group measured various real objects and then drew a full size whale on the school ground.
For graphing the different sizes of whales, the students suggested the steps to the teacher.
When I read " Grand father Tang's story " by Ann Tompert, the students changed the tangrams to correspond to the characters

Observe:

Evidence for change:
Positive feedback from students; - Excitement and remarks of the students; - Expressions of the students; - dedication to the task.
When in doubt students asked each other and clarified each other.

Reflect:

Findings:
Providing students with increased opportunities for interactive, integrated learning increased the quality of learning; - Students were motivated when they were given a greater responsibility for their learning; - Since the materials were interesting to the students, they put in a lot of effort and exhibited total concentration; the discipline problem decreased.

Validation:
Feedback from the students and associates;
Teacher's own observation
Reporting.

ACTION RESEARCH REPORTS

ACTION RESEARCH

DEVELOPING ' RECODING' AND ' TRANSCODING' WRITING SKILLS AMONG CLASS V LEARNERS.

S.K.Shamala

Abstract: The ultimate aim of language learning is to acquire competence in oral as well as written expression. Of the four basic skills of language learning,' writing' is the most complicated one. Effective writing depends on learner's ability to link and develop information, ideas or arguments. In this Study the investigator introduced selected Art Education activities to develop the writing skills. The pre-test and post-test scores of each learner showed better scoring pattern. Group work and Art Education had a positive effect on their writing ability.

Key words: Recode - Translating the visual cues into verbal presentation and vice-versa
Transcode - Transforming one type of verbal presentation into another.

Introduction:

A good deal of writing work in English classrooms is undertaken to consolidate the usage of new structures, vocabulary or the content of the lesson. These 'sentence level reinforcement exercises' (Ronwhite,1980) do not ensure writing competency. Successful writing depends on more than the ability to produce clear and correct sentences. It should be the ability to link and develop information, ideas or arguments for a particular reader or a group of readers.

LOOK

The Concern

The learners of class V are conversant with the writing skills to answer the comprehension questions. But they are unable to use this skill to communicate in the form of a message, a letter or a dialogue. They are unable to write a descriptive paragraph, trans-code a story into a dialogue. They do not possess the *recoding* (visual to verbal) and *trans-coding* (verbal to verbal) abilities.

Research Questions:

1. Can writing be made interesting and challenging?
2. Can visual and verbal stimuli help the learners to write better?
3. Can an alternate strategy/activity achieve the desired objective?

PLAN

How can the writing activity be made more interesting and challenging? The teacher studied 4 Studies* (published in journals) that helped her to formulate some hypotheses. The teacher observed the learners being joyful and active while doing

Visual and performing Art Education activities. After discussing with colleagues she planned to introduce selected art education activities that foster joyful learning and child centered techniques. Learners love to draw and paint, make models, prepare charts and collages. They also enjoy role-playing, simulation and pantomime as it comes to them naturally. The teacher planned to use group work instead of individual work. The teacher planned to play the role of a facilitator, observer, manager, consultant and even a co-communicator. The teacher identified the specific elements of knowledge or skills that could be used to practise communication ability. She introduced them through pre-communication activities.

ACT

The learners of class V Section-B were given a pre-test to evaluate comprehension, recoding and transcoding abilities in writing.

The teacher now introduced drawing and painting, model making, chart preparation and collage making to four groups of the class to teach description of a visual clue. Each group took up one activity to describe the major character of the story and a scene. Group-A drew and painted the character, group B made models of the scene; group C made charts on the activities in that scene. Group D made a collage using locally available materials. This enabled them to recode to visual from verbal written expression.

The teacher then asked the groups to draft a dialogue and enact the scene. The groups selected the cast, planned the dialogue, and rehearsed the scenes for 3 to 4 times. Each group made its presentation. This enabled them to transcode the story content into a dialogue. The exciting and interesting art education activities lend themselves into child centered joyful learning activities to reinforce writing skills.

A post-test comprising of comprehension, recoding and transcoding questions were given to the learners.

OBSERVE

The learners enjoyed the new experiences provided. They were active, inter-active and cooperative in the group work. The slow learners who could paint, draw or make models developed "confidence" and "self esteem". The group-mates developed healthy respect towards others' talents. The values of cooperation, friendship and identification with the group were developed. The writing work that was till now monotonous, unimaginative and mechanical was made interesting to the learners. They developed the skill of composing a written work, drafting it and editing it with confidence.

Findings

The pre-test and post-test scores of each learner showed better scoring pattern. Group work and art education activities had a positive effect on their writing ability. The learner developed the skills of recoding and transcoding. The writing skill, which was always reduced to just reproducing the textbook content, became a tool for the learners to communicate.

Validation

After observing the positive effects, the colleague decided to use the same techniques while teaching the writing skills to the other section in the next year.

REFLECT

Each lesson has to be treated as an entity to be analyzed, and suitable Art Education activities have to be selected accordingly. All Art Education activities may not suit the needs of all the lessons. So, the cycle of Plan - Act - Observe - Re-plan has to be kept in motion

Annotated Bibliography

Tricia Head, Writing London: Oxford University Press: (1988) [Quoted Barton Pauline - "*Developing language skills*" courtesy "Perspectives" - writing group compositions and individual reports can be based on class activities - a mock interview, a speech by a fellow student, a skit staged by the group. These dramatic activities enhance the writing ability].

Muzumdar, Braja Gopal - " *Developing writing skills through cartoons* " - (Primary Teacher , New Delhi: NCERT, July 1981) His experiment showed that abstract captions do not develop interest or curiosity, but a cartoon or a visual stimulus can do so resulting in written expressions.

Ahuja Abha and Anitha Guptha "*Encouraging Creativity in Children*" (Primary Teacher New Delhi: NCERT, -1991) the experiences of building blocks, drawing and painting, clay and plaster of Paris models; creative dramatics like movement, pantomime, simulation and role play help in language learning process. Doing something helps in describing that orally or in writing.

Lal Harmesh - "*Educational Puppets for Children*" (Primary Teacher, New Delhi: NCERT, - Jan 1989) the simple but effective rod puppets, handy glove puppets help in training the speaking and writing skills.

EFFECTIVENESS OF LEARNING BASE 2 SYSTEM BY SIMULATION METHOD

Mr.H.S.Sastry Demonstration School, Regional Institute of Education, Mysore

Abstract

While teaching base 2 system to learners, it was observed that learners have difficulties in learning it through expanded notation or by successive quotient method as well through writing work only. The learner took a lot of time in understanding the process. It was observed that the learners were doing it more mechanically. Re-teaching or drill had to be provided. It was felt that it was rather abstract for the learners at that level. A comparison revealed that performance of learners taught through simulation was better than that of learners taught through expanded notation/successive quotient method.

Introduction

Learners are quick in picking up the "how" of any mathematical process rather than the "why" of it. Given a typical example (say, a problem of converting base 10 number to base 2 number), a learner can easily repeat it for similar types of problems. It is done rather mechanically. An understanding of the need to do it or "why" the process leads to realising the goal.

Look

Concern:

Learners of the class VII were thoroughly familiar with dividing a given base 10 number by 2 repeatedly and obtained successive quotients. The remainder got in each step was arranged in a particular method to obtain the base 2 number. But the learner was not clear "how and why" the base 2 number got is equivalent to the base 10 number.

Research Questions:

- Is there a simple and easy way of converting base 10 number to base 2 number?
- Does simulation of "shop model" help learners write base 2 as well as any base system including base 10 with ease and understanding?
- Does simulation reinforce successive division of the given number by 2 and "the why and the how" of the process?

- Can "simulation" help learners check the answer got each time and develop confidence in them?

Plan

Children like to do group work and imitate daily life situations. Children were randomly divided into groups of five. Each child had a role to play in the "shop simulation" like Cashier, Helper, Customer, Bill writer and Owner. The teacher would be an observer, guide and a facilitator. Each group would simulate the "shop -scene" of buying, billing, collecting cash, etc.

Act and Observe

Each group had different sets of commodities in bundles of 1, 2, 4, 8, 16 and so on, i.e., the place values in the binary system. A customer (learner) would approach a group and ask for a certain number of commodities (of the same type) from the owner as a base 10 number. The helper would pick the required number of commodities, keeping the following principles in mind:

- The sum of the items of the selected bundles should be equal to the required base 10 number.
- Not more than one of each type of bundle should be picked up.
- No bundle should be split to take out individual items from it.

For instance, to arrive at number 37, the bundles to be picked up would be 32+4+1. He would hand over the selected bundles to the other helper who would cross check it. The cashier would write down 1 under the place value of each of the types of bundles selected and 0 under the place value of each of those not selected. Thus, 37 would be

32	16	8	4	2	1
1	0	0	1	0	1

represented as shown in the diagram above. This bill is handed over to owner who would cross check the contents and the writing. This would be passed on to the

customer who would confirm the deal and collect the change after paying cash in base 10. The simulation is repeated by rotation of the roles within each group.

A written test was given after all the learners had an opportunity to play the different roles in order to assess their performance in converting base 10 number to a base 2 number.

Observe

The learners were active while being cooperative in solving each other's difficulty during simulation. Even slow learners were quick to pick up the process as well as to write the conversion. Learning of mathematics was felt an enjoyable experience and not boring or mechanical. Learners asked for more difficult problems. They wanted to try out if this works for base 5 also. Some groups could convert base 10 to base 2 numbers without simulation after this experience. Children were excited and in the end gained confidence in doing problems by expanded notation as well as by successive quotient method.

