

PN-ACK-305

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**IMPROVING EDUCATIONAL QUALITY PROJECT (IEQ)
SOUTH AFRICA**

**An Impact Evaluation of the Independent Training and
Educational Centre's (ITEC)
Lower Primary Initiative (LPI)**

Prepared for:

United States Agency for International Development
Pretoria, South Africa

Project Undertaken by:

Institute for International Research
in collaboration with
Juarez and Associates, Inc.
and
The University of Pittsburgh

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Acknowledgements

The IEQ Project would like to thank the following people for their contribution to the study:

- Consultants Norman Gold, Pat Campbell and Bobby Soobrayan who provided technical support in the design of the study, instrument development , data analysis and report review
- ITEC Lower Primary Initiative Project Leader, Noeleen Barry who provided guidance and vital information for the study and participated in the implementation of the study
- ITEC Lower Primary Initiative facilitators and curriculum developers, for collecting data for the assessment:

Noluthando Saki

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Mandisa Muluse

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Jacqeline Klem

- IEQ Director Jane Schubert , ITEC LPI Project Leader, Noeleen Barry and Consultants Pat Campbell and Bobby Soobrayan for reviewing the report and providing valuable comments
- Nadia Minty for final editing and layout and Nokuthula Mthembu for administrative assistance and support

Most grantees' encounters with programme evaluators consist of feeling under threat, interference with service delivery and impositions on staff time. These negative experiences emerge because donors usually insist that evaluations be conducted by external evaluators who are seen as "outsiders". External evaluators usually do not make it a point to be of assistance to the programme and often, the programme staff have little confidence in the evaluation process that they are not always willing to co-operate with the evaluator. However, the IEQ Project's approach to working with grantees in introducing and implementing evaluation methodologies differs from previous experiences in that the IEQ develops collaborative relationships with grantees that involve:

- identifying grantee information needs which may be gathered during the assessment;
- working together to construct a design that fulfils grantee information needs;
- forming teams of IEQ and grantee staff to develop data collection instruments that remain with the grantees for project use;
- building capacity to sustain monitoring and evaluation activities;
- conducting site visits together and
- developing strategies for utilisation of the findings to influence policy and improve practice.

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List of Acronyms Used

HPTC	Higher Primary Teaching Certificate
IEQ	Improving Educational Quality (Project)
INSET	In-service Education for Teachers
ITEC	Independent Training and Educational Centre
JPTD	Junior Primary Teaching Diploma
NGO	Non-Governmental Organisation
LPI	Lower Primary Initiative
PTC	Primary Teaching Certificate
PTD	Primary Teaching Diploma
SPTD	Senior Primary Teaching Diploma
USAID	United States Agency for International Development

INTRODUCTION

There are pressing demands for quality education in South Africa. Non-governmental organisations (NGOs) such as the Independent Training and Educational Centre (ITEC), have programmes that focus on in-service training of teachers in learner-centred methods to enhance teaching and learning in mainly rural classrooms in the Eastern Cape Province. The potential exists for using models for in-service teacher education (INSET) created by ITEC and other in-service providers in addressing the very great need for enhancing the quality of education on a larger scale.

This report presents the findings of an Impact Evaluation conducted collaboratively by the Improving Educational Quality (IEQ) Project and ITEC which operates in most areas of the Eastern Cape Province. The purpose of the study is to examine the impact of in-service teacher education offered by ITEC's Lower Primary Initiative (LPI). The evaluation is at the behest of ITEC in fulfilment of a United States Agency for International Development (USAID) grant requirement.

THE INDEPENDENT TRAINING AND EDUCATIONAL CENTRE (ITEC)

The Independent Training and Educational Centre (ITEC) is a non-governmental organisation (NGO) that provides educational training and access to resources in most areas of the Eastern Cape Province. Specific educational and training needs of educators (teachers, principals, subject advisors, education development officers) are met by training programmes, and the broader community and students are served through the Literacy Programme, the Job Training Centre and the Resource Centre.

Although ITEC headquarters are situated in central East London, its largest training programme, the Lower Primary Initiative, focuses on teachers and pupils in rural schools.

PROGRAMME DESCRIPTION

ITEC's Lower Primary Initiative provides non-accredited courses for unqualified and under qualified primary school teachers wishing to improve their competencies in the classroom. These teachers are from urban, peri-urban and rural areas (including farm schools) in the Greater East London and ex-Ciskei areas. The LPI is conducted over 2 or 3 years, during which time eight modules are completed. The pace at which teachers progress from one module to the next depends on them mastering certain competencies and conducting self-evaluations which are integral to the programme's methodology.

The programme's goals include the following :

1. creating a learner-centred learning environment;
2. implementing group teaching strategies; and
3. conducting continuous evaluation.

PURPOSE

The purpose of the evaluation was to assess the relationship between participation by teachers in the ITEC LPI in-service teacher training (INSET) programme and instructional practices and learner participation variables associated with high quality. The evaluation was undertaken by the Improving Educational Quality (IEQ) project team in collaboration with ITEC staff members and representatives of five other participating organisations that provide in-service training for teachers. An accompanying report summarises the results of the overall INSET evaluation. This report describes the ITEC evaluation.

This evaluation had the added purpose of building the capacity of participating NGO staff to systematically monitor and evaluate their own programmes. Through a collaborative approach to evaluation, NGO representatives worked closely with the IEQ team in designing and conducting the evaluation and in planning for the utilisation of the results. Results have the potential of affecting change not only in terms of programme improvement and showcasing results to potential donors, but also to pointing to models for quality in-service teacher education for the country at large.

EVALUATION QUESTIONS

The evaluation examined questions related to the impact of ITEC training at the classroom level:

1. In what ways do teachers with different levels of training teach differently?
2. In what ways do learners in classrooms taught by ITEC trained teachers at different levels of training participate differently?
3. In what ways do the classroom environments of teachers with different levels training differ?
4. What is the relationship of other variables such as education, teaching, experience, age and type of school on teaching, learning and the classroom learning environments?

DESIGN

COLLABORATION BETWEEN IEQ AND ITEC

The LPI staff worked with the IEQ team members in designing and carrying out the evaluation. Throughout the process, collaboration, capacity building and mutual learning were emphasised and responsibilities delineated for all participants. The LPI co-ordinator served as a contact person and worked in collaboration with the IEQ team in designing the evaluation, developing instruments based on the programme objectives, training programme facilitators to collect data, interpreting the results and planning for utilisation of the results.

INSTRUMENTATION

To address the evaluation questions, the ITEC programme co-ordinator worked with IEQ team members to identify intended ITEC programme outcomes for teachers (variety of teaching methods, use of materials, etc.) and learners (learner participation, interaction with the teacher and other learners, use of materials, etc.). This focus on the classroom, and particularly the impact on learners, is important, since enhancing pupil learning is the primary goal of education.

Instruments were developed to measure intended programme impacts and to gather information for enhancing programme outcomes. All instruments were developed in collaboration with the ITEC staff and a group of five other INSET NGO representatives in order to build capacity to develop instruments to assess their own programme in the future.

Instruments used in this evaluation included a teacher profile, classroom observation instrument, classroom environment and resource checklist, teacher questionnaire and interview protocol and facilitator questionnaire.

SAMPLE

The primary sources of information for the study were teachers who had participated in the LPI and the observations made during on-site classroom visits. A total of 50 teachers in thirty-five primary schools in the Greater East London and ex-Ciskei were selected by ITEC to participate in the impact assessment study. Thirteen teachers were classified as having had Level 1 training, 12 teachers had Level 2 training and 15 teachers had Level 3 training. Ten teachers who had not received any ITEC training (Level 0) were included as a comparison group. Teachers were randomly selected from a list of accessible schools. Once a geographically diverse group of schools was selected, the teachers in those schools, who comprised the sample, were categorised by level of ITEC training.

All of the teachers in the sample were female. Most of the teachers (58%), irrespective of the level of training, had completed high school. Eighty-eight percent of the teachers have a recognised professional teaching qualification. The majority of the teachers (80%) have more than 10 years of teaching experience. Ten teachers have teaching experience of 10 years and less. Twenty-five teachers (50%) are based in rural areas, 17 teachers (34%) are situated in urban areas and 8 teachers (16%) are located in farm schools. Since ITEC focuses on teachers in rural areas, it is not unusual that half the teachers observed are located in rural areas.

There were no significant differences among the four groups of teachers (Level 0, Level 1, Level 2 and Level 3) in age, experience, education (formal and professional) and type of school.

DATA COLLECTION

ITEC programme facilitators were trained in the use of the classroom observation instrument during June-July 1995. Participants observed a video-taped lesson, rated the lesson on each of the components, and discussed rationales for their ratings, to ensure that their understanding of ratings were correct. Training using the interview protocol was done in August 1995. During August 1995, an IEQ team member and the ITEC programme facilitators visited teachers in the study, observed classes, interviewed teachers and collected teacher questionnaires. In completing the observations, the data collection team observed an entire lesson for each teacher (30 minute minimum) and sat in a location in the classroom where they could see learners, in order to make inferences about learner engagement, observe learner interactions, etc. Whereas most traditional classroom observation instruments focus on teacher performance and behaviours, the focus of this observation was not only the teacher and the lesson but also the learners – engagement in learning tasks, opportunities to participate and interactions with the teacher and other learners.

DATA ANALYSIS

The qualitative data analysis was done using a variety of descriptive statistics, including frequency counts, means, percentages and inferential statistics, including analysis of variance and Chi-square tests. The descriptive and inferential statistics were done primarily using SPSS (Statistical Package for the Social Sciences).

Open-ended or qualitative data were read and broken into categories and, where appropriate, a search was made for patterns. Open-ended data were used to support or refute the results of the quantitative data.

MAIN FINDINGS AND CONCLUSIONS

It would appear that, overall, the ITEC Lower Primary Initiative Programme is making an important difference in enhancing teaching and learning in classrooms observed. The literature on effective teaching identifies a number of key indicators of effectiveness which are consistent with the core expectations of ITEC's training programme and the components of the classroom observation instrument. From ratings of teachers, with and without ITEC training, on 11 components of teaching and learning, it can be concluded that ITEC training makes a significant difference in teachers' instructional practices and learners' participation in classes.

The following is a list of more specific findings and conclusions:

1. ITEC trained teachers, from all levels, succeeded in creating a child-centred learning environment which, according to the LPI, refers to the effective organisation and management of physical space and the optimum use of resources within and outside the classroom. Three components of the observation instrument, namely, "use of materials by learners", "use of materials by teacher to enhance learning" and "grouping of learners" measured these standards. Teachers at each level of ITEC training were rated higher than teachers without ITEC training on these components.
2. Teachers who have received more than two years of ITEC training (Level 3) were rated higher in terms of the use of a variety of teaching methods, facilitating creative activities in learners and questioning skills used by the teacher. There are clear indications that mean ratings for these components increase with more training. This finding implies that teachers with initial training should improve at these instructional practices with more training.
3. Teachers at Level 3 training performed significantly differently to Level 1 (one year of training) teachers with regard to providing effective feedback to learners. This is the only observation component where mean ratings of Level 0 teachers were higher than Level 1 teachers. There is nothing in the data that explains this anomaly and the LPI staff have not been able to provide an explanation either. Possible explanations could be the manner in which these two groups of teachers approach feedback to learners or an outcome of the sampling procedure.
4. Teachers did not perform differently with respect to learners being engaged in group work and learners asking questions. With regard to learners being engaged in group work, it can be concluded that ITEC-trained teachers in particular, may be experiencing difficulties in practising the objectives of the group teaching module. The mean ratings for each level of training for the component relating to learners asking questions is less than two out of a possible four. These teachers are not able to differentiate between physically arranging learners into groups and facilitating learners to interactively work in groups. In terms of learners asking questions, the trend, irrespective of level of training, is that children are hesitant to ask questions and teachers are not fostering this activity. Both of these components have a bearing on changes in teachers' attitudes towards learners and as such, it can be concluded that either the training programme did not focus on this aspect or that teachers have not altered their perceptions, therefore their observed behaviour did not reflect this.
5. The findings are inconclusive with regard to those components related to the use of language to improve learner understanding and participation opportunities for learners. The former component was largely inappropriate for most of the observations because the medium of instruction for the lower primary phase is mother-tongue language, which in this instance is Xhosa. The variations of the latter component (participation opportunities for learners) were too general and did not effectively discriminate gender equity.

6. No significant differences in overall mean performance were found among teachers based on age, teaching experience, education and type of school. These factors do not explain the higher ratings for instructional practices and learner participation received by ITEC-trained teachers.

UTILISATION OF FINDINGS

PROGRAMME DEVELOPMENT

1. The results of this impact evaluation highlight the quality of in-service training provided by ITEC as an essential component of an overall strategy for teacher development and support in the Eastern Cape Province. ITEC could offer their approach to in-service training as a model to various institutions in the province. The findings of the study confirm that the training of teachers as “change agents” is developmental and at least three years of training is needed to transform the classroom into an interactive teaching and learning environment.
2. All levels of ITEC training succeeded in providing teachers with skills to effectively organise and manage the physical space in the classroom and to optimally use materials within and outside the classroom. Three components of the observation instrument measured these standards, viz., “physical grouping of learners”, “use of materials by learners” and “use of materials by teachers that enhance learning”. It is strongly advised that ITEC offer these training modules to other institutions, for example, other INSET non-governmental organisations and, possibly, Colleges of Education.
3. The training of teachers to improve the manner and extent in which “learners work in groups” as a specific teaching methodology needs to be re-assessed by ITEC. It is possible that ITEC trainees have a knowledge of the rationale underlying group teaching but they may experience difficulty in putting it into practice. It is suggested that ITEC re-examine the contents and training strategies of the group teaching module. There may be a need to increase the number of demonstration lessons specifically relating to this module during classroom monitoring and support visits. ITEC could explore the idea of identifying and enlisting district leader teachers to provide supplementary support.
4. Competencies which teachers with two and more years of training achieved should be introduced during initial training and reinforced as training progresses. This would also give teachers more time to practice newly acquired skills.
5. ITEC should consider integrating the development of communication skills of learners in all the modules of the training programme. Both learners and teachers should be made to feel comfortable talking to, and questioning each other. This could, for example, have a positive effect in addressing the issue of learners not being accustomed to asking questions.