Reflect

Findings

Performance of learners was better after "simulation" in most of the cases. It improved their ability to solve such problems and with confidence. Group work helped to satiate their queries of "how" and "why" also.

Validation

This was tried out by the researcher in other sections to find its suitability and also to improve upon it. Each time, the researcher was convinced that "simulation"' method does produce positive effect on learning. This experience was shared with and disseminated to teachers from other schools in relevant workshops who in turn took initiative, tried and concurred with the researcher.

ACTION RESEARCH REPORT

"THE EFFECTIVENESS OF USING GANITHA BHASKARI IN TEACHING ADDITION AT THE PRIMARY LEVEL – A STUDY.

E.Roopa Rao, M.A., M.Ed., PGDTE

Abstract: While observing mathematics lessons of student-teachers the investigator had noticed that higher primary school students lacked understanding of characteristics of Hindu Arabic System of Numeration (HASN) and had poor mastery over fundamental processes. The HASN, which is introduced at the elementary level, is the base for later learning and mastery of mathematical concepts. She was curious to know whether by using Ganitha Bhaskari (an innovative recorder), concepts of HASN are developed and can it speed up process of Addition. This project was carried out on III standard students. The Control Group practiced addition by traditional method and the Experimental Group after learning addition on Ganitha Bhaskari, practiced on it. Quantitative and qualitative data revealed many interesting facts.

The Concern

The investigator being a teacher educator came across many higher primary school students who were very weak in mathematics. A further examination of their difficulties revealed that they were weak in basic concepts of mathematics, which they had learnt in their primary schools. This indicated that the teaching method and device used at the primary level had not helped in achieving mastery learning of basic concepts. "There is a need to device a more effective plan and a way of teaching, to ensure the acquisition of basic arithmetical skills and competencies of durable nature to such a level where they are enduring and sustainable and would not easily allow for lapse and degeneration into illiteracy" (NCERT, 1991). The investigator was curious to know how to achieve this. A systematic examination of primary school syllabus in mathematics indicated that, Hindu Arabic System of Numeration (HASN) was the core and heart of mathematics syllabus at this stage and its mastery was the required base to succeed in mathematics at higher primary school. Further, examination of traditional method of teaching mathematics at the early stages indicated that, the concept and use of carry over, and illogical way of handling number from left to right and some times from right to left make learning mathematics both laborious and confusing task. This made the investigator search for an alternate way to teach characteristics of HASN and fundamental processes of mathematics. After examining literature of teaching mathematics and speed mathematics, and after examining the various devices of teaching characteristics of

HASN and fundamental processes of mathematics, the investigator decided to try using **Ganitha Bhaskari** (an innovative recorder) for the purpose. She realised that through use of Ganitha Bhaskari, it became possible to:

- teach the characteristics of HASN more effectively;
- eliminate carry over from fundamental operations; and
- teach children handle numbers from left to right as done in mental mathematics while performing fundamental operations of +, -, x and ÷, and also higher operations.

The Research

The use of Ganitha Bhaskari for addition involved learning many operations before actual addition could be performed. That is, the Experimental Group (EG) had to learn to zero the instrument, represent a number on it keeping in view the *place value* and *face values* of the number, read a number represented on it, and also learn the complements of single digit numbers. Further, while adding on paper and pencil children were taught to proceed from right to left (i.e. from units place to higher place values) taking the carry over using fingers as crutch. However, on the Ganitha Bhaskari they had to learn to add from left to right (i.e, from higher place to units place) and use complements of numbers when confronted with carry over. So, the investigator was apprehensive whether children will be able to learn all this and then master addition. Though the purpose of this study was restricted to finding out, the effectiveness of teaching addition through the new technique using Ganitha Bhaskari, the investigator had to watch out whether "adding with complements" can be understood and effectively used by III standard children, whether performing addition from left to right would confuse children who have practiced and were still practicing adding from right to left, and whether children could give up the practice of using fingers as crutch. She also had to examine whether using Ganitha Bhaskari helped in clarifying the characteristics of HASN. The investigator formulated the following hypothesis:

"There is no significant difference in the accuracy in addition between children using Ganitha Bhaskari and children using Traditional Method." and decided to make qualitative observations for other aspects.

The Action:

Experimental Group (EG) and Control Group (CG) of 20 students each from III standard were formed. To the EG practice in addition was given through Ganitha Bhaskari, whereas for the CG practice in addition was given on paper using

Traditional Method. For both the groups, the investigator confirmed whether pupil had the concept of 'zero' and knew about 'place value' and 'face value' of a number. Whether they knew to break up numbers into their constituents like 4087 = 4000 + 000 + 80 + 7 and whether they knew to add without and with carry over and with the total not exceeding 9999. A pre-test was given to both the groups. The real action began at this stage.

First, the experimental group was familiarized with the instrument. This involved the following:

- description of Ganitha Bhaskari and functions of each part;
- representing numbers on Ganitha Bhaskari; and
- reading numbers represented on it.

While doing this all the characteristics of HASN were recalled and revised on the instrument. Once the group mastered this, it was taught addition through Ganitha Bhaskari. This was done in the following stages:

- addition of numbers without carry over;
- teaching on paper the concepts of complements of single digit number;
- using complements of numbers for adding 2 single digit numbers (this was done on a wooden frame) and its application on Ganitha Bhaskari;
- addition of numbers with carry over on Ganitha Bhaskari.

At each stage practice was given through work sheets in 40 minutes session every day for 5 weeks. The CG was given practice in addition on alternate days on paper through traditional method using same work sheets. A post-test was given to both the groups. The calculation of mean, standard deviation and 't' value made the investigator reject the hypothesis, leading to the conclusion that **Ganitha Bhaskari can be used effectively in teaching addition to III standard students.**

The Reaction:

This study helped in achieving the purpose stated earlier. It became more significant because the CG had to take the post-test for the task which they had learnt for 3 years, whereas the EG took the test for a task which they had learnt only for 5 weeks. The findings of this investigation showed that the use of Ganitha Bhaskari really helped children to get a better understanding of characteristics of HASN because children of the CG had to simply add the digits in each column

on Ganitha Bhaskari using the correct rod. This made children conscious of the 'face value' and 'place value' of digits and also the additive property of HASN. The concept of nothing (0) even at higher place values was brought home by keeping that rod empty.

Further, these children were performing addition without mental strain whereas children of the CG were busy counting on fingers and trying to keep the carry over in their mind (by actually banging on their head !) when the CG was working one could hear children verbalizing the process of addition (like chanting of hymns or mantra). They would also hold up their fingers to help themselves. Whereas, in the case of EG, except for the noise of clicking of beads, nothing was heard. Another proof that these children did not experience mental strain could be seen, when 100 problems were given to both the groups for practice before post-test was administered. Children from EG completed their work and told that they could complete it in one sitting on the same evening. Whereas, in the case of the CG, the work of many children was incomplete, and both children and parents complained regarding excess load of work given. A questionnaire sent to parents of EG to find out the students reaction to working on Ganitha Bhaskari, revealed that these children were taking a lot of interest in the project. Some parents asked the investigator, where to buy Ganitha Bhaskari. Parent of another child had to buy beads and make a Ganitha Bhaskari to satisfy her son. One grand parent reported that the child taught Ganitha Bhaskari to all the members of the family.

Further Action

- Separate studies can be conducted to find out the effectiveness of Ganitha Bhaskari in teaching subtraction, multiplication, etc.,
- Further study to find out whether Ganitha Bhaskari can be effectively introduced to children of classes lower than III standard.
- A developmental study to compare performance in fundamental operation of 2 equated groups, one taught on Ganitha Bhaskari and the other taught on traditional method can also be taken up.
- Effectiveness of Ganitha Bhaskari in teaching mathematical concepts to mentally retarded children, learning disabled children and blind children can also be undertaken.

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ACTIVITY BASED TEACHING - LEARNING STRATEGIES (ABTS) IN A LARGE - SIZED CLASS AT PRIMARY STAGE - A STUDY

M.Sharada, Demonstration School, Regional Institute of Education, Mysore

Introduction:

Large sized class situation is very common in our country either due to shortage of buildings or due to shortage of teachers or both. Large sized classes pose various problems in the classroom both for the practitioner and the learner. It is commonly agreed that any sort of innovative approach in classroom transactions is possible with a small sized class, but not with a large sized class. Child centered approach in teaching-learning process is considered highly impossible in such classes. In such a situation, it is a must for a teacher to think about alternate strategies to effect optimum learning. I thought that ABTS might be one such strategy, which would solve many of the teacher's problems in handling a large-sized class.

Look :

Concern:

The general complaint from primary school teachers is that they have not been supplied with learning materials and also not been trained for implementing ABTS in a large sized class. It was accepted from previous experience that ABTS are effective in small-sized class. But it is difficult to follow in a large-sized class.

Research Questions:

i. How can I implement ABTS in a large-sized class?
ii. How effective will ABTS be in large-sized class?

Plan:

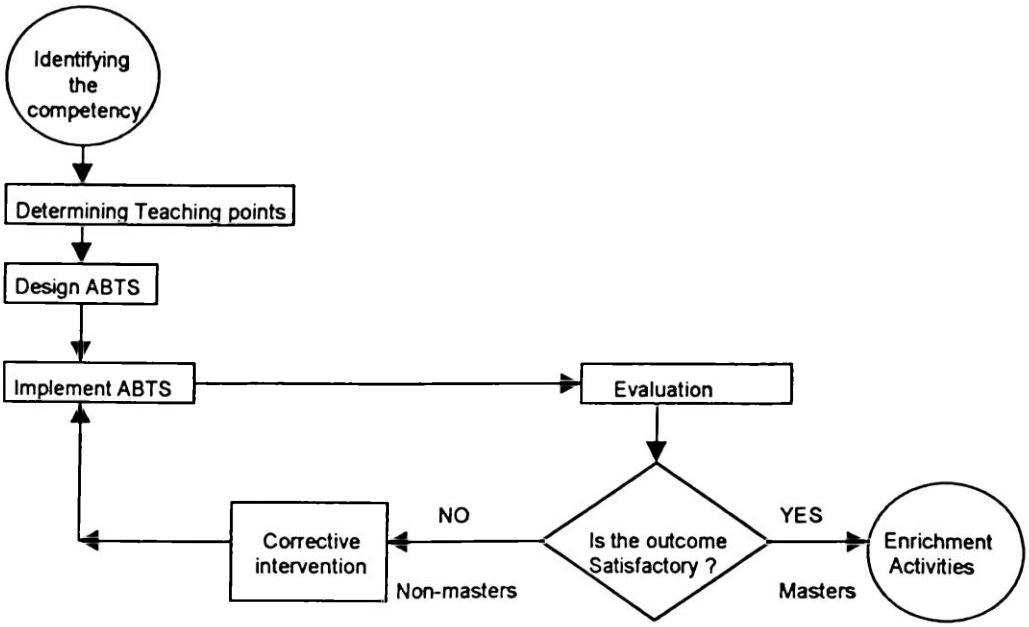
I, being a teacher in Demonstration school, RIE Mysore, had attended many in-service training programmes at different levels both as a participant and as a resource person. In all these programmes, teachers were found to be of the opinion that ABTS could be implemented effectively only in a small sized class but it was difficult to practice

the same in large-sized classes. From the previous year's experience, I found that ABTS are very effective in a small-sized class (35 students). However, a large class situation does not exist in Demonstration School. Hence, I did not have the experience of teaching in such a situation. These realities prompted me to accept the challenge and plan for ABTS and their implementation in a large-sized class.

Implementation:

During April -September 1997, I supplemented my teaching of EVS - II in class IV of 70 students with ABTS. The plan of action was as follows:

Schematic Representation of ABTS



A few specific competencies under the following topics were selected for implementing ABTS:

Topic: *Materials (matter and their properties)*
Competencies:

C1) Identifies common materials on the basis of some easily observable properties.
C2) Classifies given materials on the basis of colour, texture and hardness.
C3) Understands that matter exists in three states, i.e., solids, liquids and gases.
C4) Classifies common solids into breakable and not easily breakable ones.
C5) Classifies common solids as transparent and opaque materials.
C6) Classifies some common solids on the basis of solubility in water (soluble and insoluble)

Topic: *Important functions of human body*
Competencies:

C7) Recognises the parts of the digestive system, respiratory system and circulatory system.
C8) Classifies the parts into different systems of human body.
C9) Draws diagrams of different systems and labels its parts.
C10) Understands the important functions of human body

The selected competencies (hard spots) were converted into suitable teaching points. ABTS were designed for each teaching point. The required instructional materials and learning aids were prepared before hand. The students were allowed to do activities inside and outside the classroom; individually and in convenient groups. The ABTS implemented in this study are listed below:

Strategies:

S1) Observation	S2) Classification	S3) Role play
S4) Peer group learning/cooperative learning		S5) Discussion
S6) Demonstration	S7) Experimentation	
S8)Conversation/dialogue	S9) Project work/assignment	S10) Dramatization
S11) Self-learning	S12) Quiz	

The matrix, showing competencies and the relevant strategies followed in the study, is given below:

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
C1	*										*	*
C2	*	*		*	*				*		*	*
C3	*	*		*	*				*		*	*
C4	*	*		*	*	*					*	*
C5	*	*		*	*	*					*	*
C6	*	*		*	*	*	*	*	*		*	*
C7	*		*	*	*			*	*		*	*
C8		*		*	*			*			*	*
C9				*	*			*	*		*	*
C10			*	*	*			*	*	*	*	*

Evaluation:

The evaluation strategy used to measure learners' achievement included the teacher's observation record of their participation and contribution in various activities; oral question-answers and competency based written test. On the whole, they were identified as Masters and Non Masters. The children who contributed the maximum, participated and involved themselves actively in all the activities, did the assigned work in time, answered well the oral questions and scored 80% or more in the written test (open book tests which were competency based) were considered as Masters. The remaining students were considered Non Masters. The teacher provided the Non Masters with individual attention with the help of the Masters. With their previous knowledge of working with their peers, the non-masters were encouraged to conduct experiments, observe and record themselves. The teacher's trust and acceptance of these children enthused them to perform well. Success in doing one activity motivated them to do more activities. Since the activities were within the limits of the learners' abilities and because the teacher took utmost care to break the monotony of work, the activities were enjoyed by them and resulted in mastery learning.

Findings:

- ABTS helped in large sized class management.
- Proper pre planning was required to implement ABTS in a large sized class.
- Learning situations were managed with well-planned activities and by keeping enough materials needed to develop the required competencies.
- Learning strategies became successful since activities were drawn from or related to the child's experience/environment.
- The pupils enjoyed learning by doing.
- ABTS motivated children to concentrate on expected competencies and hence to achieve them at Mastery level.
- ABTS were very effective in a large sized class and helped the learner in concept attainment and ability development.
- ABTS created confidence about learning even among Non Masters.
- ABTS helped the children to engage themselves in activities even in the absence of the teachers.

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TOWARDS A LEGIBLE HANDWRITING

U.Triveni, Demonstration School, Regional Institute of Education, Mysore

Concern

Any effort, which has a sense of immediate utility, sells. It's here that a sense of meaning and purpose attached to copy-writing is welcome. If this doesn't happen, copy writing could intensify the aversion for writing. Thus we notice that most students find it not only difficult to write, but also are not able to read what they write. When they find themselves in situations wherein they have to fall back on their writing, as in the case of preparing for the exams, they feel defeated. A bad handwriting could cause miscommunication leading on to adverse consequences. Hence a strong urge to develop an efficient and learner friendly technique to cultivate a legible handwriting was felt.

Research Questions

- Why do students who have been writing for six years and more find it difficult to form the letters of the alphabet legibly?
- Why do they get anxious and mix small and capital letters indiscriminately while writing? Do they write fearing punishment?
- Why is there a poor sense of layout and punctuation in writing?
- Can they acquire a legible handwriting in about two months, which would solve the above problems and can the legible hand be sustained?

Evolution of the Plan

The practices followed in the academic years from 1987 to 1998 did not yield the desired result in improving the handwriting. To begin with the students were just asked to write a page a day. The teacher didn't monitor their writing but for merely acknowledging their writing a page. When this failed to reach out to the majority of the students who had a bad hand, the teacher demonstrated the legible formation of the letters of the alphabet and sentences on the blackboard. And she made the students copy it. This again didn't yield any positive result. The problem persisted. The teacher

held discussions on this issue with other teachers at school and outside school who had similar concerns.

It was at this juncture that the teacher got exposed to a professional handwriting development programme at English Language Teaching Centre for High Schools, Vasanthamahal, Mysore. This was an eye opener. A lot of insight into the manner of formation of the letters, way of monitoring and of providing feedback were acquired.

More or less at the same time the teacher also came across a book on 'Italic Writing' by Horsburgh. This helped the teacher acquire further information regarding the angles and directions in which the curves and shapes of the alphabet are formed, number of strokes in each letter, manner of evolving a joined hand, etc.

Plan of Action

i. A brief talk with examples and demonstrations to convince the learner about the need for a legible hand; impressing upon the students that a good handwriting is like a good habit of ours which occurs involuntarily, once mastered.

ii. Demonstration cum practice of the formation of the letters of the alphabet, words and sentences in italic style over a period of ten days: The small letters would be introduced first. On the first two days, in a period of forty minutes each, only four letters a period would be introduced. The practice by students would be individually monitored. On the eighth day formation of capital letters would be introduced. Capital letters would be introduced after small letters because they are not used as frequently as small letters. Their use is only for the purpose of punctuating, highlighting and emphasising. Words would be introduced on the ninth day. Sense of syllabification of words as the first step towards meaningful writing would be introduced here. To begin with students would write their own names followed by the names of people they are very fond of. At this stage the first two punctuation marks that is capital letters and full stop would be introduced along with the sense of layout. At the sentence stage, students would be taught to read, retain, recall and write in meaningful units. They would first practice reading aloud in meaningful units before copy writing. They would copy

sentences, which have all the letters of the alphabet so that there is simultaneous reinforcement of all the letters. A few such sentences are:

- A quick brown fox jumps over the lazy dog.
- The joggers are vexed by flocks of quizzical water nymphs.
- Pack my box with five dozen liquor jugs.
- The five boxing wizards jump quickly.