INSTITUTIONALISATION

1. ITEC's LPI facilitators may consider revising and possibly adding other components to the classroom observation instrument for the purpose of monitoring and evaluating the programme on an on-going basis. The inclusion of a classroom observation instrument into ITEC's existing monitoring instruments may contribute to a more systematic internal monitoring and evaluation system.
2. Appropriate instruments, which assess learner performance, should be developed in collaboration with teachers to measure the impact of the training programme. Both the teacher and ITEC would be able to assess, on an on-going basis, whether the training is really enhancing teaching and learning in the classroom. Continuous assessments would also provide vital formative information for programme development.
3. ITEC should continue on-going negotiations with other teacher training institutions in the province to achieve accreditation, although careful thought and consideration should be given to teachers' professional qualifications criteria.

POLICY IMPLICATIONS

1. ITEC in-service training for teachers has shown to be very successful in upgrading teaching and learning where it "counts" – at the classroom level. Strategies to upgrade education must address the professional and development needs of the present teaching staff, many of whom are unqualified or under qualified. Investing in in-service training programmes such as ITEC creates the potential to build the capacity of teachers who are already at work in the majority of South Africa's classrooms.
2. ITEC has a holistic and context-appropriate lower primary INSET model and/or modules to offer the Department of Education in the Eastern Cape Province.
3. The LPI team have the experience and capacity to contribute innovative ideas to provincial education policy in areas such as curriculum development and implementation, resource provision, delivery, teacher support and monitoring of primary education programmes.
4. Monitoring instruments, or aspects of these instruments, developed by ITEC could be offered as a starting point to the Provincial Department of Education for use by circuit inspectors and subject advisors who are responsible for teacher appraisals.

FUTURE STUDIES

The following questions have been identified for possible further research studies.

1. What is the impact of the LPI on learner performance?
2. In what ways do monitoring and evaluation visits by facilitators add value to the implementation of the LPI?
3. To what extent does the socio-economic status of school affect the implementation of the LPI?
4. In what ways do instructional practices of teachers who have completed the LPI differ from those without training?

An Impact Evaluation of the Independent Training and Enrichment Centre's Lower Primary Initiative

Introduction

This report presents the findings of an Impact Evaluation conducted collaboratively by the Improving Educational Quality (IEQ) Project and the Independent Training and Educational Centre (ITEC), a non-governmental organisation (NGO), which operates in the Eastern Cape province. The purpose of the study is to examine the impact of in-service teacher education offered by ITEC's Lower Primary Initiative (LPI). The evaluation is at the behest of ITEC in fulfilment of a United States Agency for International Development (USAID) grant requirement.

The idea of monitoring and evaluating an educational programme is daunting. Evaluations are often viewed as burdensome on staff and potentially damaging to a programme if the "right" results are not produced. However, educators at all levels acknowledge the importance of knowing whether programmes strive to either improve learner academic performance or strengthen instructional practices do achieve their objectives. As debates on educational reform at the national and provincial levels occur, and the need to provide quality education increases, the necessity for reliable information is growing.

The report begins with a brief exposition of the context of the evaluation of the LPI and the IEQ Project's approach to programme evaluation. This is followed by an overview of the LPI, the purpose of the study, evaluation questions, the design of the study and the data collection (training and collection) and data analysis. The findings of the study are then presented and discussed and is followed by a section on the utilisation of the findings. A series of appendices which contain additional information appears at the end of the report.

THE INDEPENDENT TRAINING AND EDUCATIONAL CENTRE (ITEC)

The Independent Training and Educational Centre (ITEC) is a non-governmental organisation (NGO) that provides educational training and access to resources in most areas of the Eastern Cape Province. Specific educational and training needs of educators (teachers, principals, subject advisors, education development officers) are met by training programmes, and the broader community and students are served through the Literacy Programme, the Job Training Centre and the Resource Centre.

Although ITEC headquarters are situated in central East London, its largest training programme, the Lower Primary Initiative, focuses on teachers and pupils in rural schools.

PROGRAMME DESCRIPTION

ITEC's Lower Primary Initiative provides non-accredited courses for unqualified and under qualified primary school teachers wishing to improve their competencies in the classroom. These teachers are from urban, peri-urban and rural areas (including farm schools) in the Greater East London and ex-Ciskei areas. The LPI is conducted over 2 or 3 years, during which time eight modules are completed. The pace at which teachers progress from one module to the next depends on them mastering certain competencies and conducting self-evaluations which are integral to the programme's methodology.

The LPI is made up of workshops, which cover 30% of the programme, and field support (70%). Each year workshops covering at least three modules, are convened. Ten hours are spent on each module in a two-day workshop, held at the beginning of each of the first three terms of the school year. Workshops focus on learner-centred methodologies, individual and classroom organisational skills, and classroom management skills. They are followed by field support, carried out by programme facilitators during the next six weeks of the term. Facilitators visit teachers who have participated in the programme at least three times a year and focus on monitoring visits, demonstration lessons, and the effective and optimum use of teaching materials. Each monitoring visit lasts approximately 90 minutes which aggregates to 4,5 hours per annum.

A two-day workshop, with a total duration of 10 hours, on how to make teaching aids together with appropriate scripting is held during the winter vacation in July. During the fourth term, teachers are brought together to a needs/expectations forum which contributes towards the planning for the following year. Community members (governing councils and PTAs) are also invited to be part of the forum.

OBJECTIVES AND EXPECTED OUTCOMES OF THE LOWER PRIMARY INITIATIVE

The objectives and expected outcomes of certain modules which comprise the LPI are:

Objective 1:

Create a child-centred learning environment by:

- ◆ developing an attitude of enthusiasm, creativity, innovation and resourcefulness amongst teachers;
- ◆ facilitating the restructuring of the learning environment so as to promote learning practices of good quality;
- ◆ developing knowledge and skills which would enable teachers to effectively organise and manage physical space within the classroom environment;
- ◆ promoting the optimum use of all human and physical resources within and outside the classroom.

Expected Outcome

- ◆ *Teachers will have a clear knowledge and the practical competence to plan, set up and manage a well organised and structured learning environment, in the context in which they find themselves.*

Objective 2:

To implement group teaching strategies by:

- ◆ helping teachers understand why group teaching should be implemented in the lower primary standards;
- ◆ providing teachers with knowledge on how children operate in groups, while still maintaining their individuality;
- ◆ discovering ways of using these strategies across the curriculum;
- ◆ viewing group teaching as a methodology which assists the teacher in coping with individual needs and abilities of the pupils, especially in large classes.

Expected Outcomes

- ◆ *Teachers will have a thorough knowledge of the rationale behind group teaching.*
- ◆ *Teachers will be able to implement and manage group teaching by providing a variety of differentiated learning opportunities / occupations for children within ability groups.*
- ◆ *Children will experience more meaningful learning opportunities as a result of the teachers ability to implement group teaching.*

3. To conduct continuous evaluation by:

- ◆ promoting the process of continuous evaluation (where the teacher evaluates the “whole” child) by observing and recording information in a methodical manner on a regular basis;
- ◆ showing that continuous evaluation is a more realistic and accurate reflection of the child’s ability than formal examinations are;
- ◆ advocating group teaching as an appropriate methodology in conducting and managing continuous evaluation;
- ◆ demonstrating the implementation of the process in a practical manner.

Expected Outcomes

- ◆ *Teachers will gain a clear understanding of the process of continuous evaluation and why it is more beneficial than formal examinations to the child and teacher.*
- ◆ *Teachers will have practical guidelines on how to implement the process of continuous evaluation effectively.*
- ◆ *Teachers will be alert and aware of every child within the classroom situation, and the level at which they are working in all subjects across the curriculum.*

The purpose of the evaluation was to assess the relationship between participation by teachers in the ITEC LPI in-service teacher training (INSET) programme and instructional practices and learner participation variables associated with high quality. The knowledge gained will be useful in showing impact to potential donors and departments of education, and to inform decision making related to in-service teacher training. Programme co-ordinators will also be able to use the results of the assessment to examine their curricula and training methods in their efforts to enhance teaching and learning. In addition, there is a formative dimension to this evaluation in that it provides information on programme development.

Evaluation Questions

The study addressed the following questions:

TEACHERS WITH DIFFERENT LEVELS OF TRAINING

1. In what ways do teachers with different levels of training (including no ITEC training) teach differently?
2. In what ways do learners in classrooms taught by ITEC trained teachers at different levels of training participate differently?
3. In what ways do the classroom environments of teachers with different levels of ITEC training differ?

WHAT ARE THE EFFECTS OF OTHER VARIABLES SUCH AS, EDUCATION, TEACHING EXPERIENCE, AGE, ETC. ON TEACHING, LEARNING AND THE CLASSROOM LEARNING CLIMATE?

COLLABORATION BETWEEN IEQ AND ITEC

The LPI co-ordinator, facilitators and curriculum developers worked in collaboration with the IEQ Project in designing and conducting the evaluation. Collaboration, capacity building and mutual learning were emphasised and responsibilities delineated for all participants. A chronology of the collaborative process is outlined in Appendix A.

INSTRUMENTATION

The IEQ worked collaboratively with ITEC and five other NGOs who provide INSET training, to develop all the instruments used in the study (see Table 1 below). Following the table is a brief description of each instrument detailing the process employed in its development .

Table 1:
Instruments Used in the Evaluation

<i>Instrument</i>	<i>Information Source</i>	<i>Purpose</i>
Teacher profile	Teachers	Demographic information on teachers
Classroom resources and environment checklist	Class observers and teachers	Adequacy of classroom facilities, availability and use of resources
Classroom observation protocol	Class observers	Classroom teaching and learner participation
Teacher interview schedule	Teachers	Programme impacts, perceptions of training
Teacher questionnaire	Teachers	Programme impacts, perceptions of training
Facilitator questionnaire	Programme facilitators	Programme impacts, perceptions of training

1. Classroom Observation Protocol

Samples of various classroom protocols were reviewed after which a draft observation instrument was developed, reviewed by the LPI facilitators and finalised by the IEQ. The draft instrument was based on the key expectations of the LPI, formulated into an observation component and defined from the ideal to the unacceptable. Eleven components, with four variations to each component, were identified. The components in the observation instrument (Appendix D) are:

- Use of a Variety of Teaching Methods
- Use of Materials by Learners
- Use of Materials by Teacher to Enhance Learning
- Grouping of Learners
- Learner Work in Groups
- Critical and Creative Thinking Activities
- Questioning Skills
- Learners Asking Questions
- Teacher Feedback to Learners
- Use of Language to Improve Learner Understanding
- Opportunities for Learners

2. Classroom Environment and Resources Checklist

The purpose of the Classroom Environment and Resources Checklist (Appendix E) was to provide crucial information on the physical features of the classroom as well as the availability and use of materials and other resources. Although the availability and use of most or some of the items on the checklist, for example electricity, is beyond the control of the teachers, the information gained here contributes to a better understanding of the environment in which the teachers and pupils function. ITEC asserts that appropriate and relevant materials and resources, if properly displayed and utilised by both the teacher and the pupil, impacts heavily on the quality of teaching and learning and helps create a child-centred learning environment.

3. Teacher Questionnaire (including a Teacher Profile) and Interview Schedule

The purpose of the teacher questionnaire and interview schedule was to collect data on the teachers' perceptions of the LPI, the ease and difficulty experienced in the programmes implementation, and its impact on the pupils. ITEC provided a framework of questions from which a draft questionnaire and interview schedule were developed by the IEQ. The IEQ team finalised these instruments after ITEC reviewed them. Both the questionnaire and the interview permitted teachers to express their opinions and thoughts on issues (Appendices C, E, F and G) which ITEC considers pertinent to the improvement and continuation of the programme.

4. Facilitators' Questionnaire¹

The purpose of this instrument was to elicit responses from the LPI facilitators about their perceptions of the impact of the programme on teachers, pupils and classroom environments. The questionnaire also provided information on the facilitators' views about what hinders implementation of the programme by ITEC-trained teachers. The responses that the facilitators provided are based on their experiences and observations in the field.

SAMPLE

The primary sources of information for the study were teachers who had participated in the LPI and the observations made during on-site classroom visits. A total of 50 teachers in thirty-five primary schools in the Greater East London and ex-Ciskei were selected by ITEC to participate in the impact assessment study. Teachers were randomly selected from a list of accessible schools. Once a geographically diverse group of schools was selected, the teachers in those schools, who comprised the sample, were categorised by level of ITEC training. The sample of teachers included those who had received one-, two- and two years plus the pilot phase of the programme, as well as teachers who had never received any ITEC training. The teachers who participated in the LPI were classified as Levels 1, 2 and 3 respectively, while the teachers without ITEC training were classified as Level 0. Baseline data on teachers' instructional practices and learner participation before ITEC intervention were not available, therefore a comparison group of 10 teachers without ITEC training was selected from schools situated in the same areas in which ITEC operates. Levels of training are shown and defined in Table 2.