From here the extension of copy writing to the paragraph stage would be an easy take over. It is here that they would learn the use of various punctuation marks through worksheets. If need be, the teacher might use two more days for this purpose. On the days to follow, the first five minutes of the English class would be spent on monitoring the handwriting of students and providing feedback individually.

iii. Using the acquired skill in any situation, which involves writing.

iv. Soliciting the cooperation of colleagues for passive monitoring of this programme and giving feedback to the English teacher.

Implementation

The plan of action was meticulously carried out. There was a learner friendly attitude. At the preliminary stage each student was expected to write only when he / she was in a mood to write. At the paragraph stage, half a page was expected daily. There was no copy writing during holidays and the test week or when the student didn't come to school. The learners were

- Convinced about the quality of handwriting rather than the quantity of writing.
- Briefed about the optimum speed of reading required (in the case of slow, average and fast readers separately) to write in meaningful units.
- Told that the time thus saved could be used to concentrate on legibility in writing.
- Made to feel that each attempt at writing - may be a letter or a word or a sentence - is a better formation than the former and later a stabilised formation which is their best.
- Instructed about the right posture of sitting and settling down to write.

- Asked to practice in four-line notebook to begin with and later take to single-line notebook.
- Briefed about the oval shaped curves and the strokes with rightward slants that form the basic shapes of the alphabet.
- Trained intensively to read, retain and recall in meaningful units at the sentence stage (keeping in mind the person who reads the slowest and the person who reads the fastest).
- Given positive feedback.
- Given incentive of exemption from copy writing when the transfer of the acquired handwriting had taken place.

Evaluation

Two months after the commencement of this action research, the handwriting of the students in their English notebooks as well as their notebooks of other subjects was evaluated. It was found that most students of class VI failed to write in the acquired italic style in the notebooks of other subjects; but did so in the English notebooks. Only ten to fifteen out of the fifty-five students were found writing in a legible hand in their Science and Social Studies notebooks. A few slow learners were yet to pick up the correct formation of some letters like a, m, n, u, v, w and s. Forty-four out of the fifty-five students of class VIII had acquired a legible handwriting, but were not able to maintain it when they had to write very fast.

Reflections

Copy writing ceased to be a bother or a burden to the students. They started writing willingly. Many had evolved their own legible style. Anyhow two months seems to be too short a period to expect a tangible result in class VI and in the case of slow learners in class VIII. The expected transfer of learning perhaps needs a greater degree of maturity as far as class VI is concerned. There is a tendency to revert to their old illegible style. They seem to understand, but are not able to change their handwriting in other books. A need to orient teachers and parents (in case of their involvement) in this regard was felt. Picking up a good handwriting could have been more efficient if there was collective monitoring from the teachers' side like a compliment when an

- Towards legible Hand Writing -

Slow learner ① * See change in "f"	Day 9 30 55	nah jack ncam fan nop So, he was in need of a large in the forest near by
Slow learner ② *See - mixing capitals - proper alignment - confidence	9 30 55	RadhaKRIshs Saladin the create found on They quarrel with.
Averager * - Confidence - layout - evolving the right form	9 30 55	mukha Santosh Likith marbles." What is the The old woman narrated the
Above Averager *See - Sense of Syllabification - Layout - Organised (Cohesive writing)	9 30 55	syid hara our small fan I am studiying in sixl more tolevence and gentle- ness. He pushed away the
Academic Year: 1998.		Signature: (U. Triveni)

improvement was observed and indirect insistence on a legible handwriting and feedback to the English teacher.

Analysing and reflecting on the results of this action research, the teacher and one of her colleagues have started wondering whether copy writing could be a forerunner to basic silent reading comprehension. A new line of action research may have to be taken up to verify this assumption.

Flexibility with reference to the style of handwriting could be accommodated as long as it is not at the cost of legibility. This programme could be taken up from the first year of learning English itself. It has to be a continuous endeavour, which lasts till a legible handwriting becomes a part of the character. Routine feedback goes a long way. Patience pays!

ACTION RESEARCH REPORTS

CREATING SHORT-TERM LEARNING OPPORTUNITIES

An Action Research Report

Heather Alger, 1998

It is my belief that a variety of interesting and well-planned learning opportunities can often overcome many classroom challenges.

Introduction

In November of 1997 I began an exciting and rewarding two-month placement in a grade five classroom at an inner-city public school. In this classroom there were many challenges to be faced everyday by all individuals - one of the greatest challenges to be overcome was the disruptive behaviour that occurred in the classroom. The disruptive behaviour ranged from unnecessary talking and inappropriate language to physical fighting involving both genders. This behaviour affected many areas of the classroom. It affected the quality of the learning environment and the quantity of teaching and working time. Through my observations I noticed that disruptive behaviour tended to be at its greatest when the class was wrapping up a 35-minute lesson or activity and preparing to start the next 35-minute lesson or activity. This behaviour and the subsequent discipline took 7-10 minutes away from the lesson that had been planned. As I watched this unfold day after day I decided that something needed to be done.

The Process of Making a Positive Difference

To make a positive difference in this classroom I felt that there needed to be a change to the routine. I viewed the student's behaviour as a signal - a signal that they were not satisfied with the routine of the classroom. The students wanted to have a break between long lessons and since there wasn't a scheduled one they created their own 7-10 minute break through their behaviour. If they were always going to attempt to create this "break" then perhaps I should provide a structured break for them. A structured break would allow them to shift their focus from a long lesson to a brief activity and in the process they would stay focused on learning.

I knew that my Associate was very frustrated with the difficulty faced switching between lesson everyday so I did not hesitate to bring my idea to her. I presented my Associate with the idea of creating 5-minute short-term learning opportunities between lessons once a day. She received the idea with great enthusiasm and told me to go ahead with planning a series of short-term learning opportunities.

The first step in creating short-term learning opportunities that will be successful in a classroom is to carefully observe the class and pick up on their areas of interest that you as a teacher can help develop. There were two significant areas of interest that my students had. Many of my students loved to draw with pencil. Some would start drawing the moment they came in from outside and others attempted to draw as the class was being guided through a lesson. The students also enjoyed listening to stories being told by audiocassette. From these observations I decided upon and developed my series of short-term learning opportunities. The first set of opportunities I created were focused upon developing the children's drawing ability and the second set of opportunities were based on 5 minute mysteries which would develop the children's listening and questioning skills. I brought these ideas to my Associate and she was eager to try them as soon as I was ready.

The second step was for me to fully develop my ideas. I turned to an excellent drawing guide, The Draw Squad by Mark Kistler, to develop my drawing lessons. This book is "draw-proof" for all those teachers who feel that they cannot assist their students in becoming better artists The book takes individuals step-by-step through how to draw fun cartoon characters and scenes and teaches important concepts and skills pertinent to drawing. Each mini-lesson from his book can be covered in less than 10 minutes. For 5- minute mysteries I turned to the five-minute Mysteries Sleuth Book and Audiocassette by Ken Weber. This had a variety of mysteries all on audiocassette for the students to listen to and a mystery and answer book, which I could follow along with.

The third step was to introduce the idea to the class. I introduced the idea prior to our morning math class. I informed the class that when math time was finished we would have a short drawing lesson. I also informed them that we had ten minutes for the lesson so it was important that everyone prepare for the activity quickly when they were asked to do so. At the end of math class I explained that each student would have their own pad of paper to draw on and that they were responsible for that pad. A student assisted me in passing around these pads to the class. As soon as each student had a pad I introduced our brief lesson. I informed the students about what we were going to draw and what skills we would be practicing and developing. I drew on the chalkboard so each individual in the class could follow along and I provided a magnified photocopy of the steps for the visually impaired student in our class.

The following day I introduced five-minute mysteries to the class. I explained that they would be listening to a five-minute mystery story that was on an audiocassette. At the end of the story they would be asked to solve the mystery and to solve the mystery they would ask me questions that I could answer with a yes or a no. Once they had made ten guesses I would give them a clue; after another ten guesses I would provide them with a second clue. If they did not solve the mystery in the time required they would decide as a class if they wanted me to tell them the answer or if they would like to have until the end of the day to think about it. If they choose to wait until the end of the day they were only allowed to ask additional questions outside of class time. The students understood and followed the conditions with no problems.

The Results

I noticed a change in the students' behaviour immediately. There was noticeably less discipline required during the lessons both before and following the short-term learning opportunity. Most importantly I observed:

1. Each student in the class promptly cleared his desk and prepared for the following activity with a minimal amount of acceptable noise.

2. The students were being given an opportunity to develop a skill that they had a personal interest in as well as develop skills in listening and questioning. My acknowledgment of and respect for their interests gave them a greater respect for me as a teacher.

3. The students' interest in the short-term learning opportunity kept their focus on learning and having fun. The transition to the next lesson or activity was much smoother. The children worked better and participated more during the following lesson with fewer interruptions from disruptive behaviour.

In addition to these observations there are remarks that students made to me. The students felt that I displayed a genuine concern for them by incorporating fun learning opportunities that were related to their interests into the day. They also said that these short-term learning opportunities were good because they were not being assessed on them so they were not anxious about their performance.

Conclusion

It is known that an interesting, well-planned lesson can often overcome many classroom challenges. At the same time incorporating a variety of short-term learning opportunities geared to the students interests can overcome disruptive behaviour that can be a result of students wanting a break in-between lengthier lessons.This change in the classroom routine was a positive experience for all the students and the teachers in the classroom. My associate looks forward to continuing these activities next term.

ACTION RESEARCH REPORTS

Providing Opportunities for Interactive Learning through Drama, Language, and Mathematics

Action Research Project

Fatima Santos, 1997

Introduction The central concern in my practice was that I was not giving my grade 4 students sufficient opportunities for productive interaction with their peers. The first few lessons I taught were teacher-centered and consisted of the children working individually at their desks. These lessons were solid in the sense that I integrated audio and visual stimuli to teach my lessons and then asked students to perform a task, which would demonstrate their understanding. Most of the students responded well to the lessons. I recognized however that the learning would be more dynamic and successful if students were given greater responsibility in the learning process and interacted more with their peers. This type of interactive learning and exploration can lead to a far greater understanding of the concepts than a totally teacher-centered lesson ever could.

The Process My associate was equally interested in having the students interact more with each other and was very open to my suggestions. With a class that had rarely been asked to work in groups we decided to proceed slowly.

Professional Reading As I searched for methods to increase student interaction within the classroom, I was influenced by Kohn's book "Beyond Discipline: From Compliance to Community". He reiterated my concern that student interaction and ownership should be, but is often not, promoted in the classroom. He stressed that our main objective in the classroom as teachers should be to

increase depth of understanding and motivation. These goals are not effectively accomplished by maximizing silent individual work. I decided to provide students with increased opportunities for group work and problem solving. My primary role would be one of facilitator, not enforcer.

I also examined the "Primary Program Foundation Document" published by the province of British Columbia which outlined the many features and strengths of the various curriculum areas ranging from mathematics to the fine arts. Among those described in the document, drama was characterized as both a process and a learning medium which "releases children to move, speak, and respond more freely than traditional classroom activities." I was determined therefore to incorporate drama into my lessons. I also studied the 1997 Ontario mathematics curriculum in order to find guidelines about how to teach mathematics in a fun and interactive way. What I found in the Ontario mathematics curriculum were very specific expectations, with no specification as to how teachers should attain the outlined goals. Lessons could be as creative and expansive as the teacher planned. During my on-campus weeks at the Faculty of Education I also learned some interactive curriculum ideas from my various professors.

In summary, I aimed to make learning more interactive by using the following four strategies:

1. Introducing drama across the curriculum;
2. Relating math to real life;
3. Allowing students to lead the teacher in an activity;
4. Integrating math and literature.

1. Introduction of Drama into My Lesson

I was planning a lesson on friendship and saw the perfect opportunity for students to start working collaboratively. Students were asked to make groups of 2, 3, or 4 and were given a short problematic scenario. They had to prepare a skit, which included portrayal of the problem and their resolution of the situation. Immediately groups were at work deciding who would play what role, what they would do and how they would do it. The skits were well done and after each skit I led discussions. The discussions were rich and included the students sharing alternative solutions, feelings and ideas about issues ranging from stealing to racism.

2. Relating Math to Real Life

In class, we had just begun "The Voyage of the Mimi" which is a cross-curricular unit on whales. The unit involves students watching a series of episodes about a group of people who have gone whale - watching. Accompanying the video series is a book containing language, math and/or science exercises for each episode. The unit itself includes centres and a lot student interaction. The students were all immediately intrigued by the topic of whales. They would eagerly await that time in the day when we would study the "Voyage of the Mimi" (even on days that didn't include the video).

I was asked to teach a lesson comparing different whale sizes. I started the lesson by asking the students how long the Blue Whale (30m) was... the length of one student?, of the classroom?, of the school?. As I expected the students were uncertain and a debate occurred. The only solution, I said, was to actually measure them out. I asked the students to make their own groups and then I gave each group a metre stick (or measuring tape) and string. Each group was assigned a different whale. The energy in the room was electric. Students were excited and totally dedicated to the task. They asked questions of each other and delegated tasks and only one or two students needed my help in finding some

direction. After they were done measuring, they had to answer questions together as a group such as "How many centimeters long was your whale?".

The next logical step was to have students stretch their string outside, on the school ground, and draw the whales to full size with chalk. Again this task reaped amazing results. Though they had measured out the lengths with string, nothing had prepared them for seeing the actual length of the whales. Since the whales were huge, each child was involved in drawing their part of the whale. Wonderful, unplanned learning occurred. One group, for example, decided to see how long their whale was using a unit other than meters. (Did you know that the Grey Whale was "11 students and 2 feet long?") Students learned the relative size of whales to real life objects such as the school building.

3. Allowing Students to Lead an Activity

Graphing is an essential skill that should be extended throughout the grades. The students had already completed one graph when I began this action research project, but I wondered if they really understood the information that a graph relayed. Therefore, I decided to have the students lead me in making a graph. Before I even spoke of graphs, I asked them how we can show the different size of whales. Students answered with answers such as string, paper, metre sticks, people, etc.. Then I asked how they could show this on a single piece of paper. Eventually someone told me that using a graph would work. The students instructed me as to the steps I should take in creating the graph. As I did each step on an overhead, students prepared their own graph. When we had problems, I let the students discuss amongst themselves how we could solve them. One student said, for example, that the largest whale was 30 metres and that we only had 10 spaces on the vertical axis. The class solved this problem together; students were actively learning.

4. Integrating Math and Literature

I felt that integrating literature and mathematics would intrinsically motivate the students and lead to productive learning on many fronts. We made tangrams together and then I read "Grandfather Tang's Story" by Ann Tompert. During the story, students changed their tangrams to correspond to characters in the book. This activity involved manipulating different geometric shapes, a process that is essential for mathematical understanding. The book also allowed students to predict what was going to happen after every page. Prediction, of course, is a cornerstone of mathematics and reading ability.

The Results

1. Many important skills were exercised and the learning was more expansive than seatwork often allows. Mathematical skills, such as measuring and manipulating geometric shapes, were performed. Language skills were also practiced, as well as interpersonal skills necessary for group work. Students at various levels of intellectual development were successful at the tasks since the tasks required students to make use of many forms of intelligence. Unexpected learning situations occurred, for example, when students decided to measure the length of the whale in number of people. Understanding was deep, as demonstrated by the fact that students were able to lead me in making a graph and explain what it meant. Students were also able to relate the size of different whales to concrete objects in the school yard.

2. Students were excited about doing these activities. The students' feedback about the activities was very positive. Many students commented that they worked better in groups because others helped

them concentrate. When we went outside to draw the whales, many commented about how amazed they were at the actual size of the whales. The day we did the graphing and the tangrams, one student said in surprise "we're doing two fun activities in the same day!". They didn't even correlate these educational activities with work or learning; it was fun. In addition to the direct positive feedback, I observed the two obvious indicators of student interest: the expression on their face and their dedication to the task. Students were visibly happy and on task because they wanted to see the result.

3. There were a few problems in classroom management. I didn't need to remind students to not speak out of turn or to stay on task. I was a part of the learning process and had more time to assure that the students had understood the task. The result was an increase in independent, constructive learning, as predicted by Alfie Kohn in his book "Beyond Discipline". Students rarely had to ask me a question because the instructions were clear and when in doubt they asked each other questions.

Conclusions: Providing students with increased opportunities for interactive, integrated learning increased the quality of the learning that occurred within the classroom. Students were motivated when they were given a greater responsibility for their learning and when it was important to them. Since the students were interested in the material, they gave the task a lot of effort and concentration. As a consequence, discipline problems within the classroom decreased. As a teacher, I then had time to focus my attention on facilitating and furthering the students' learning.

References

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TEACHERS IN ACTION

Reading and Enjoying a Poem

Shamala.S.K, Class IV Teacher, Demonstration Multipurpose School, Mysore.

The students of class V are expected to 'Read and Enjoy' a few poems present in their textbooks. The reading of the poem, understanding the central idea of the poem and writing the answers to 'Wh--' questions given at the end of the poem never gave the students any opportunity to 'enjoy' the poem. The learning of the poem was mechanical, formal and prosaic.

The teacher thought of 'stimulus variation' techniques to enable the students to 'enjoy' the poem. The poem

What does the little birdie say
In her nest at peep of day ?
"Let me fly," says little birdie,
"Mother, let me fly away."

"Birdie, rest a little longer,
Till the little wings are stronger."
So she rests a little longer.
Then she flies away.

Was introduced by a model reading followed by students' participation in question and answer procedure to understand the poem. The class was then divided into four groups. Group A painted the scene of mother and little birdie in a nest on a tree. Group B made a model of the scene using different materials like thermacole, wire, paper cutting and twigs. Group C enacted the dialogue of mother and little birdie. Group D sang the song to a catchy rhythm embellished with suitable actions. The group thoroughly enjoyed doing these activities and appreciated the poem. Over and above, they experienced the beauty of the lines, rhyme pattern, rhythm, colours, emotions and words involved in appreciating the poem. The experience not only reinforced, clarified and envisaged the content but also enabled the students to be active and enjoy the learning process.

Drawing neat and correct diagrams in Biology

Sarada.B, Former Biology Teacher, Jawahar Vidyalaya Sr. Sec. School, Madras.

In the first two years of my teaching, I found that the diagrams in Biology drawn by the students were shabby and incorrect. They had the model diagrams in their textbooks; and the commercial charts were on display in the class. On ruminating over the problem, I realized that the parts of each diagram, especially the complex ones like the human digestive system, were not clear to the children and they had no idea as to where to begin and how to proceed; the models they had in front of them were the 'finished products' or the completed diagrams.