¹ Appendix H

Table 2:

Teacher Sample
n = 50

<i>Level of Training</i>	<i>Number</i>	<i>Definition</i>
Level 0	10	Has not participated in any of the programmes
Level 1	13	Participation in the programme for one year (1994) and then dropped out
Level 2	12	Participation in the programme for two years (1994-95)
Level 3	15	Participation in the programme for more than two years (since the pilot phase -1991)

The demographics of the sample are included in the Findings section.

DATA COLLECTION

The data collection team consisted of seven ITEC LPI facilitators and an IEQ researcher. The IEQ researcher held a half-day orientation session with the facilitators in June 1995 with the purpose of explaining the reasons for conducting the study, and what it entailed.

The responsibility for gaining access into the schools to collect data rested with the ITEC facilitators. Preparation for data collection began in July 1995 by facilitators visiting schools personally to gain permission from the principals to observe classrooms since most of the schools, particularly on farms and in rural areas, cannot be reached by telephone. All logistical arrangements had been completed by the beginning of August 1995 and all data were collected by the end of that month.

Data collection training occurred over two sessions. The first session, in July 1995, consisted of training on how to use the observation protocol. Since this instrument would inform what was taking place in the classroom, it was necessary to ensure that all data collectors observed classrooms from the same perspective. Observation training consisted of viewing a video recorded during a science lesson in a primary school and writing down a running commentary of what was being observed. Data collectors then rated the observation protocol based on their commentaries. All ratings had to be accompanied by explanations stating reasons for choosing a particular rating (variation) for the observation component. This was followed by reviewing and discussing ratings and rationales until consensus was reached. Once all the data collectors felt comfortable with the

group decisions and a workable level of consistency was achieved, the video-taped lesson was viewed again and the instrument re-rated. Again, rationales were required so that a common understanding was developed. This final activity verified consistency and assisted in raising the levels of confidence of the data collectors in using the instrument. It also helped them to understand that it was the impact of the LPI, not their facilitation, that was being assessed. This calmed initial concerns expressed by facilitators that they were being directly evaluated.

The final training session, on interviewing skills, took place just prior to data collection. Using the interview schedule developed for the study, facilitators practised various interviewing techniques. Data collection training ended with an overview of all the instruments that were used.

Data were collected from fifty classrooms which were visited once. The IEQ researcher accompanied the facilitators to each of the different types of schools in which the ITEC-trained teachers taught. This was particularly important because it provided the IEQ researcher with a clearer understanding of the context in which ITEC operates. In debriefing meetings held after the observations, the team shared, discussed, and resolved problems and experiences encountered in the field.

DATA ANALYSIS

The data analysis of the numerical data, also called quantitative data, was done using a variety of descriptive and inferential statistics. Descriptive statistics are those that are used to summarise and describe the data and include frequency counts (such as the number of women and the number of men), means and percentages. Inferential statistics are those used to determine if differences among, or relationships between groups are “real” as opposed to a matter of chance. The levels of significance or p (probability) value indicates the “odds” that a difference or a relationship is “real”. For example, $p = .04$ means that the chances that the difference between groups is “real” is 96 out of 100. Statistical significance indicates if a difference is real; but not if it is meaningful or important – that judgement is made by the researcher, the programme staff and the reader.

Inferential statistics used in this report include F tests (or analysis of variance) and Chi-square tests. F tests are used to determine if differences among two or more groups are real. Post hoc tests such as the Scheffé are used with F tests. They are used to determine if any two groups over which the F test is done are different from each other.

A Chi-square test is used to determine if two groups are different from each other. For example, a Chi-square test would be used to determine if there were disproportionately more women in the trained group of teachers than in the group without training.

The descriptive and inferential statistics were done primarily using SPSS (Statistical Package for the Social Sciences).

Open-ended data, also called qualitative data, were read and broken into categories and where appropriate, a search was made for patterns. Open-ended data were also used to support or refute the results of the quantitative data.

The results of the study are presented as follows:

- the relationship between levels of training and teaching, learning, and the classroom learning climate;
- the relationship between other variables such as education, experience, age, type of school, and teaching, learning and the classroom learning environment.

Findings will be examined in the light of the evaluation question posed earlier which focused specifically on the relationship between participation by teachers in ITEC teacher training (INSET) programmes and instructional practices and learner participation variables associated with high quality:

In what ways, if any, do teaching and learning environments of teachers with different levels of training (including no training) differ in terms of:

- use of a variety of teaching methods
- use of materials by learners
- use of materials by teacher to enhance learning
- physical arrangement of learners into groups
- learners engaged in group work
- critical and creative thinking activities
- questioning skills
- learners ask questions
- teacher feedback to learners
- use of language to improve learner understanding
- opportunities for learners

The findings reported here are based on classroom observations and ratings by observers of the 11 components of teaching and learning. As described earlier, the components were developed collaboratively with ITEC and other NGOs who provide INSET training, as important outcomes of their training programmes at the classroom level. These components are in line with findings of recent research on quality teaching (Ellett, Loup & Chauvin, 1991; Lockheed & Verspoor, 1991).

Findings from classroom resource and environment checklists, teacher questionnaires and interviews and facilitator questionnaires are reported to supplement the classroom observations.

Traditional teacher evaluation instruments focus primarily on the teacher, whereas, in the classroom observation instrument used in this study, observers were required to consider teaching, learning, and the classroom learning climate when making rating decisions. Teachers were rated from "1" to "4" on each component, where "1" represents "traditional" (teacher-centred) instruction and "4" represents the "ideal" outcome based on current knowledge of the teaching and learning process.

Performance of teachers for individual components of teaching and learning are examined in terms of the differences among the levels of training. Examples of descriptions from classroom observations and the views of teachers and ITEC programme facilitators are included to illustrate the findings.

DEMOGRAPHIC PROFILE OF THE SAMPLE

Teachers

Fifty teachers were selected according to the amount of exposure to ITEC training, including no ITEC training. All the teachers in the sample are women. This could be explained by the fact that more female than male teachers usually teach at primary schools. Table 3 provides a breakdown, by the levels of training, of the sample by academic and professional qualifications, age, teaching experience and type of school. Results of Chi-square tests indicate that there were no differences in each of these areas by the levels of training.

Table 3:

Teacher Profile by Level of Training

	<i>Level 0</i> <i>(n = 10)</i>	<i>Level 1</i> <i>(n = 13)</i>	<i>Level 2</i> <i>(n = 12)</i>	<i>Level 3</i> <i>(n = 15)</i>	<i>Total</i> <i>(n = 50)</i>
<i>Academic Qualifications</i>					
Std. 10	2(20%)	8(62%)	10(83%)	9(60%)	29(58%)
Std. 9	0	0	0	1(7%)	1 (2%)
Std. 8	0	0	1(8%)	3(23%)	4(8%)
Std. 6	0	0	0	1(7%)	1 (2%)
<i>Professional Qualifications</i>					
PTC	5(50%)	7(54%)	5(42%)	6(40%)	23(46%)
SPTD	2(20%)	1(8%)	0	1(7%)	4(8%)
PTD	1(10%)	1(8%)	1(8%)	2(13%)	5(10%)
JPTD	0	1(8%)	3(25%)	1(7%)	5(10%)
LPTC	0	0	1(8%)	1(7%)	2(4%)
HPTC	0	0	1(8%)	2(13%)	3(6%)
NPH	0	0	0	2(13%)	2(4%)
<i>Age</i>					
under 25 years	2(20%)	0	1(8%)	0	3(6%)
26-30 years	0	2(15%)	3(25%)	0	5(10%)
31-35 years	1(10%)	1(8%)	1(8%)	1(7%)	4(8%)
36-40 years	2(20%)	4(31%)	0	2(13%)	8(16%)
41-45 years	3(30%)	4(31%)	1(8%)	2(13%)	10(20%)
46 years and over	2(20%)	2(15%)	6(50%)	9(60%)	19(38%)
<i>Years of Teaching Experience</i>					
0-2 years	3(30%)	0	2(17%)	0	5(10%)
3-5 years	0	2(15%)	0	1(7%)	3(6%)
6-10 years	0	1(8%)	0	1(7%)	2(4%)
11-20 years	5(50%)	8(62%)	3(25%)	6(40%)	22(44%)
over 20 years	2(20%)	2(15%)	7(58%)	7(47%)	18(36%)
<i>Type of School</i>					
Farm	0	1(8%)	1(8%)	6(40%)	8(16%)
Urban	5(10%)	4(31%)	3(25%)	5(33%)	17(34%)
Rural	5(10%)	8(62%)	8(67%)	4(27%)	25(50%)

Thirty-four (68%) of teachers provided information on their academic qualifications. Most of the teachers (58%), irrespective of the level of training, had completed high school.

Eighty-eight percent of the teachers have a recognised professional qualification. Twenty-three out of the 50 teachers (46%) have Primary Teaching Certificates (PTCs) and five teachers each (29%) have Primary Teacher's Diplomas (PTDs) and Junior Primary Teacher's Diplomas (JPTDs).

Most of the teachers, irrespective of the level of training, were over 30 years of age (82%).

The majority of the teachers (80%) have more than 10 years of teaching experience of which 22 teachers (44%) have 11-20 years of experience and 18 teachers (36%) have over 20 years of teaching experience. Ten teachers have teaching experience of 10 years and less.

Twenty-five classrooms (50%) are in rural areas, 17 classrooms (34%) are in urban areas and 8 classrooms (16%) are in farm schools. Since ITEC focuses on teachers in rural areas, it is not unusual that half the teachers observed are located in rural areas. Only eight farm-based schools were visited because of time and financial constraints involved in reaching these schools.

PHYSICAL RESOURCES

Observers were required to note whether each of the specific items listed in the instrument were present in the classrooms visited. The table below provides a breakdown of the availability of physical resources according to levels of training. A vast majority of the classrooms, irrespective of the teachers' level of training, had adequate resources. Although statistically there is no difference among the groups², on closer examination, teachers with ITEC training appear to have slightly more of these resources.

In Table 4, the availability and use of resources and materials for each level of training is recorded. This information provides a background to the findings which relate to learners and teachers using materials.

² The analysis of variance of the resources listed in the table by the level of training indicate that no two levels are significantly different at the 95% confidence level. The mean number of resources available for each level is: Level 0=6.8; Level 1=8.2; Level 2=6.8; Level 3=8.7.

Table 4:

Number and Percentage of Teachers with Available Resources by Training Level
(n=50)

	<i>Level 0</i> <i>n=10</i>	<i>Level 1</i> <i>n=13</i>	<i>Level 2</i> <i>n=12</i>	<i>Level 3</i> <i>n=15</i>
<i>adequate seating space</i>	7 (70%)	13 (100%)	11 (91.7%)	15 (100%)
<i>adequate writing surface</i>	7 (70%)	13 (100%)	11 (91.7%)	15 (100%)
<i>chair and table for teacher</i>	7 (70%)	11 (84.6%)	11 (91.7%)	15 (100%)
<i>adequate lighting</i>	9 (90%)	13 (100%)	12 (100%)	14 (93.3%)
<i>adequate space between desks</i>	7 (70%)	12 (92.3%)	11 (91.7%)	13 (86.7%)
<i>comfortable ventilation and temperature</i>	8 (80%)	13 (100%)	12 (100%)	15 (100%)
<i>cheerful classroom</i>	7 (70%)	12 (92.3%)	2 (100%)	14 (93.3%)
<i>cemented or tiled floor</i>	8 (80%)	12 (92.3%)	12 (100%)	14 (93.3%)
<i>absence of noise</i>	8 (80%)	11 (84.6%)	10 (83.3%)	15 (100%)

Table 5 :
Availability and Use of Materials by Level of Training

<i>Materials and Resources</i>	<i>Materials Used Number of Teachers with Materials</i>					<i>Materials Used Number of Teachers that used Materials</i>				
	<i>level 0 n = 10</i>	<i>level 1 n = 13</i>	<i>level 2 n = 12</i>	<i>level 3 n = 15</i>	<i># and % of teachers who had materials available</i>	<i>level 0 n = 10</i>	<i>level 1 n = 13</i>	<i>level 2 n = 12</i>	<i>level 3 n = 15</i>	<i># and % of teachers who used materials</i>
textbooks	8	5	10	13	36 (72%)	3	4	3	1	11 (31%)
exercise books	10	11	10	15	46 (92%)	2	5	8	12	27 (59%)
wall charts	6	11	11	15	43 (86%)	0	4	8	10	22 (51%)
chalkboard, chalk	9	12	12	15	48 (96%)	2	12	11	14	39 (81%)
visual aids	5	7	8	14	34 (68%)	0	3	7	13	23 (68%)
reading materials	8	11	11	14	44 (88%)	1	1	7	5	14 (32%)
self-made materials	6	11	12	14	43 (86%)	0	6	10	9	25 (58%)
other materials	4	6	8	10	28 (56%)	1	3	5	6	15 (54%)
	<i>Mean number of materials available</i>					<i>Mean number of materials used</i>				
	5.6	9.3	10.3	13.8		1.0	3.2	4.6	4.7	

As shown from the Classroom Environment and Resource Checklist (results in Table 5), the majority of teachers, irrespective of levels of training, had basic materials and resources available to them. There is no marked difference in terms of resources (textbooks) that are supplied by the government. However, there is a noticeable difference in the availability of resources; for example wall charts, visual aids and self-made materials; in ITEC-trained teachers' classrooms compared to classrooms of non-ITEC trained teachers. This could be attributed to ITEC supplying templates of materials to teachers as part of the LPI and teachers being encouraged to use their initiative to make and adapt materials to suit their contexts.