In the third year, I started developing each diagram step by step on the blackboard, allowing sufficient time for the students to develop the same in their notebooks. Now the students knew where to begin and how to proceed; each part was clearly delineated. To emphasize on neat presentation, they were asked to take note of the following points:

- Colours are used purposefully.
- The diagram is drawn a little to the left of the page and to the extent possible, all the labels are on the right side.
- Only a pencil is used for labelling the diagram.
- The caption and the labels are in block letters.
- A scale is used to draw the arrows for labelling.
- All the arrowheads are right aligned.

There was a marked improvement in the presentation and correctness of the diagrams drawn by the students. The change was observed even in class IV.

TEACHERS IN ACTION

Reflections on Weekly Plans

Sue Garver, third grade teacher, Riley, Kansas

I find myself constantly evaluating and re-evaluating what I do in my classroom on a daily and yearly basis. Being a reflective person has allowed me to grow and improve in my teaching. There are several things that I do on a regular basis that help me be more reflective in my teaching.

First, I meet with other teachers during our breaks or after school in order to compare notes—two heads are always better than one. During this time, we talk, compare ways we teach a subject, share new ideas, and just give each other moral support. This is a time when I reflect on the methods I currently use to present a subject and on ways that I could improve my teaching methods.

Second, I take a few minutes at the end of each day to evaluate the lessons I taught that day. I think this has helped me improve my teaching skills. In addition, I have included a column for these evaluative and reflective comments right in my plan book next to the plans for each lesson. Throughout the day, I often make notes on a sticky pad concerning the lessons I teach. Then at the end of the day, I transfer those notes to my plan book in the column for my reflections. I make notes concerning the success of the lesson, what I could do differently next time, what could be done to meet the needs of individuals, what I did right in the lesson, and anything else that might be helpful next time I teach that lesson. I keep those lesson plans close by when planning for the following year.

Third, reflecting upon my teaching enables me to set goals for myself more easily. My school asks that each teacher set yearly goals. I have found that I can set goals easily when I make these reflective notes during the school year and when I take time at the end of the school year to reflect on my teaching. I leave for the summer knowing what goals I have set for the following school year. By doing this, I can attend conferences, take classes, and read up on the areas where I feel I need improvement.

TEACHERS IN ACTION

Developing Rapport and Being Positive with Students

Barbara Lojka, fourth grade teacher, Manhattan, Kansas

It is so important to develop rapport with students. Sometimes, just letting the child know that you care can solve behavior problems. I might say "I can see you are frustrated. Can I help?" "You seem upset. Is something bothering you?" Also, a hug, a pat on the back, or ruffling the hair can soothe feelings about to erupt into misbehavior.

Dave Sampson, high school biology teacher, Marysville, Kansas

Be honest and sincere to *all* students. Develop a line of trust between them and yourself—and then the whole idea of teaching takes a positive turn. Students like to be told that they do good work and that it is appreciated. I draw smiley faces on papers that grade in the "A" bracket. The students even bring the papers back if I forget. This is just a small way to acknowledge their efforts.

TEACHERS IN ACTION

Beginning the Lesson

Jan Wilson, secondary life science teacher, Wichita, Kansas

Beginning the lesson may be the most difficult aspect of teaching the lesson. My years of experience have taught me how important it is to generate the interest and participation of the students as soon as possible, perhaps even before the bell rings. However, there is usually a minimal amount of "housekeeping" that every teacher needs to complete at the beginning of each new class period, such as taking attendance, collecting assignments, or explaining yesterday's lesson to an absent student. So, over the past few years, I have used various approaches at the start of the daily lesson to increase student participation and enthusiasm.

One approach that has worked very well for me is to have a display ready for the students to observe in my science class. The display may be simple, such as a chart or a multicolored diagram on the chalkboard. Or it may be a bit more elaborate, as with a plastic model, an experimental set-up, or even a dissecting specimen. I have also used articles out of magazines, items in the news that may pertain to class materials, a handout of a diagram, or even a small list of vocabulary words from previous class discussions or textbook readings. Eventually, you will even have students bringing in materials and ideas that may be helpful in initiating class activity.

A second approach that works well is to ask students a few questions at the start of class. The questions may deal with vocabulary words or involve critical thinking about the concepts. The questions usually involve some review from the previous day's lesson and offer a lead into the new material for the current lesson. This gives the student an opportunity to reflect on yesterday's lesson and to jot down any questions they may have concerning the display. While the students complete the questions on paper, I take attendance and deal with individual needs. With all necessary housekeeping completed and with student energies and interest directed in the desired direction, questions and discussions flow easily into the content of the new lesson.

TEACHERS IN ACTION

Guiding Student Reading

Joan Spiker, first grade teacher, Manhattan, Kansas

Having first-grade students practice reading on their own time has two advantages. First, it helps them become better readers. Second, it sets the foundation for being responsible for homework.

The *reading-ticket system* is a strategy which has been highly successful in first grade. At the end of the reading lesson, each student is given a slip of paper that has a short message to parents about the importance of reading at home each evening. It also has a blank to fill in the number of minutes read that evening and a place for a parent's signature. Students return the slips the next day to receive a small incentive. At the beginning of the year, a cracker or a sticker was given on a daily basis. As the year progressed, a calendar chart was used to color a square for each day the slip was returned. This provided a visual representation of the student's effort and was also helpful in parent conferences.

The reading-ticket system has three important parts. First, I explain the importance of a regular study time at home to the students and to the parents. Second, I carefully structure the incentives so that they remain secondary to the reading time. Third, I meet with the students and parents to review the monthly charts and set goals.

TEACHERS IN ACTION

Explicit Teaching

Paul J. Colombino, sixth grade music teacher, Naragansett, Rhode Island

I planned a highly structured, explicit lesson which relied more on experience and example than on explanation. The lesson was on fugue form, an imitative style made famous by Johann Sebastian Bach. The lesson was planned to have several parts, each involving a different mode of instruction.

The first activity had three parts. First, the students echoed simple rhythms. Second, the students were asked to perform continuous echoing during which I played, for example, four beats. Third, while the students were echoing, I then played a different rhythm. This gave a concrete example and a hands-on experience, which served as both a motivator and advance organizer.

The second activity was a canon or echo song, which the students first learned by rote. Then I sang the echo while the students sang the melody. Next, two to four students at a time joined me in singing the echo while the rest sang the melody. This was an enjoyable activity which disguised the fact that the song was repeated five or six times—a kind of practicing without the students being aware of practicing.

The culminating activity was to listen to the "Fugue in G Minor" by Bach. We first heard the main theme played on the piano. I asked the students to listen to the piece, count the number of times the theme was repeated, and identify what changed each time. Next, the students learned four simple dance steps. We used the dance steps to show where the theme entered and also when it changed. This dance activity was repeated three times with different small groups of dancers. Once again, the students listened to this piece five times without being aware of the repetition.

The students, therefore, experienced imitation first in a concrete fashion (clapping, singing), then experienced what might be called semi-abstract imitation (listening), then abstract imitation (reading about it). Finally, we tied the activities together in a listening/dancing experience.

TEACHERS IN ACTION

Preparing and Grading a Test

Dave Sampson, high school biology teacher, Marysville, Kansas

I obtain content for exam questions from the class notes, vocabulary words of the chapter, and the chapter review questions. Exams usually have fifty questions and include objective questions such as multiple choice, matching, completion, and listing. I use diagrams for identification of structures. I also use actual dissection specimens in a section of the test I call "What is it?" For these, I place the specimen in a display box and have numbered pins stuck in various parts that the students need to identify.

As a change of pace, I occasionally use a question called "Just for Thought." These are riddles or problems to work out, and they have nothing to do with the test content. Students can use them to replace one incorrect response from the exam. Students really enjoy the "Just for Thought" questions and sometimes do those first just to get relaxed at the start of the exam.

Without exception I return the corrected papers the following school day, and we go over the exams, make corrections, and settle any differences that may develop. I believe this procedure also serves as a good learning tool.

TEACHERS IN ACTION

Learning Styles

Donna Erpelding, third grade teacher, Manhattan, Kansas

Activities and assignments that take the students' varying learning styles into consideration make each child feel capable and like a contributing member of our class. I plan three types of activities that take the students' learning styles into account.

First, each week I plan an activity that deals with the "self." This could be a writing exercise about an experience, an attitude, or a feeling about a certain situation. Poetry and drawings fit into this aspect of personal learning, too. Students bring items from home to share with the class and enhance the week's content theme.

Second, I plan activities that deal with the "scholar" within each student. These activities include traditional paper and pencils. I try not to use ditto sheets, but I occasionally assign worksheets or writing and math assignments. I consider these assignments more of an assessment of my teaching for student understanding than an assessment of the students' work. If a number of these worksheets are not correct, then I know that I did not do an adequate job of teaching the material. Then, I need to reteach the concept using a different strategy.

Third, I plan activities each week which are activity based or hands-on. Both science and math instruction fit into this area. By incorporating a science activity into a theme, it makes learning come alive. Science isn't just a vocabulary word or an idea in a book. It is a thinking and working relationship with the world. For students to understand and appreciate the world around them, they need to use their senses and problem-solving skills to develop confidence to solve bigger problems in society. Activity-based science lessons enhance and make themes real and meaningful to the students.