In teacher questionnaires, ITEC trained teachers either agreed or strongly agreed that there were sufficient materials available to them, whereas Level 0 teachers stated that materials were insufficient. When ITEC trained teachers were asked to indicate the extent of usefulness of resources (textbooks, teacher guidebooks and learner worksheets), all reported that they found these resources to be either helpful or very helpful. The data indicated that ITEC-trained teachers used wall charts and self-made and ITEC supplied materials instead of textbooks which the department of education supplied.³ Although 72% of teachers had access to textbooks, only 31% utilised them. It is interesting to note that, amongst trained teachers, as the level of training increases the number of teachers who utilise textbooks decreases.

However, the same situation does not seem to apply to Level 0 teachers of which only three used textbooks during the observation and none used teacher initiated materials. It may be that even though these teachers have the materials available, they do not have the knowledge and skills to use them.

The use of exercise books, which indicate that learners are involved in the lesson, is more evident in classrooms of teachers with higher levels of ITEC-training. Again, the percentage of use of exercise books in Level 0 teachers classrooms is small. Although 88% of the teachers had reading materials available to them, only 32% used them during observations. This could be attributed to the fact that other subjects, for example mathematics, might have been taught during some of the observations. Another interesting observation is that although 86% of teachers had wall charts, only 51%, mainly Level 2 and 3 teachers, used them during the observation lesson.

³ In the teacher questionnaire, 85,7% of the teachers reported that the department of education provided textbooks.

During the observations, it was reported that although materials and resources were available, they were not used optimally. Thus, there does not seem to be a clear link between the availability and the use of materials.

INSTRUCTIONAL PRACTICES BY LEVEL OF TRAINING

Overall Instructional Practices

The mean observation ratings of the eleven components, according to the levels of ITEC training (including no ITEC training), indicate that teachers with higher levels of training were rated higher for the overall performance on the observation instrument⁴.

Results of an analysis of variance of the overall mean ratings by the levels of training indicate that there is a significant difference at the .05 confidence level between the mean observation ratings of teachers with no ITEC training and those who have had two years (Level 2) and more than 2 years of ITEC training (Level 3). However, there is no significant difference between the overall mean ratings of Level 1 and Level 0 teachers. This finding is in line with the belief expressed by ITEC that marked differences in teacher behaviour are more likely to be observed after at least two years of training.

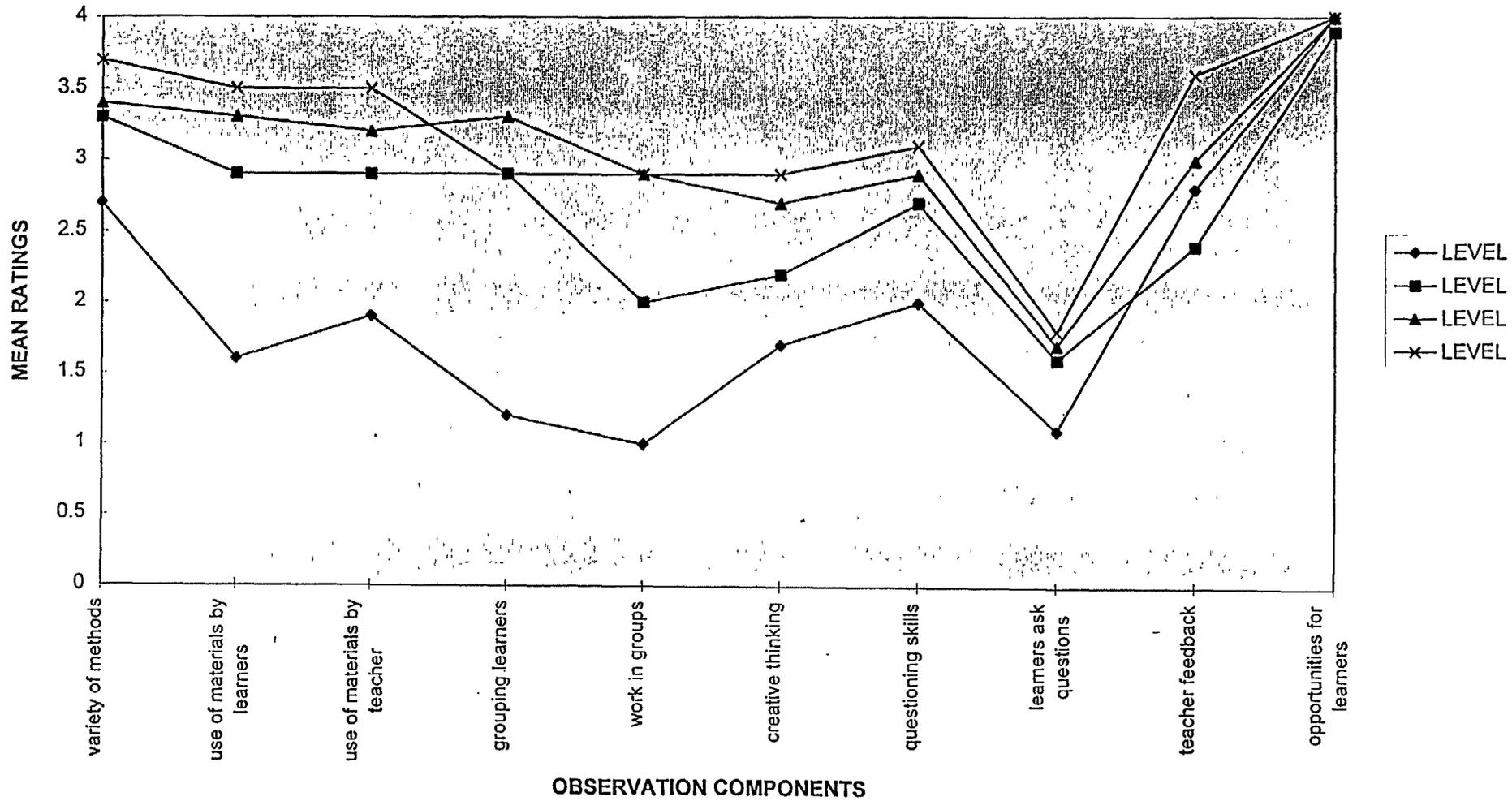
From the mean ratings for each component by the levels of training, depicted in Figure 1, it is evident that the mean ratings of Level 0 teachers were generally much lower than the mean ratings of the three groups of ITEC-trained teachers. Also, mean ratings increase as the level of ITEC training increases. This is evident for nine of the ten components plotted on the graph. These developmental increases imply that improved instructional practices ensure greater success in creating interactive teaching and learning environments.

The findings on the overall teacher ratings suggest that interactive learning and teaching behaviours, described as the “ideal” in the observation instrument, are likely to be observed in classrooms of teachers with two and more years of ITEC training.

⁴ Mean ratings: Level 0=2.2; Level 1=2.7; Level 2=3.0 and Level 3=3.2

Figure 1

MEAN OBSERVATION RATINGS BY LEVEL OF TRAINING



RESULTS OF INDIVIDUAL OBSERVATION COMPONENT RATINGS BY LEVEL OF TRAINING

The findings for individual components show that significant differences exist, between each of the levels of ITEC training and those without ITEC training, with respect to the physical arrangement of learners into groups and the use of materials by both teachers and learners. Furthermore, the results show that Level 3 teachers performed significantly differently to teachers without ITEC training in terms of using a variety of teaching methods, facilitating critical and creative thinking skills, and questioning skills. Level 3 teachers also differ significantly from Level 1 teachers with regard to providing feedback. There are components, such as learners working in groups, where the mean ratings of teachers at the different levels of training do not differ significantly from each other.

Component 1:

Use Of A Variety Of Teaching Methods

Finding:

Teachers with more than two years of ITEC training (Level 3) are more likely to use a larger variety of teaching methods which involve learners.

This component focuses on the use of a variety of teaching methods to involve learners and enhance learning. Traditional teachers rely on “chalk and talk” teaching strategies to dispense information to pupils who play the role of passive recipients. ITEC training encourages and teaches teachers to use teaching methods which require active learner participation. Ability group teaching, discussion, role-playing and problem solving are examples of methods that actively involve learners in learning tasks.

Results of an ANOVA and a post hoc (Scheffé) test on the use of a variety of teaching methods that involve learners in relation to the level of ITEC training, indicate that there is a significant difference between teachers with more than two years of ITEC training (Level 3) and teachers who received no ITEC training ($F=6.61$, $p=0.00$).

With training, the mean rating increased from 2.7 (Level 0) to 3.7 (Level 3).⁵ This finding confirms ITEC’s belief that behaviours such as using a variety of teaching methods that involve learners, require teachers to change their attitudes towards teaching and learning before they are able to

⁵ Mean ratings: Level 0=2.7; Level 1=3.3; Level 2= 3.4; Level 3=3.7

effectively change their instructional practices. ITEC also states that attitudinal changes in behaviour are more likely to occur after at least two years of training. Furthermore, teachers with more training have more time and opportunities to practice the new methods.

Table 6 shows the number of teachers rated by the level of training for the component “Using a Variety of Teaching Methods by Level of Training”.

Table 6:
Number and Percentage of Teachers Rated Using a Variety of
Teaching Methods by Level of Training
(n=50)

<i>Level of Training</i>	<i>4</i> <i>teacher uses more than 2 teaching methods, all involve learners</i>	<i>3</i> <i>teacher uses 1 or 2 methods that involve learners</i>	<i>2</i> <i>teacher uses 1 or more methods that do not involve learners</i>	<i>1</i> <i>teacher uses 1 method that does not involve learners</i>
Level 0 (n=10)	1 (10%)	6 (60%)	2(20%)	1 (10%)
Level 1 (n=11)	4 (36.4%)	7 (63.6%)	0	0
Level 2 (n=12)	4 (33.3%)	8 (66.7%)	0	0
Level 3 (n=15)	11 (73.3%)	4 (26.7%)	0	0

Chi-square = 20.44 , p = 0.02⁶

Further analysis indicates that only one out of ten Level 0 teachers used more than two instructional strategies that involved all learners, whereas all of the ITEC-trained teachers, irrespective of the level of training, used instructional strategies that involved learners. Thirty percent (three out of ten) Level 0 teachers used teaching strategies that did not involve learners. Most ITEC trained teachers used at least one teaching method that involved learners while 73.3% of Level 3 teachers used more than two teaching methods that involved all learners.

Observers also noted that teachers who received ITEC training used a variety of teaching methods which included the question and answer, self-discovery, problem-solving and discussion methods. It was further noted that teachers without ITEC training (Level 0) relied on teacher-centred methodologies, such as, lecturing (“telling method” and “teacher teaches from the chalkboard”).

⁶ There is a significant difference in the use of a variety of teaching methods between ITEC-trained teachers and Level 0 teachers.

Teacher perceptions on teaching methods were elicited from the questionnaires and interviews. The teacher questionnaire asked teachers to rate, on a scale of 1 to 3, how often (rarely, sometimes, most of the time) they used the following methods.

- Hands-on activities
- Pupil centred-teaching
- Group work activities
- Independent work by your pupils
- Active participation by pupils

The majority of teachers responded that they used the above-mentioned methods either sometimes or most of the time. Chi-square tests for differences in groups found that no one group differed from another for each of these teaching methods.⁷ This finding indicated that teachers, irrespective of whether they participated in the ITEC training programme or not, perceived themselves as using teaching methods that involve learners. The difference between this perception and what was actually observed could be attributed to different teacher and observer perceptions of which teaching methods involve learners. Furthermore, the duration of the observation lesson was approximately 30 minutes whereas the questionnaire inquiry referred to the general use of teaching methods.

When ITEC-trained teachers were asked how they had changed as teachers since participating in the training programme, 13 out of 15 referred to the change in their methods of teaching; as one teacher reported, “I don’t rely on the chalkboard anymore”.

As the greater (70%) part of the LPI training consists of monitoring and classroom support visits, facilitators were asked to report how often they conducted these visits and what they observed in terms of teaching methods. It was reported that teachers were visited at least once, and sometimes twice, a term. Three of the seven ITEC facilitators observed that teachers used “new teaching methods,” “teachers now teach with a purpose,” and “they implement ideas shared at the workshops.”

⁷ Hands-on Activities:	Chi-square = 8.7	p=0.20
Pupil-centred Teaching	Chi-square = 12.1	p=0.06
Group work Activities	Chi-square = 9.8	p=0.14
Independent Work by Pupils	Chi-square = 3.8	p=0.70
Active Participation by Pupils	Chi-square = 6.3	p=1.00

From the classroom observations and teacher perceptions, it appears that teachers with two or more years of ITEC training are more likely to use teaching strategies which involve learners, than teachers with lesser or no ITEC training.

Component 2:

Use of materials by learners

Finding:

Learners of each level of ITEC trained teachers made significantly greater use of materials than learners of teachers without ITEC training.

This component focuses specifically on the use of materials by learners and the degree to which children have an opportunity to manipulate learning materials. The use of real objects and manipulatives (for example, stones used as counters in mathematics) helps children to develop concepts related to numbers, words, ideas, etc. This is an aspect of active involvement which promotes learning.

This component of the classroom observation instrument measured the degree to which learners used materials. The mean ratings for each level of training⁸ indicate an increase in learner use of materials with increased training. The results of an ANOVA and post hoc (Scheffé) test also show that there is a significant difference between each of the ITEC trained groups of teachers and the group of teachers with no ITEC training ($F=10.9$, $p=0.00$). Thus, ITEC training, at any level, is associated with the manner in which learners manipulate materials. This component (use of materials by learners) is an integral part of the LPI module that deals with the creation of a learner-centred learning environment.

Table 7 details the number of teachers' classrooms in which pupils used materials for each variation of the component.

⁸ Mean ratings : Level 0=1.6; Level 1= 2.9; Level 2=3.3 and Level 3=3.5.