I use math manipulatives to build student understanding and to enhance the theme. The manipulatives also give the students a way to think and learn about the world around them. My goal in math education is to have the students develop an understanding of numbers. This is done in a variety of ways, but always by keeping the theme in mind.

The skills involved in looking for patterns, communicating, estimating, developing reasoning and a number sense, problem solving, and using mental math strategies all relate to the curricular theme and to the real world. All of these instructional approaches provide variety in addressing the students' learning styles.

TEACHERS IN ACTION

My View of Homework

Cindy Norris, sixth grade teacher, Manhattan, Kansas

How beneficial is it for an elementary-aged child to spend two to three hours doing homework? Does this better prepare the child to be a "good" student? Wait a minute, hasn't this child already spent from 9:00 a.m. to 3:45 p.m. at school?

There are varying philosophies on the issue of homework. Is it really necessary to have "work at home"? Maybe, but children need time at school to work on their assignments where they can get adequate help, ask questions, and get immediate feedback.

What is the purpose of a teacher handing out homework at the door at the end of the day? If it is for practice and reinforcement and if it is a short assignment, I see no problems with it. Homework like this can help children learn responsibility by completing the assignment and getting it back to school.

To me, homework should be what the student doesn't finish at school, or it may be a short assignment to do at home that is for practice or reinforcement. Homework should not be assigned simply to occupy time!

TEACHERS IN ACTION

Giving Personal Attention and Reinforcement

John Wolters, sixth grade teacher, Manhattan, Kansas

"Just what are you doing with my daughter?" came from the mother of one of my students as she sat down for our first parent-teacher conference. Keeping as calm and collected as I could, I tried to surmise if this was a call for panic or if I was to be commended for a job well done. Before I could respond, she went on. "Before sixth grade, Amber was a girl who just went through the motions when it came to school stuff. Her grades had been steady C's and D's, with an occasional B. She never talked about school at home, and doing homework was like pulling teeth."

"But this year, we have a different girl at home. She comes home and isn't seen until her homework is done. Amber hasn't missed a day yet, and even came to school sick one day when she didn't want to miss a science experiment. I had hopes that this would mean better grades, but I was floored when you sent home this sheet with all A's and B's. What are you doing with her? Do you share your secrets?"

I had no idea of Amber's previous record since she came new to our school that year. From the first day, she appeared to be a diligent worker, but it appeared that school didn't come naturally for her. I didn't think I would need to take any additional steps to motivate her.

I gave Amber personal attention in several ways—this worked for her. During recess I would talk with her and other students, trying to bring out similarities that each of them might not have found out about each other as quickly if I had not intervened. Amber sincerely appreciated the notes that I wrote to her which focused on something she had done well. Sometimes the notes just affirmed a positive quality I had noticed about her. She even wrote thank you notes back; some even included questions she wanted me to answer in a note back to her.

When I included comments on her papers about something she had done well, she continued doing well in that area. If I pointed out something that could be done better, she made noticeable improvement in the following papers. She also responded to expectations I put before the class—they became personal goals for her. If work was ever late, she came to me and told me exactly why it was late and when I could expect it turned in. She said that she would work hard not to let it happen again.

Before Amber's mom left, I assured her that Amber had the major role in the changes that had taken place. What I had done to help Amber, I had done with the rest of the class as well; yet not all of the students made as much progress as Amber.

TEACHERS IN ACTION

Involving Students by Preparing Bulletin Boards

Mary Joyce Grinsell, secondary home economics teacher, Pawtucket, Rhode Island

I allow students to take turns in designing bulletin boards. This is an excellent tool for encouraging participation. For example, Maria was hesitant to offer any opinion or even to answer questions. She and another student were asked to come up with an idea for a bulletin board that would reflect the content we were studying at the time. Because Maria only had to clear her ideas with one other student, she seemed to feel more free to express herself. Maria and Beth selected a theme statement, wrote a short paper explaining their concept, and then constructed the bulletin board to illustrate their idea.

I also have found that this approach works well with students who have limited English. When paired with another student who has more proficiency in the English language, the students are able to prepare an acceptable paper and produce the bulletin board.

TEACHERS IN ACTION

Planning to Integrate All Subjects

Donna Erpelding, third grade teacher, Manhattan, Kansas

Over the years of working with children, I have observed and have come to the conclusion that children learn more if they can see how everything fits together. Several years ago one of my students made a comment when I wanted a written paper corrected for spelling errors. He said, "Why should I rewrite this paper to correct the spelling? This isn't spelling class." Now I strive for integration of my lessons. I think integration of knowledge aids in understanding, critical thinking, and problem solving.

Content in my classroom, therefore, revolves around a theme. A week long study of Mexico can be used to illustrate theme integration. Everything we studied during the week focused on Mexico. The stories we read in reading had a Spanish or Mexico emphasis. The lessons in social studies were centered around the history of Mexico and map studies. Major geographical features—mountains, lakes, sea coasts, plains—were part of the week's experiences and assignments. In science we looked at how simple machines helped in the building of the Mayan temples. We made an inclined plane and pulled a basket of "rocks" (books). Spelling words that week were Spanish words that are familiar to us in our daily lives. We learned a few Spanish phrases, listened to Spanish music, and completed some artwork dealing with a Mexico influence. In math, we wrote word problems dealing with products in Mexico's agriculture. The librarian shared slides and articles of pottery, clothing, baskets, and other materials she obtained on a recent trip to Mexico.

We did some critical thinking about a variety of influences on Mexico's food production. We had a problem-solving discussion on the transportation of fruits, fresh flowers, and other products to destinations in the United States. Among other questions, we asked how fruits and flowers are kept fresh. By the end of the week, the students had a better understanding and appreciation of Mexico. I deliberately planned the integration of all the subjects around the theme of Mexico.

ANNEXURE

REGIONAL INSTITUTE OF EDUCATION (N C E R T)
MYSORE -570 006

Project : ACTION RESEARCH

Dear Participant,

We are happy to welcome you to this project and your active association would go a long way in making this a more meaningful and purposeful activity. Enclosed please find herein a few leaflets, work schedule and a questionnaire. Kindly fill-in the questionnaire and pass it on to us within a WEEK's time. This would enable both of us to plan and act within a time frame. You may in turn communicate to the identified elementary school teachers regarding the " Level II : Programme - 1 " (11^{th} - 13^{th} Aug 1998).

The State Project Director, DPEP, Karnataka State will give you direction regarding TA, DA and other funds. Accommodation will be arranged for you in Narmada Hostel, RIE Campus, Mysore during the days of workshop at prevailing rates.

Looking forward to your active participation in this joint venture.

Yours faithfully,

(A.S.N.Rao Sindhe)
Programme Coordinator

REGIONAL INSTITUTE OF EDUCATION (N C E R T)
MYSORE -570 006

QUESTIONNAIRE

INSTRUCTION: Kindly fill-in this questionnaire and mail it to Dr. A.S.N.Rao Sindhe, Programme Co-ordinator, Regional Institute of Education, Manasagangothri, Mysore - 570 006 latest by 15 July 1998.

Part I

Name : ..... Sex: M F
Designation : .....
Address :

Office	Residential
.....	.....
.....	.....
.....	.....

Phone :.....

Educational Qualification :
General .....
Professional .....

Teaching experience :

LEVEL	POST HELD	FROM	TO
Elementary			
Secondary			
DIET			

Training received by you during the past THREE years

YEAR	PROGRAMME	PLACE	DURATION
1997-98			
1996-97			
1995-96			

Have you carried out any action research in your DIET ? Yes No
If "Yes" give the titles (Enclose the abstracts of the same)

SL.NO	TITLE
1	
2	

Do you have the knowledge of typing ? Yes No

Do you have the knowledge of Computer ? Yes No
If "Yes" are you familiar with " MS Word and MS Excel " ? Yes No

Part II

Kindly identify 4-6 Elementary school teachers of your district who will be involved by you in the Project " ACTION RESEARCH". For the training at the Level - II, you please select teachers who :

- have enthusiasm / interest in taking up the Action research work;
- have the capacity to carryout the work independently;
- have the adequate oral/written communication skills for interaction with your team;
- preferably have the knowledge of typing both in Kannada and English ;
- will attend all the programmes that you organise during the next 90 days and involve themselves in all the activities of the project;
- will help you in collecting, organising, entering and editing the data;
- will help you in the preparation of the reports;
- will diligently maintain the documents (questionnaire, anecdotal records, diaries, etc.,); and
- will adhere to the time schedule

SL.NO	NAME OF THE TEACHER	ADDRESS
1		
2		
3		
4		
5		
6		

Part III

List out the problems identified by you for the Action Research in the **order of priority**

PROBLEM IDENTIFIED

REGIONAL INSTITUTE OF EDUCATION
MYSORE 570 006.

ACTIVITY SHEET

Address of the DIET : .....
.....

District code : [ ]

Names of the DIET faculty :
1. .....
2. .....
3. .....

Title of the project :

Area : .....

Look

Concern :

Research questions :

Plan

Collaborators :

Evolution of the plan :

Objectives :

……
……
……
……
……

Proposed change in action :

Action hypotheses :

……
……
……
……
……
……

Methodology :

* Target group

* Techniques &Tools

* Procedure/Detailed Action Plan

* Recording procedures

* Time schedule

* Cost estimation Rs Ps

1.....
2 .....
3 .....
4 .....
5 .....
6 .....
Total :

Follow-up Action

What you are supposed to do;

- Try out the action strategy, have discussion, try to reflect in your small group, list out the modifications;
- Prepare a brief report which has to be presented in the next workshop.