Table 7:

Number and Percentage of Teachers Rated on Learners
Using Materials by Level of Training
(n=50)

<i>Level of training</i>	<i>4</i> <i>learners share and</i> <i>all manipulate</i> <i>materials</i>	<i>3</i> <i>most learners share</i> <i>and manipulate all</i> <i>materials</i>	<i>2</i> <i>some learners</i> <i>manipulate while</i> <i>others watch</i>	<i>1</i> <i>none of the learners</i> <i>manipulate</i> <i>materials</i>
Level 0 (n=10)	1(10%)	0	3 (30%)	6 (60%)
Level 1 (n=11)	4 (36.4%)	3 (27.3%)	3 (27.3%)	1 (9.1%)
Level 2 (n=12)	5 (41.7%)	6 (50%)	1 (8.3%)	0
Level 3 (n=15)	11 (73.3%)	1 (6.7%)	3 (20%)	0

Learners in most of the classrooms of Level 0, generally do not manipulate materials. This may be related to these teachers' opinions that there are insufficient materials available. Another interesting observation is that learners share and manipulate materials, in groups or pairs, in at least half of the ITEC trained teachers classrooms compared to 0% of non-ITEC teachers classrooms. Observers also mentioned that learners manipulated a number of materials, such as charts, puzzles, counters, flash-cards and number-squares. As one observer noted: "...pupils collected materials outside the school premises. When in the classroom they all share what they collected and everybody touch, feel and smell" (the lesson was about spring). During interviews with ITEC trained teachers, only five referred to the pupils' sharing materials and one teacher said that pupils could touch the materials as they were strategically displayed at the pupils' eye-level. Many teachers did, however, refer to the "children having access to the teaching aids". During monitoring/classroom visits by ITEC facilitators, it was noted that pupils knew how to manipulate materials.

This finding suggests that pupils in classrooms of ITEC trained teachers perform differently to pupils of teachers without this training.⁹ However, there is no differentiation in learners manipulating materials amongst any of the ITEC trained groups of teachers.

⁹ Chi-square=34.2, p=0.00 - there is a significant difference in the degree to which learners of ITEC-trained teachers and teachers without ITEC training used materials.

Component 3:

Use of materials by teacher to enhance learning

Finding:

Teachers at each level of ITEC training used more kinds of materials to enhance learning than teachers without ITEC training.

This component reflects the use of materials by the teacher in ways that enhance learning. The effective use of teaching materials such as the chalkboard, charts, pictures implies the enhancement of learner interest and involvement in the learning task, and subsequent learning. The classroom observation instrument measured the number of materials teachers utilised to enhance learning.

The classroom observation instrument measured the extent to which teachers used materials to enhance learning. The use of materials by teachers was measured on a scale ranging from “1” (no materials/materials do not enhance learning) to “4” (uses more than two kinds of materials that enhance learning).

Table 8 provides the number and percentage of teachers who used materials as described for each variation of the component.

Table 8:

Number and Percentage of Teachers Rated
Using Materials by Level of Training
(n = 50)

<i>Level of training</i>	<i>4</i> <i>uses more than 2</i> <i>kinds of materials</i> <i>that enhance</i> <i>learning</i>	<i>3</i> <i>uses 2 kinds of</i> <i>materials that</i> <i>enhance learning</i>	<i>2</i> <i>uses 1 kind of</i> <i>material that</i> <i>enhances learning</i>	<i>1</i> <i>uses no materials/</i> <i>materials do not</i> <i>enhance learning</i>
Level 0 (n = 10)	0	2(10%)	5(50%)	3(30%)
Level 1 (n = 13)	4(31%)	5(38%)	3(23%)	1(8%)
Level 2 (n = 12)	6(50%)	2(17%)	4(33%)	0
Level 3 (n = 15)	9(60%)	5(33%)	1(7%)	0

Table 8 indicates that the level of training (extent of involvement) in the programme is associated with the number of materials teachers use that enhance learning. Chi-square tests¹⁰ indicate that ITEC-trained teachers were rated significantly higher than teachers without ITEC training. Ten percent of Level 0 teachers use two kinds of materials that enhance learning while 50% of Level 0 teachers use one kind of material that enhance learning. It is noteworthy that 30% of Level 0 teachers use either no materials or materials that do not enhance learning. A different picture emerges with ITEC-trained teachers. All ITEC-trained teachers, except one Level 1 teacher, used materials that enhance learning. As teachers' training increase, they are more likely to use more materials that enhance learning.

Results of an ANOVA and post hoc (Scheffé) test of this component indicate that there is a significant difference between all the ITEC trained groups of teachers and the group of teachers without ITEC training ($F=8.2, p=0.0002$). However, there is no significant difference between the ITEC-trained groups in respect of the number of materials used. Once again there is a rise in the mean rating from Level 0 (no training) to Level 3 (more than 2 years)¹¹. The mean rating for teachers with more than 2 years of ITEC training (3.5) is nearly double that of teachers without any ITEC training (1.9). Level 3 teachers used a significantly greater number of materials than Level 0 teachers.

In questionnaire responses, 93% of ITEC-trained teachers expressed that programme materials were either helpful or very helpful. Information, from interviews with ITEC trained teachers, shows that materials play an important role in their change from traditional to learner-centred teachers. Six of the 15 teachers interviewed stated that they joined the ITEC programme because they were attracted to the "bright and colourful materials." Since becoming involved in the LPI, many teachers said that their skills in making and effectively using teaching aids improved. Teachers also found the programme materials to be relevant and they were able to adapt them "to suit all subjects and standards."

This finding suggests that teachers with ITEC training, irrespective of level, are likely to use more materials that enhance learning.

¹⁰ Chi-square=20.66, $p=0.01$

¹¹ Mean ratings : Level 0=1.9; Level 1= 2.9; Level 2=3.2 and Level 3=3.5.

Component 4:

Physical arrangement of learners into groups.

Finding:

Teachers at each level of ITEC training arranged learners into groups significantly differently to teachers without ITEC training.

This component focuses on how teachers organise the seating arrangements of learners for instruction. Traditional teachers typically "teach to" the entire class. The potential for learner participation and active involvement in learning increases when teachers arrange learners in either pairs or small groups. Groups of learners allow for interest-, need- and ability differences. For the purposes of understanding the presentation of this finding, it is important to note that the variations of this component do not accurately reflect ITEC's concept of arranging learners into groups. For ITEC, it is the physical arrangement of learners in groups that is central to the creation of a child-centred learning environment. Whether groups are flexible, permanent or whether or not learners have assigned roles is not specifically stressed by ITEC.

Table 9 provides the number and percentage of teachers who arranged their learners into groups.

Table 9:

Number and Percentage of Teachers who Physically Arranged Learners into Groups (n = 50)

<i>Level of training</i>	<i>4 uses flexible groups and assigned roles</i>	<i>3 uses flexible groups without assigned roles</i>	<i>2 uses permanent groups with or without assigned roles</i>	<i>1 whole class only (no groups)</i>
Level 0 (n = 10)	0	0	2(20%)	8(80%)
Level 1 (n = 13)	8(61.5%)	0	1(7.7%)	4(30.8%)
Level 2 (n = 12)	7(58.3%)	3(25%)	1(8.3%)	1(8.3%)
Level 3 (n = 15)	7(46.7%)	0	7(46.7%)	1(6.7%)

Table 9 shows the frequency distribution for each variation of the component. However, to determine the number of teachers at each level of training which arranged their learners into

groups, Levels 1, 2 and 3 will be collapsed. Teachers without ITEC-training (80%) usually taught the class as a whole, while 85% of ITEC trained teachers (34 out of 40) arranged learners in groups. It is also interesting to note that the number of ITEC trained teachers who arranged their learners in groups increased with more training. Chi-square tests¹² indicate that there is a significant difference between ITEC-trained teachers and teachers without ITEC training in terms of arranging learners into groups.

Results of further analysis also indicate that there is a very significant difference between each of the ITEC trained groups and the group of teachers without ITEC training ($F=7.9$, $p=0.00$)¹³. There is, however, no significant differences between trained teachers from Level 1, 2 or 3. The mean ratings of teachers with Level 1 and 3 training are the same (2.9). Level 2 has the highest mean rating (3.3) which is more than double that of teachers without ITEC training (1.2).¹⁴

This component provides a picture of the physical arrangement of the learners which suggests that ITEC trained teachers are more likely to arrange their learners into groups than teachers without ITEC training.

Component 5:

Learners involved in group work

Finding:

There is no significant difference in learners involvement in group work irrespective of the teachers' level of training.

Where the previous component focused on the physical arrangement of learners, this component focuses on what learners actually do in groups. When teachers are initially introduced to the notion of grouping, they often arrange learners in groups but continue to teach the class as a whole. Also, learners continue working on individually assigned tasks without interacting with other pupils. However, when groups of learners discuss questions, share ideas, solve problems and create things together, the potential to enhance learning is maximised.

¹² Chi-square=32.49, $p=0.00$

¹³ Analysis of variance and post hoc (Scheffe) tests

¹⁴ Mean ratings : Level 0=1.2; Level 1= 2.9; Level 2=3.3 and Level 3=2.9

Observation ratings for this component applied only to classrooms in which learners were arranged into groups. From the previous component it was found that 36 teachers (72%), irrespective of their level of training, arranged learners in groups.

The analysis of variance for this component by the level of training indicates that no two levels of training are significantly different at the 95% level of confidence. Learners of a very small number of ITEC-trained teachers discussed problems, questions and activities as a group. There is an increase in mean ratings from Level 0 to Levels 2 and 3.¹⁵ This finding suggests that increased exposure to the LPI, even after the first level of training, increases the likelihood of teachers involving learners in group work.

Table 10 provides the number and percentage of teachers who were rated for learners working in groups.

Table 10:
Number and Percentage of Teachers Rated for Learners Work in Groups
(n=35)

<i>Level of training</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>
	<i>groups of learners discuss problems, questions and activities</i>	<i>group of learners with limited interaction</i>	<i>only one or two learners in a group interact</i>	<i>learners sit in groups but work as individuals</i>
Level 0 (n=2)	0	0	0	2(100%)
Level 1 (n=9)	1(11%)	3(33%)	0	5(56%)
Level 2 (n=10)	4(40%)	3(30%)	1(10%)	2(20%)
Level 3 (n=14)	6(42%)	4(29%)	0	4(29%)

From Table 10 it is clear that learners involved in group work were observed only in the classrooms of ITEC-trained teachers. Of the 34 ITEC-trained teachers who had grouped their learners, only 11 teachers had their pupils in totally interactive groups. An observer who rated one of the Level 3 teachers a "4", noted that "...learners were interacting in the teaching group- one would give a word and the other build a sentence using that word. In the other group a leader gave each child a self-corrective card with a word and they had to look for the picture that matches the

¹⁵ Mean ratings : Level 0=1.0; Level 1=2.0; Level 2=2.9 and Level 3=2.9

word ... in order to draw another word. When they had difficulty they went to the phonic frieze and looked for the word.” Thirty percent of the teachers had learners involved in group work but with limited interaction. More than half of the Level 1 teachers (56%) arranged their learners in groups but taught the class as a whole. In both classes taught by teachers without ITEC training, pupils sat in groups but worked as individuals. As one observer in a Level 0 teacher’s classroom noted, “children in groups, read from their readers and word-cards individually”.

In interviews with 15 ITEC-trained teachers across the three levels, 10 teachers stated that they had gained “knowledge of group teaching”. More than half of the trained teachers interviewed stated that pupils work more independently and are more confident in expressing themselves. During classroom visits, facilitators found that pupils behaved more confidently and those involved in group work enjoyed it.

This finding suggests that teachers are very likely to be equating the physical arrangement of learners into groups with learners being involved in group work.

Component 6:

Learners involved in activities that show critical and creative thinking

Finding:

Ratings of teachers with more than two years of ITEC training were significantly higher than teachers without ITEC training on learners’ involvement in activities that show critical and creative thinking skills.

When learners are involved in discussions, problem solving and creative activities, critical and creative thinking skills are necessary. Complex and even simple learning tasks involve questions that require critical consideration, or perhaps, indicate that problems need solutions. Deliberate teaching methods that stimulate development of thinking skills are required.

There is an increase in the mean ratings as the level of training increases.¹⁶ Despite this trend, the results of the analysis of variance indicates a significant difference only between Level 3 (more than two years of ITEC training) and Level 0 (no ITEC training) teachers ($F=5.6, p=0.002$). Level 1 and 2 teachers have higher mean ratings than Level 0 teachers but the differences are not significant. It is

¹⁶ Mean ratings : Level 0=1.7; Level 1=2.2; Level 2=2.7 and Level 3=2.9

noteworthy that the difference in the mean ratings between teachers with 2 years of training (2.7) and more than two years of training (2.9) is negligible.

Table 11 shows the number and percentage of teachers by level of training rated for this component.

Table 11:
Number and Percentage of Teachers Rated on Learners' Involvement in
Activities that Show Critical and Creative Thinking Skills
(n=50)

<i>Level of training</i>	4 <i>learners involved in discussions and problem solving and/or creative activities</i>	3 <i>learners involved only in sharing ideas</i>	2 <i>learners involved in teacher-directed activities</i>	1 <i>teacher lectures, learners listen to teacher</i>
Level 0 (n=10)	0	0	7(70%)	3(30%)
Level 1 (n=13)	2(15%)	0	9(70%)	2(15%)
Level 2 (n=12)	4(33%)	0	8(67%)	0
Level 3 (n=15)	3(20%)	8(53%)	4(27%)	0

Observers recorded that all Level 0 and 85% of Level 1 teachers either directed all activities, or lectured while pupils listened passively. As one observer of a Level 0 teacher noted, "The teacher told pupils what to do, i.e. count in 2s, 3s, 5s and asked them various multiplication tables – as a whole class. Her group lesson (same for each group) included questions which were teacher directed and closed." None of the Level 2 and 3 teachers lectured during the observation.

Most of the learners of Level 3 teachers (73%) were observed to be engaged in activities which seemed to stimulate the development of thinking skills, though only 20% of these teachers taught in a manner that involved learners in discussions, problem solving and creative activities. It is interesting that a larger percentage (33%) of Level 2 teachers than Level 3 teachers involved learners in discussions, problem solving and creative activities. However, a majority of the Level 2 teachers (67%) directed activities. Chi-square tests results indicate that there is a significant difference between groups for this component.¹⁷

¹⁷ Chi-square=32.5 p=0.00

In one of the Level 3 teacher's observations it was noted that "during group teaching the children were involved in activities of problem solving and creativity by using concept toys, for example, blocks, to build squares, triangles etc." The same teacher reported during the interview "before my pupils used to wait and listen to the teacher but now children have a say in the classroom."

This finding seems to correspond with ITEC's belief that the higher rated variations of this component would only be evident in teachers with two or more years of ITEC training.

Component 7:

Questioning skills used by the teacher

Finding:

There is a significant difference in the questioning skills of teachers with more than two years of ITEC training compared to teachers without ITEC training.

Traditional teachers often rely on close-ended questions with one correct answer or simply ask learners to regurgitate information. Interactive teaching and learning requires that teachers question effectively so that they can capture pupils' attention, arouse their curiosity, and focus their attention on important parts of the subject matter. The use of a variety of types of questions, including open-ended questions that have a spectrum of correct answers, allows teachers to probe for learners' understanding.

The comparison of mean ratings for questioning skills used by teachers indicates that there is a significant difference between Level 3 teachers (with more than 2 years of ITEC training) and Level 0 teachers (without ITEC training) ($F=4.3$, $p=0.01$). The mean ratings increase with the level of training.¹⁸

Table 12 shows the number of teachers for each level of training who were observed using each of the four variations of teachers' questioning skills described.

¹⁸ Mean ratings : Level 0=2.0; Level 1=2.7; Level 2=2.9 and Level 3=3.1

Table 12:

Questioning Skills
n = (50)

	4	3	2	1
<i>Level of training</i>	<i>teacher asks a variety of open-ended questions that probe for learners' understanding</i>	<i>asks mostly close-ended questions and 1 or 2 open-ended questions</i>	<i>asks simple recall questions only or close-ended questions</i>	<i>teacher asks no questions</i>
Level 0 (n = 10)	0	0	10(100%)	0
Level 1 (n = 13)	4(31%)	2(15%)	6(46%)	1(8%)
Level 2 (n = 12)	3(25%)	5(42%)	4(33%)	0
Level 3 (n = 15)	6(40%)	5(33%)	4(27%)	0

Chi-square = 19.2; p = 0.02¹⁹

Twenty-four teachers (nearly half the number observed), irrespective of the level of training, asked mostly close-ended questions. Table 12 shows that all the Level 0 teachers asked simple recall questions only or close-ended questions. Observers noted examples of these kinds of questions which included, "how many 10 cent pieces make R1?" and "Sipho is tall. Who is short?" Only one teacher, a Level 1 teacher, did not ask any questions during the observations.

A small number of ITEC-trained (13 out of 40) teachers asked a variety of open-ended questions that probe for learners' understanding. It is also interesting that there is a percentage increase by each level of training. The data indicate that Level 3 teachers are more likely to ask open-ended questions. Many of the observers noted that those teachers who probed for learners' understanding made pupils think before they could answer. As one observer noted, learners' thinking skills were tested: for example, the teacher said, "Double 90, minus by 50 - how did you get 140? Explain."

When ITEC-trained teachers were asked about the skills they gained since participating in the LPI, only one specifically mentioned questioning skills. Although none of the facilitators referred to teachers' questioning skills in the questionnaires, one of them noted on the observation instrument that "this teacher needs a lot of training in this (questioning) sphere."

¹⁹ The results of the Chi-square test indicates that there is a significant difference between groups.

The finding of this component is in line with ITEC's belief that teachers with more than two years of ITEC training should be able to effectively pose questions to learners that would probe for their understanding. ITEC facilitators are of the opinion that Level 3 teachers are comfortable with learner discussions which usually emerge when open-ended questions are asked.

Component 8:

Learners asking questions.

Finding:

There was no significant difference in learners asking questions based on the teachers' level of training.

Encouraging learners' questions and contributions sends a steady, positive message that learners are an important part of the teaching and learning environment. The role of learners in traditional, teacher-centred classrooms has been to passively receive information that teachers dispense. Traditionally, when pupils questioned the teacher, it was perceived as a lack of respect and teachers felt that "proper" discipline was being compromised. Thus, learners were reluctant to ask questions or show creative thinking without continued encouragement from the teacher in a learning environment where the learner feels "safe".

A comparison of group mean ratings for learners asking questions indicates that no two groups are significantly different at the 95% level of confidence. The mean rating for each level of training²⁰ was below 2.0, which implies that the vast majority of learners either asked simple questions only or did not ask any questions.

Table 13 shows the number and percentage of teachers with each level of training whose pupils were observed asking questions as described.

²⁰ Mean ratings : Level 0=1.1; Level 1=1.6; Level 2=1.7 and Level 3=1.8

Table 13:

Number and Percentage of Teachers Rated by Level of
Training for Learners Asking Questions
n = (49)

Level of Training	4 <i>learners ask questions which show creative thinking even without teacher encouragement</i>	3 <i>learners ask questions that show their thinking only when teacher encourages</i>	2 <i>learners ask simple questions only</i>	1 <i>learners ask no questions</i>
Level 0 (n=9)	0	0	1(11%)	8(89%)
Level 1 (n=13)	1(8%)	2(15%)	1(8%)	9(69%)
Level 2 (n=12)	1(8%)	1(8%)	3((25%)	7(59%)
Level 3 (n=15)	1(7%)	2(13%)	5(33%)	7(47%)

It is clear that learners of the majority of teachers, 31 out of 49 (63%) irrespective of their level of training, did not ask any questions during the observations. However, the incidence of learners asking questions expands with increased training. Learners in only 8 out of 40 ITEC-trained teachers classrooms asked questions that showed creative thinking, with or without teacher encouragement. Three teachers, one at each level of ITEC training, had learners ask questions, without teacher encouragement, which showed creativity. Slightly more than half (53%) of the Level 3 teachers had learners asking questions, albeit mainly simple ones. Observers noted that most of the simple questions asked by learners sought subject matter clarifications.

Other comments which accompanied the teachers' ratings imply that despite many teachers being rated "1" (learners ask no questions), the lessons were interactive. As one observer noted, "Learners did not ask questions but their participation in the lesson showed understanding." A number of other comments suggested that learners were not familiar with asking questions. Facilitator comments on learners not asking questions, such as; "this is a problem in most schools", "an area still being worked on at workshops" and "learners are not used to this kind of teaching yet"; indicate that ITEC is aware of this limitation.

In general, learners in most of the classrooms observed, displayed weak questioning skills which suggest that traditional norms with regard to questioning still prevail. The level of confidence that the teacher transfers to her pupils, and cultural connotations may be factors that underpin this

finding. Culturally, it is considered disrespectful for children (learners) to question adults (teachers) and this norm still seems to prevail in most of the classrooms visited.

Component 9:

Teacher feedback to learners

Finding:

There is a significant difference between teachers with more than two years of training (Level 3) and teachers with one year of training (Level 1) on giving feedback to learners.

This component refers to feedback provided by teachers to learners' correct and/or incorrect responses. A key element in guiding and enhancing learning is providing feedback to learners about their performances and mastery of learning objectives. Effective feedback includes suggestions for improving performance and encouragement of subsequent effort. During the process of learning, feedback helps shape pupils' learning and broadens their understanding and mastery of content.

The mean rating of teachers with more than two years of ITEC training (Level 3) is significantly different to teachers with one year of ITEC training (Level 1) ($F=3.5$, $p=0.02$). An interesting finding is that teachers without any ITEC training were rated higher than teachers with one year of ITEC training but the difference is not statistically significant.²¹

Table 14 shows the number of teachers for each level of training who were observed using each of the four variations of teachers providing feedback to learners.

²¹ Mean ratings: Level 0=2.8; Level 1=2.4; Level 2= 3.0 and Level 3=3.6

Table 14:

Number and Percentage of Teachers' Rated on Providing Feedback to Learners
(n=49)

<i>Level of training</i>	<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>
	<i>gives feedback about correct and incorrect responses in a manner that encourages further effort</i>	<i>gives feedback to incorrect responses only, in a manner that encourages further effort</i>	<i>gives feedback about correct responses only</i>	<i>gives no feedback/ gives feedback that discourages further effort</i>
Level 0 (n=9)	3(33%)	3(33%)	1(11%)	2(22%)
Level 1 (n=13)	3(23%)	2(15%)	5(39%)	3(23%)
Level 2 (n=12)	5(42%)	3(25%)	3(25%)	1(8%)
Level 3 (n=15)	11(73%)	2(13%)	2(13%)	0

The majority of the teachers provided some form of feedback to learners' responses. However, only a small number of teachers in Levels 0,1, and 2 provided feedback to both correct and incorrect responses, in a manner that encourages further effort, compared to 73% of Level 3 teachers who did the same. This suggests that teachers with more training are likely to provide effective feedback to learners. An observer who rated a teacher "4", commented that "the teacher smiled, encouraged learners to applaud correct answers and acknowledged right parts of incorrect answers".

Very few teachers, across the training levels (including no ITEC training), did not give any feedback or provided feedback that was discouraging. A higher percentage of Level 0 teachers (33%) compared to 23% of Level 1 teachers gave feedback to correct and incorrect responses in a manner that encouraged further effort. This finding suggests that after only one year of training, teachers tend not to provide effective feedback to learners. However, teachers with more than one year of training were found to be more likely to provide positive feedback to correct and incorrect responses.

Component 10:

Use of language to improve learner understanding.

Finding :

Teachers across the levels of training do not use language differently.

All lessons in Sub-Standard A (grade1) to Standard 2, which comprise the lower primary phase of schooling, are conducted in Xhosa, the home language of the learners. From Standard 1, learners are taught English as a subject and home language is often needed to facilitate understanding of the subject matter. The teachers' approach is a good indication of his/her sensitivity to both the difficulties experienced by learners and the need to become proficient in English.

The findings with regard to the teachers' use of language to improve learner understanding is inconclusive because of the number of observations recorded. The recording of variations for this component had a proviso that, only when the medium of instruction of the observed lesson was English, did the component have to be rated. The number of responses (24 out of 50) indicates that the medium of instruction in more than half the classrooms observed was Xhosa.

Component 11:

Participation opportunities for learners.

Finding:

There is no significant difference in the manner in which girls and boys are afforded opportunities to participate among any levels of training.

This component focuses on gender equity in the classroom. Actively soliciting all pupils' involvement sends a strong message that all pupils are important participants in the classroom learning environment. Opportunities to participate include response opportunities (who gets "called on"), designation as group leaders, and more subtle verbal and non-verbal interactions between learners and teachers.

The analysis of this component indicates that, irrespective of levels of training, teachers gave both girls and boys equal opportunities to participate. However, it is important to note that the variations of the component did not specify what these opportunities were.

INSTRUCTIONAL PRACTICES BY INTENSITY OF TRAINING

The findings confirm that, with respect to ITEC-trained teachers, initial changes that pertain to the physical organisation and management of the teaching and learning environment are a prerequisite to advanced instructional practices which become evident with increased training.

The findings support the notion that “change is a process, not an event” (Hall and Hord, 1987). If three to five years is the estimated time to implement substantial educational innovations, as cited by researchers of the change process (Hall and Hord, 1987; Hord, Rutherford, Huling-Austin, and Hall, 1987; Fullan, 1991, 1993), then it is expected that teachers need time and training, including feedback and coaching, to make the complex shifts in behaviours represented by these teaching and learning practices.

Table 15 provides a summary of the findings which indicate that instructional practices are associated with the length and intensity of the training.

Table 15:

Instructional Practices By Intensity of Training

<i>Basic Training</i>	<i>Intermediate Training</i>
<ul style="list-style-type: none"> • arrangement of learners into groups • use of materials by teachers to enhance learning • use of materials by learners 	<ul style="list-style-type: none"> • use of a variety of teaching methods • questioning skills by teacher • teacher facilitating creative and critical thinking • teacher feedback to learners

Basic training is associated with changes in the teaching and learning environment, for example, arrangement of learners into groups. Intermediate training contributes to behavioural changes in teachers which are evident in, for example, interaction with learners. The components which relate to changes in teacher practices that affect learner behaviour, namely, learners asking questions and the engagement of learners in group work were not evident. This may be attributed to teachers being inadequately equipped to effect these changes and also to traditional perceptions that children “be seen and not heard”. It should be noted that by the end of 1996, the first cohort of teachers are expected to complete the LPI.

Although the overall findings indicate that teachers with two years of ITEC training (Level 2), and teachers with two years training and the pilot phase of the programme (Level 3) are rated significantly higher than teachers without ITEC training, the Level 3 teachers were rated significantly higher for all the individual instructional practices listed under basic and intermediate training. This indicates that Level 3 teachers have succeeded in translating their increased training in practical terms.

INFLUENCE OF OTHER VARIABLES ON TEACHERS' INSTRUCTIONAL PRACTICES

The influence of teaching experience, experience teaching the present grade, age, academic and professional qualifications, and the type of school on teachers' observed instructional practices is examined to determine whether and to what extent they may be affecting variables.