Regional Institute of Education (NCERT), Mysore 570 006

TRAINING THE DIET FACULTY OF KARNATAKA STATE
IN CONDUCTING ACTION RESEARCH

REPORT

Session:
(Time)

Theme/ Topic/ Activity :.....

Date

Signature

THE MEGA-TEAM

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GLOSSARY

GLOSSARY

Abacus	ಮಣಿಕಟ್ಟು
Abstract	ಅಮೂರ್ತ
ABTS	ಚಟುವಟಿಕೆ ಆಧಾರಿತ ಬೋಧನಾ ತಂತ್ರಗಳು
Acknowledgement	ಉಪಕಾರ ಸ್ಮರಣೆ
Act	ಕ್ರಿಯೆ, ಕಾರ್ಯಗತ ಮಾಡು
Action	ಕಾರ್ಯ
Action Hypothesis	ಕ್ರಿಯೆ ಪ್ರಾಕ್ಕಲ್ಪನೆ
Action Plan	ಕ್ರಿಯಾ ಯೋಜನೆ, ಕಾರ್ಯ ಯೋಜನೆ
Action Research	ಕ್ರಿಯಾ ಸಂಶೋಧನೆ
Action Strategy	ಕ್ರಿಯಾ ತಂತ್ರ
Activity	ಚಟುವಟಿಕೆ
Addition	ಸಂಕಲನ, ಕೂಡುವುದು
Alternative	ಪರ್ಯಾಯ
Analysis	ವಿಶ್ಲೇಷಣೆ
Area	ಕ್ಷೇತ್ರ
Arithmetic Mean	ಅಂಕಗಣಿತ ಸರಾಸರಿ
Assumption	ಪೂರ್ವಕಲ್ಪನೆಗಳು
Bias	ಪೂರ್ವಗ್ರಹ
Bibliography	ಗ್ರಂಥಋಣ
Check List	ತಾಳೆ ಪಟ್ಟಿ
Clear	ಸ್ಪಷ್ಟ
Code	ಸಂಕೇತ
Coding	ಸಂಕೇತೀಕರಣ, ಸಂಕೇತೀಕರಿಸುವಿಕೆ
Collaboration	ಸಹಭಾಗಿತ್ವ
Collaborator	ಸಹಭಾಗಿ
Counseling	ಉಪಚೋದಿ, ಪರಾಮರ್ಶನ,ಸಲಹೆ
Critical	ವಿಮರ್ಶಾತ್ಮಕ
Cumulative	ಸಂಚಿತ
Cycle	ಚಕ್ರ
Cyclical	ಚಕ್ರಿಯ
Data	ದತ್ತಾಂಶ, ಮಾಹಿತಿ
Deviation	ವಿಚಲನೆ
Deliberate	ಉದ್ದಿಶ್ಯಪೂರ್ವಕ
DIET	ಜಿಲ್ಲಾ ಶೈಕ್ಷಣಿಕ ತರಬೇತಿ ಸಂಸ್ಥೆ
Dissemination	ಹರಡು, ಪ್ರಚಾರಮಾಡು
Document	ದಾಖಲೆ
Documentation	ದಾಖಲಿಸುವಿಕೆ
DPEP	ಜಿಲ್ಲಾ ಪ್ರಾಥಮಿಕ ಶಿಕ್ಷಣ ಯೋಜನೆ

Encoding	ಸಂಕೇತೀಕರಣ,ಸಂಕೇತಿಸುವಿಕೆ
Evolution	ವಿಕಾಸ, ವಿಕಸನ
Experts	ಪರಿಣತರು
Exploration	ಅನ್ವೇಷಣೆ, ಹುಡುಕಾಟ
Evidence	ಪುರಾವೆ,ಸಾಕ್ಷಿ, ಪ್ರಮಾಣ
Faculty	ಸಿಬ್ಬಂದಿ,ಪ್ರಶಿಕ್ಷಕರು
Findings	ಫಲಶ್ರುತಿ
Flexibility	ನಮ್ಯತೆ, ನಮನೀಯತೆ
Hypothesis	ಪ್ರಾಕ್ಕಲ್ಪನೆ
Hypothesize	ಪ್ರಾಕ್ಕಲ್ಪಿಸು
Implementation	ಅನುಷ್ಠಾನ
Innovative	ಸುಧಾರಣಾತ್ಮಕ, ನವೀನ
Institution	ಸಂಸ್ಥೆ, ಶಾಲೆ
Interpretation	ಅರ್ಥೈಸುವಿಕೆ, ವ್ಯಾಖ್ಯಾನ
Interview	ಸಂದರ್ಶನ
Interview method	ಸಂದರ್ಶನ ವಿಧಾನ
Intuition	ಅಂತರ್ಬೋಧೆ
Learning	ಕಲಿಕೆ
Logical	ತಾರ್ಕಿಕ,ತರ್ಕಬದ್ಧ
Look	ದೃಷ್ಟಿ, ನೋಟ,ದೃಷ್ಟಿಸು,ನೋಡು
Marks card	ಅಂಕಪಟ್ಟಿ
Mean	ಸರಾಸರಿ
Median	ಮಧ್ಯಕ
Natural	ಸ್ವಾಭಾವಿಕ,ಸಹಜ
Negative	ನಕಾರಾತ್ಮಕ
Objective	ವಸ್ತುನಿಷ್ಠ
Observe	ಅವಲೋಕನೆ ಮಾಡು
Observation	ಅವಲೋಕನೆ
Open	ತೆರೆದ, ಮುಕ್ತ
Open eye	ತೆರೆದ ಕಣ್ಣು
Open mind	ತೆರೆದ ಮನಸ್ಸು
Passive	ನಿಷ್ಕ್ರಿಯ
Performing Arts	ಪ್ರದರ್ಶನ ಕಲೆ
Plan	ಯೋಜನೆ

Positive	ಇತ್ಯಾತ್ಮಕ, ಸಕಾರಾತ್ಮಕ
Practice	ಆಚರಣೆ
Precise	ನಿರ್ದುಷ್ಟ, ಕ್ಲುಪ್ತ
Process	ಪ್ರಕ್ರಿಯೆ
Professional	ವೃತ್ತಿಪರ
Proposal	ಪ್ರಸ್ತಾವನೆ
Proposed	ಉದ್ದೇಶಿತ, ಪ್ರಸ್ತಾಪಿತ
Quality	ಲಕ್ಷಣ,ಗುಣಮಟ್ಟ
Qualitative	ಗುಣಾತ್ಮಕ, ವಿವರಣಾತ್ಮಕ
Quantitative	ಸಂಖ್ಯಾತ್ಮಕ, ಪ್ರಮಾಣಾತ್ಮಕ
Questionnaire	ಪ್ರಶ್ನಾವಳಿ
Rating scale	ದರ್ಜಾಮಾಪನ
Record	ದಾಖಲೆ, ದಾಖಲಿಸು
Refine	ಸುಧಾರಿಸು,ಉತ್ತಮಪಡಿಸು
Reflect	ಪುನರವಲೋಕಿಸು, ಪುನರವಲೋಕನ
Re-plan	ಮರುಯೋಚಿಸು
Report	ವರದಿ, ವರದಿಮಾಡು
Reliability	ವಿಶ್ವಾಸಾರ್ಹತೆ, ವಿಶ್ವಸನೀಯತೆ
Research	ಸಂಶೋಧನೆ
Role play	ಪಾತ್ರಾಭಿನಯ
Sample	ಮಾದರಿ, ನಮೂನೆ
Selection	ಆಯ್ಕೆಮಾಡು
Schedule	ತಪ್ಸೀಲು, ತಪಸೀಲು
Simulation	ಛದ್ಮ
S.P.D.	ರಾಜ್ಯ ಯೋಜನಾ ನಿರ್ದೇಶಕರು
Spelling	ಕಾಗುಣಿತ
Square	ವರ್ಗ
Standard Deviation (SD)	ಮಾನಕ ವಿಚಲನೆ
Steps	ಹಂತಗಳು
Strategy	ತಂತ್ರ , ಕಾರ್ಯತಂತ್ರ
Study	ಅಧ್ಯಯನ
Subjective	ವ್ಯಕ್ತಿನಿಷ್ಠ
Systematic	ವ್ಯವಸ್ಥಿತ
Table	ಕೋಷ್ಟಕ
Teaching	ಬೋಧನೆ
Test	ಪರೀಕ್ಷೆ
Text	ಪಠ್ಯ
Time frame	ಕಾಲಮಿತಿ, ಚೌಕಟ್ಟು
Tool	ಸಾಧನ,ಸಲಕರಣೆ,ಪರಿಕರ

Transcoding	ಸಂಕೇತಾಂತೀಕರಣ
Transformative	ಪರಿವರ್ತನಾತ್ಮಕ
Validation	ಮೌಲ್ಯೀಕರಣ
Validity	ಸುಸಂಗತತೆ, ಸಂಗತತೆ
Variable	ಚಲಕ, ಚರಾಂಶ
Variation	ವ್ಯತ್ಯಾಸ, ಬದಲಾವಣೆ
Verify	ತಾಳೆನೋಡು, ಪರೀಕ್ಷಿಸು