Teaching Experience

The results of an analysis of variance of the mean observation ratings by the number of years of teaching experience indicate that there is no statistical difference between the number of years of teaching experience and what was observed in the classroom.

Number of years of experience teaching the present grade

Results of an analysis of variance indicate that there is no significant difference between the observed learning and teaching behaviours of the teachers and the number of years of experience teaching the present grade.

Age

The results of an analysis of variance once again show that there is no significant difference between the ages of the teachers and their mean observation ratings.

Academic and professional qualifications

Results of an analysis of variance indicate that there is no significant difference between the observed learning and teaching behaviours of this sample and their academic and professional qualifications.

Type of school

The results of the analysis of variance indicate that there is no significant difference between the teachers' instructional practices and whether they taught in farm, urban or rural schools.

These results indicate that the teachers in each level of training were not different from each other in these areas.

1. ITEC trained teachers, from all levels, succeeded in creating a child-centred learning environment which, according to the LPI, refers to the effective organisation and management of physical space and the optimum use of resources within and outside the classroom. Three components of the observation instrument, namely, “use of materials by learners”, “use of materials by teacher to enhance learning” and “grouping of learners” measured these standards. Teachers at each level of ITEC training were rated higher than teachers without ITEC training on these components.
2. Teachers who have received more than two years of ITEC training (Level 3) were rated higher in terms of the use of a variety of teaching methods, facilitating creative activities in learners and questioning skills used by the teacher. There are clear indications that mean ratings for these components increase with more training. This finding implies that teachers with initial training should improve at these instructional practices with more training.
3. Teachers at Level 3 training performed significantly differently to Level 1 (one year of training) teachers with regard to providing effective feedback to learners. This is the only observation component where mean ratings of Level 0 teachers were higher than Level 1 teachers. There is nothing in the data that suggests reasons for this anomaly and the LPI staff have not been able to provide an explanation either. Possible explanations could be the manner in which these two groups of teachers approach feedback to learners or an outcome of the sampling procedure.
4. Teachers did not perform differently with respect to learners being engaged in group work and learners asking questions. With regard to learners being engaged in group work, it can be concluded that ITEC-trained teachers in particular, may be experiencing difficulties in practising the objectives of the group teaching module. The mean rating for each level of training for the component relating to learners asking questions is less than two out of a possible four. These teachers are not able to differentiate between physically arranging learners into groups and facilitating learners to interactively work in groups. In terms of learners asking questions, the trend, irrespective of level of training, is that children are hesitant to ask questions and teachers are not fostering this activity. Both of these components have a bearing on changes in teachers’ attitudes towards learners and as such, it can be concluded that either

the training programme did not focus on this aspect or that teachers have not altered their perceptions, therefore their observed behaviour did not reflect this.

5. The findings are inconclusive with regard to those components related to the use of language to improve learner understanding and participation opportunities for learners. The former component was largely inappropriate for most of the observations because the medium of instruction for the lower primary phase is mother-tongue language, which in this instance is Xhosa. The variations of the latter component (participation opportunities for learners) were too general and did not effectively discriminate gender equity.
6. No significant differences in overall mean ratings were found among teachers based on age, teaching experience, education and type of school. These factors do not explain the higher ratings for instructional practices and learner participation received by ITEC trained teachers.

PROGRAMME DEVELOPMENT

1. The results of this impact evaluation highlight the quality of in-service training provided by ITEC as an essential component of an overall strategy for teacher development and support in the Eastern Cape Province. ITEC could offer their approach to in-service training as a model to various institutions in the province. The findings of the study confirm that the training of teachers as “change agents” is developmental and at least three years of training is needed to transform the classroom into an interactive teaching and learning environment.
2. All levels of ITEC training succeeded in providing teachers with skills to effectively organise and manage the physical space in the classroom and to optimally use materials within and outside the classroom. Three components of the observation instrument measured these standards, viz., “physical grouping of learners”, “use of materials by learners” and “use of materials by teachers that enhance learning”. Training modules which cover these areas appear to be ITEC’s strength. It is from this perspective that it is recommended that these modules be offered to other institutions for example, other INSET non-governmental organisations and, possibly, Colleges of Education.
3. The training of teachers to improve the manner and extent in which “learners work in groups” as a specific teaching methodology needs to be re-assessed by ITEC. It is possible that ITEC trainees have a knowledge of the rationale underlying group teaching but they may experience difficulty in putting it into practice. It is suggested that ITEC re-examine the contents and training strategies of the group teaching module. There may be a need to increase the number of demonstration lessons specifically relating to this module during classroom monitoring and support visits. ITEC could explore the idea of identifying and enlisting district leader teachers to provide supplementary support.
4. Competencies which teachers with two and more years of training achieved should be introduced during initial training and reinforced as training progresses. This would also give teachers more time to practice newly acquired skills.

5. ITEC should consider integrating the development of communication skills of learners in all the modules of the training programme. Both learners and teachers should be made to feel comfortable talking to, and questioning each other. This could, for example, have a positive effect in addressing the issue of learners not being accustomed to asking questions.

INSTITUTIONALISATION

1. ITEC's LPI facilitators may consider revising and possibly adding other components to the classroom observation instrument for the purpose of monitoring and evaluating the programme on an on-going basis. The inclusion of a classroom observation instrument into ITEC's existing monitoring instruments may contribute to a more systematic internal monitoring and evaluation system.
2. Appropriate instruments, which assess learner performance, should be developed in collaboration with teachers to measure the impact of the training programme. Both the teacher and ITEC would be able to assess, on an on-going basis, whether the training is really enhancing teaching and learning in the classroom. Continuous assessments would also provide vital formative information for programme development.
3. ITEC should continue on-going negotiations with other teacher training institutions in the province to achieve accreditation, although careful thought and consideration should be given to teachers' professional qualifications criteria.

POLICY IMPLICATIONS

1. ITEC in-service training for teachers has shown to be very successful in upgrading teaching and learning where it "counts" – at the classroom level. Strategies to upgrade education must address the professional and development needs of the present teaching staff, many of whom are unqualified or underqualified. Investing in in-service training programmes such as ITEC creates the potential to build the capacity of teachers who are already at work in the majority of South Africa's classrooms.
2. ITEC has a holistic and context-appropriate lower primary INSET model and/or modules to offer the Department of Education in the Eastern Cape Province.

3. The LPI team have the experience and capacity to contribute innovative ideas to provincial education policy in areas such as curriculum development and implementation, resource provision, delivery, teacher support and monitoring of primary education programmes.
4. Monitoring instruments, or aspects of these instruments, developed by ITEC could be offered as a starting point to the Provincial Department of Education for use by circuit inspectors and subject advisors who are responsible for teacher appraisals.

FUTURE STUDIES

The following questions have been identified for possible further research studies.

1. What is the impact of the LPI on learner performance?
2. In what ways do monitoring and evaluation visits by facilitators add value to the implementation of the LPI?
3. To what extent does the socio-economic status of school affect the implementation of the LPI?
4. In what ways do instructional practices of teachers who have completed the LPI differ from those without training?

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Appendix A: Chronology of IEQ/ITEC Collaboration

Appendix B: ITEC Personnel Involved in the Evaluation Process

Appendix C: Teacher Profile

Appendix D: Classroom Observation Instrument

Appendix E: Classroom Environment and Resource Checklist

Appendix E: Teacher Interview Protocol

Appendix F: Teacher Questionnaire for ITEC-trained Teachers

Appendix G: Teacher Questionnaire for Teachers without ITEC Training

Appendix H: Lower Primary Initiative Facilitator Questionnaire

Appendix A:

Chronology of IEQ/ITEC Collaboration

CHRONOLOGY OF ITEC/IEQ COLLABORATION

- April 1995** ITEC LPI Project Leader met with IEQ team and other INSET grantees to discuss the impact assessment purpose and process
- ITEC Project Leader provided ITEC programme description and classroom effects intended as a result of ITEC training
- ITEC Project Leader, other INSET grantees, IEQ team members, and consultants met to draft impact assessment design for individual organisations and for the INSET group
- Impact Assessment design reviewed by ITEC and other INSET grantee organisations
- ITEC Project Leader provided lists of schools, trained teachers and ITEC facilitators
- May 1995** IEQ team and ITEC and other INSET grantee programme co-ordinators designed instruments to measure impact of training programmes on pupils and teachers, based on intended programme outcomes:
- Classroom Observation Instrument
 - Teacher Questionnaire
 - Classroom Environment and Resource Checklist
 - Facilitator Questionnaire
 - Teacher Interview Protocol
- IEQ team, ITEC Project Leader, and other INSET grantees met to review INSET individual and group designs and core instruments
- June 1995** U S consultants reviewed instruments
- IEQ team trained ITEC Project Leader and other INSET grantees in the use of data collection instruments and processes
- ITEC Project Leader and programme facilitators identified teachers and sites for data collection
- IEQ team member and ITEC Project Leader met with programme facilitators to discuss the evaluation design and process and to review instruments for data collection
- July 1995** IEQ team member trained ITEC programme facilitators in use of data collection instruments
- August 1995** ITEC LPI facilitators collected data in schools
- IEQ team member visited school sites with programme facilitators

October 1995 U S consultants and IEQ team organised and

Nov 1995 ITEC Project Leader met with IEQ team *mnitial* findings and conduct further analysis

January 1996 IEQ team wrote draft report

IEQ team member met with ITEC Project *ift* report and provide additional information and ins:

IEQ team further analysed data

March 1996 IEQ team member solicited feedback from *on* formats for presentation of findings

IEQ team incorporated feedback from *IT* *ntees* into final evaluation report

IEQ team wrote final report

May 1996 IEQ team presented final evaluation report *T* grantees

Appendix B:

EC Personnel Involved in the Evaluation Process

ITEC Personnel Involved in the Evaluation Process

Noeleen Barry

Noluthando Saki

Alletta Fredericks

Nomiki Mnguni

Nomonde Pikashe

Nocawa Mangcu

Mandisa Muluse

Nontuthulezo Solani

Robyn Hewson

Lorna van Coller

Jacqeline Klem

Appendix C:

Teacher Profile

Appendix D:

Classroom Observation Instrument

**IMPROVING EDUCATION QUALITY PROJECT (IEQ)
INSET IMPACT ASSESSMENT STUDIES
CORE CLASSROOM OBSERVATION INSTRUMENT**

School Code: Date of observation: Lesson start time:
 Teacher code: Observer name: Lesson end time:
 Standard: Subject observed: Number of learners:

Component 1: Use of a Variety of Teaching Methods

4	3	2	1
Teacher uses more than 2 teaching methods, all involve learners	Teacher uses 1 or 2 methods that involve learners	Teacher uses 1 or more methods that do not involve learners	Teacher uses one method that does not involve learners

Description:.....

Component 2: Use of Material by Learners

4	3	2	1
Learners share and all manipulate materials in groups or pairs	Most learners share and manipulate all material	Some learners manipulate others watch	None of the learners manipulate materials

Description:.....

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Component 3: Use of Materials by Teacher to Enhance Learning

4
Uses more than 2 kinds of materials that enhance learning

3
Uses 2 kinds of materials that enhance learning

2
Uses one kind of material that enhances learning

1
Uses no materials/ materials do not enhance learning

Description:.....
.....
.....

Component 4: Grouping of Learners

4
Uses flexible groups and assigned roles

3
Uses groups flexible without assigned roles

2
Uses permanent groups with or without assigned roles

1
Whole class only (no groups)

Description:.....
.....
.....

Component 5: Learner Work in Groups (skip Component 5 if answer to Component 4 is "1")

4
Groups of learners discuss problems, questions and activities

3
Group of learners with limited interaction

2
Only one or two learners in a group interact

1
Learners sit in groups but work as individuals

Description:.....
.....
.....

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Component 6: Critical and Creative Thinking Activities

4	3	2	1
Learners involved in discussions and problem solving and/ or creative activities	Learners involved only in sharing of ideas	Learners involved in teacher-directed activities	Teacher lectures, learners listen to teacher

Description:.....
.....
.....

Component 7: Questioning Skills

4	3	2	1
Teacher asks a variety of questions, including open-ended questions that probe for learners' understanding	Asks mostly close-ended questions and 1 or 2 open-ended questions	Asks simple-recall questions only or close-ended questions	Teacher asks no questions

Description:.....
.....
.....

Component 8 : Learners Asking Questions

4	3	2	1
Learners ask questions which show creative thinking even without teacher's encouragement	Learners ask questions that show their thinking only when teacher encourages	Learners ask simple questions only	Learners ask no questions

Description:.....
.....
.....

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Component 9: Teacher Feedback to Learners

4	3	2	1
Gives feedback about correct and incorrect responses in a manner that encourages further effort	Gives feedback about incorrect responses only, in a manner that encourages further effort	Gives feedback about correct responses only	Gives no feedback/gives feedback in a manner that discourages further effort

Description:.....
.....
.....

Component 10: Use of Language to Improve Learner Understanding (applies only in English medium lessons)

4	3	2	1
Integrates English and home-language consistently	Uses code-switching only when majority does not seem to understand	Communicates only in English even when learners do not seem to understand/ discourages use of home language	Uses home-language only

Description:.....
.....
.....

Component 11: Opportunities for Learners

4	3	2
Boys and girls have equal opportunity to participate	Only boys/ Only Girls get opportunity to participate	Learners have no opportunities to participate

Description:.....
.....
.....

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Appendix E:

Classroom Environment and Resource Checklist

**IMPROVING EDUCATION QUALITY PROJECT (IEQ)
INSET IMPACT ASSESSMENT STUDIES**

CLASSROOM RESOURCE AND ENVIRONMENT CHECKLIST

INSET Organisation:
School Name: Teacher name
Subject: Std/Level
Number of learners Girls Boys

CLASSROOM ENVIRONMENT

Write YES or NO Please give details where necessary.

1. Adequate seating space for all students _____
2. Adequate writing surface for pupils _____
3. Chair and table for teacher _____
4. Adequate lighting _____
5. Adequate space for movement between desks _____
6. Ventilation and temperature is comfortable _____
7. Cheerful classroom _____
8. Floor is cemented or tiled _____
9. Noise from outside is disruptive _____

COMMENT

CLASSROOM RESOURCES

V= visible but not used U = used in this lesson
A= not visible but available N = not available

Please indicate where relevant. Check with teacher if you are not sure.

1. prescribed textbooks _____
2. exercise books _____
3. wall charts _____
4. chalkboard, duster & chalk _____
5. power points/electricity _____
6. visual teaching aids _____
7. other reading materials _____
8. self made posters or materials _____
9. other material _____

COMMENT

Appendix F:

Teacher Interview Protocol

**IMPROVING EDUCATIONAL QUALITY (IEQ) PROJECT
ITEC INSET IMPACT ASSESSMENT STUDY
TEACHER INTERVIEW SCHEDULE**

1. What made you join the ITEC Lower Primary Initiative programme?
2. How has the ITEC changed you as a teacher and as a person?
3. What skills have you gained most out of this programme?
4. Do you think your teaching has changed since you joined the programme? How?
5. How has your classroom environment changed?
6. How have the pupils in your class changed?
7. How have you adapted the ITEC materials to suit your particular situation/ environment/ teaching strategies?
8. Do you think that the monitoring visits were of benefit to you? Why do you say this?
9. Do you think that the monitoring visits were not beneficial? Why do you say this?
10. What, if anything, prevented you from implementing the LPI programme in your classroom?
11. What would you like to see changed in the programme?
12. What are your overall impressions about the programme?

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Appendix G:

Teacher Questionnaire for ITEC-trained Teachers

**IMPROVING EDUCATIONAL QUALITY PROJECT (IEQ)
INSET IMPACT ASSESSMENT STUDIES
INSET TEACHER QUESTIONNAIRE: TRAINED OR PROJECT TEACHERS**

Teacher code: _____
School code: _____

INSET Project: _____
Name of data collector: _____

Date: _____

PART I

1. Please indicate to what degree you agree or disagree with the following statements about your teaching as a result of INSET training in the last 1 to 3 years. For each statement, circle the number that best represents how you feel.

1 = strongly disagree 2 = disagree 3 = unsure 4 = agree 5 = strongly agree

	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
1.1 You have gained more ideas and skills of teaching	1	2	3	4	5
1.2 Your confidence in your ability to teach has improved	1	2	3	4	5
1.3 You are now motivated to teach	1	2	3	4	5
1.4 Your knowledge of the subject has improved	1	2	3	4	5
1.5 You have not experienced any changes	1	2	3	4	5
1.6 Please provide and rate two other examples, that are not mentioned above,	1	2	3	4	5
that show that your teaching has changed					
(i) _____	1	2	3	4	5
(ii) _____	1	2	3	4	5

2. What do you see as three main aims of the INSET programme you have been attending?
(i) _____
(ii) _____
(iii) _____

3. Please indicate how often you use the following methods since you received INSET programme training

1 = rarely 2 = sometimes 3 = most of the time

		Rarely	Sometimes	Most of the time
3.1 Hands-on activities	1	2		3
3.2 Pupil centred-teaching	1	2		3
3.3 Group work activities	1	2		3
3.4 Independent work by your pupils	1	2		3
3.5 Active participation by pupils	1	2		3

4. What specific changes, if any, have you observed in the behaviour of your pupils as a result of the training you received from the INSET programme?

- (i) _____
- (ii) _____
- (iii) _____

5. Please indicate the degree to which your principal is supportive of your efforts to implement what you have learned from the INSET programmes. Circle the number that represents your principal's supportiveness.

Very unsupportive Unsupportive Supportive Very supportive

1 2 3 4

6. Below are some reasons that could make it difficult for you to try out ideas you learned from the INSET programme in your classroom. Please indicate which situations apply to you. For each statement, circle the number that indicates most closely how you feel.

1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree

	Strongly disagree	Disagree	Agree	Strongly agree
6.1 You teach too many classes	1	2	3	4
6.2 Class sizes are too big	1	2	3	4
6.3 There is not sufficient time to try the ideas	1	2	3	4
6.4 There is not sufficient materials available	1	2	3	4
6.5 You do not have the interest and motivation	1	2	3	4
6.6 There is not enough support in the school	1	2	3	4
6.7 Students are not ready for these ideas	1	2	3	4
6.8 You do not understand what is taught at workshops	1	2	3	4

Please write other reasons that are not listed above that you feel are important?

6.9 _____	1	2	3	4
6.10 _____	1	2	3	4

7. What changes, if any, would you suggest that the INSET programme implements in order to make it easier for you to implement the INSET ideas effectively in your classrooms?

- (i) _____
- (ii) _____
- (iii) _____

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PART 2

8. Below is a list of things that help facilitate your ability to teach. For each statement, circle the number that represents how you feel.
 1 = very unhelpful 2 = unhelpful 3 = helpful 4 = very helpful

	Very unhelpful	Unhelpful	Helpful	Very helpful
8.1 Materials provided by the programme	1	2	3	4
8.2 Self-made materials from workshops	1	2	3	4
8.3 Student hand-outs	1	2	3	4
8.4 Syllabus provided by the programmes	1	2	3	4
8.5 More reading materials about teaching	1	2	3	4
8.6 More knowledge about specific teaching strategies classroom teachers can use to improve student learning	1	2	3	4
8.7 Ideas for involving students during lessons	1	2	3	4

9. Which of the following resources or materials are available to you?

YES = materials are available. NO = materials are not available

9.1 Textbooks only, provided by the department	YES	NO
9.2 Teacher guidebooks provided by the department	YES	NO
9.3 Textbooks bought by parents	YES	NO
9.4 Teacher guidebooks provided by INSET programme	YES	NO
9.5 Student worksheets provided by the department	YES	NO
9.6 Student worksheets provided by the INSET programme	YES	NO

PART 3

10. Please indicate what days of the week and what times do you normally attend workshops:

Days of the week: _____

Times of the day: _____

11. Please indicate the extent to which you agree or disagree with the following statements about INSET programme training and workshops.

1 = strongly disagree 2 = disagree 3 = unsure 4 = agree 5 = strongly agree

	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
11.1 Teachers or schools should pay for INSET programme training, even if certificates are not issued	1	2	3	4	5
11.2 Teachers or schools should pay for travel costs to INSET workshops	1	2	3	4	5
11.3 INSET training should be provided for free even if it is accredited	1	2	3	4	5
11.4 INSET training should be provided for free only if it is not accredited	1	2	3	4	5

12. Please indicate the extent to which you agree or disagree about when workshops should be conducted by the INSET programme that you work with:

1 = strongly disagree 2 = disagree 3 = not sure 4 = agree 5 = strongly agree

	Strongly disagree	disagree	unsure	agree	strongly agree
12.1 Workshops should be conducted during teaching time	1	2	3	4	5
12.2 Workshops should be conducted during weekends..... and holidays	1	2	3	4	5
12.3 Workshops should be conducted in the afternoon..... after school	1	2	3	4	5

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13. Please indicate how INSET works at your school at present.

YES = INSET works as described, NO = INSET does not work as described

13.1 INSET programme works with all teachers who teach the same or related subjects	YES	NO
13.2 INSET programme only works with teachers who show interest	YES	NO
13.3 INSET programme works with a few selected teachers	YES	NO

14. Please indicate the extent to which you agree about how INSET should work to best suit the needs of the school

YES = INSET should work as indicated NO = INSET should not work as indicated

14.1 INSET programme should work with all teachers who teach the same or related subjects	YES	NO
14.2 INSET programme should only work with teachers who show interest	YES	NO
14.3 INSET programme should work with a few selected teachers	YES	NO

Appendix G:

*Teacher Questionnaire for Teachers
without ITEC Training*

**IMPROVING EDUCATIONAL QUALITY PROJECT (IEQ)
INSET IMPACT ASSESSMENT STUDIES
TEACHER QUESTIONNAIRE: UNTRAINED/NON-PROJECT TEACHERS**

Teacher code: _____
School code: _____

Date: _____
Name of data collector: _____

1. Please indicate to what degree you agree or disagree with the following statements about your teaching in the last 1 to 3 years. For each statement, circle the number that best represents how you feel.

1 = strongly disagree 2 = disagree 3 = unsure 4 = agree 5 = strongly agree

	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
1.1 You have gained more ideas and skills of teaching	1	2	3	4	5
1.2 Your confidence in your ability to teach has improved	1	2	3	4	5
1.3 You are now motivated to teach	1	2	3	4	5
1.4 Your knowledge of the subject has improved	1	2	3	4	5
1.5 You have not experienced any changes	1	2	3	4	5
1.6 Please provide and rate two other examples, that are not mentioned above,	1	2	3	4	5
that show that your teaching has changed					
(i) _____	1	2	3	4	5
(ii) _____	1	2	3	4	5

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3. Please indicate how often you use the following in your lessons:

1 = rarely 2 = sometimes 3 = most of the time

	Rarely	Sometimes	Most of the time
3.1 Hands-on activities	1	2	3
3.2 Pupil centred-teaching	1	2	3
3.3 Group work activities	1	2	3
3.4 Independent work by your pupils	1	2	3
3.5 Active participation by pupils	1	2	3

4. Please indicate the degree to which your principal is supportive of your efforts to implement new or different ideas in the classrooms.
Circle the number that represents your principal's supportiveness.

Very unsupportive	Unsupportive	Supportive	Very supportive
1	2	3	4

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5. Below are some possible reasons that could make it difficult for you to try out new and different ideas in your classroom. Please indicate which situations apply to you. For each statement, circle the number that indicates most closely how you feel.

1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree

	Strongly disagree	Disagree	Agree	Strongly agree
5.1 You teach too many classes	1	2	3	4
5.2 Class sizes are too big	1	2	3	4
5.3 There is not sufficient time to try the ideas	1	2	3	4
5.4 There is not sufficient materials available	1	2	3	4
5.5 You do not have the interest and motivation	1	2	3	4
5.6 There is not enough support in the school	1	2	3	4
5.7 Students are not ready for these ideas	1	2	3	4
Please write other reasons that are not listed above that you feel are important?				
5.8 _____	1	2	3	4
5.9 _____	1	2	3	4

6. Which of the following resources or materials are available to you?

YES = materials are available. NO = materials are not available

6.1 Textbooks only, provided by the department	YES	NO
6.2 Textbooks bought by parents	YES	NO
6.3 Teacher guidebooks provided by the department	YES	NO
6.4 Student worksheets provided by the department	YES	NO

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7. If INSET organizations were to conduct workshops for teachers, please indicate the extent to which you agree or disagree with the following statements about INSET programme training and workshops.

1 = strongly disagree 2 = disagree 3 = unsure 4 = agree 5 = strongly agree

	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
7.1 Teachers or schools should pay for INSET programme training, even if certificates are not issued	1	2	3	4	5
7.2 Teachers or schools should pay for travel costs to INSET workshops	1	2	3	4	5
7.3 INSET training should be provided for free even if it is accredited	1	2	3	4	5
7.4 INSET training should be provided for free only if it is not accredited	1	2	3	4	5

8. Please indicate the extent to which you agree or disagree about when workshops should be conducted by the INSET programme in your school:

1 = strongly disagree 2 = disagree 3 = not sure 4 = agree 5 = strongly agree

	Strongly disagree	disagree	unsure	agree	strongly agree
8.1 Workshops should be conducted during teaching time	1	2	3	4	5
8.2 Workshops should be conducted during weekends..... and holidays	1	2	3	4	5
8.3 Workshops should be conducted in the afternoon..... after school	1	2	3	4	5

9. Please indicate the extent to which you agree about how INSET should work to best suit the needs of the school

YES = INSET should work as indicated

NO = INSET should not work as indicated

9.1 INSET programme should work with all teachers who teach the same or related subjects	YES	NO
9.2 INSET programme should only work with teachers who show interest	YES	NO
9.3 INSET programme should work with a few selected teachers	YES	NO

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Appendix H:

Lower Primary Initiative Facilitator Questionnaire

ITEC FACILITATORS' QUESTIONNAIRE

Name of facilitator :.....

Please answer the following questions.

1. In which specific areas do you conduct training workshops and make classroom support (monitoring/observation) visits?

.....
.....
.....
.....
.....
.....
.....
.....

2. How many teachers attended workshops in your area this year?

.....
.....
.....

3. How often do you visit and observe the teachers who attend these workshops during the year?

.....
.....
.....

4. During your monitoring visits, have you noticed any changes in the classroom environment that indicate that the workshops have been successful? If so, please give at least THREE specific examples.

.....
.....
.....
.....
.....
.....
.....

5. During your monitoring visits, have you noticed any changes in the teachers' behaviour that indicate that the workshops have been successful? If so, please give THREE specific examples.

.....
.....
.....
.....
.....
.....

6. During your monitoring visits, have you noticed any changes in the pupils' behaviour that indicate that the workshops have been successful? If so, please give THREE specific examples.

.....
.....
.....
.....
.....
.....
.....
.....

7. If you have not noticed changes as a result of the workshops, what, in your opinion are the biggest obstacles to change?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

In the classroom environment:

.....
.....
.....

In the teachers' behaviour:

.....
.....
.....

In the pupils' behaviour:

.....
.....
.....
.....

8. What could be done to increase the likelihood of change in the classroom?

.....
.....
.....
.....
.....
.....
.....