Evaluating the Quality Learning Project (QLP): Reflections on the journey to better schooling

Presentation to the 2nd meeting of the Consortium for Research on Schooling (8 April 2006)

CH Prinsloo

Research Programme:
Education, Science and Skills Development ESSD

Objectives / Outline of Presentation

- QLP evaluation design and methodology
- Central evaluation findings
- Lessons learnt from / about the QLP's particular approach and analyses
- Implications, conclusions and recommendations

A. Overview of evaluation design and methodology

Participants

- Business Trust – R170 million; 5 years
- JET Education Services – intervention programme managers
- Service providers – 10 NGOs across different areas and provinces
- Education system – 9 provinces, 17 districts, 524 schools (DoE co-concept.)
- HSRC – independent evaluation (70 experimental & 16 control schools)

Key Outcomes / Targets

"Each provincial cohort of the QLP schools would, by the end of 2004, show an improvement in school performance measured by … :

- a 10% improvement in mean overall matric pass rate;
- a 10% improvement in mean mathematics pass rate; and
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against a comparable sample drawn for the province." (Cited from original JET/QLP working documents.)

Extended Indicators

Because improvement in (matric) pass rates is limited to being an efficiency indicator, two more were added:

- **Improved quantity – increase in absolute number of matric passes; and**
- **Improved quality – increase in number of matric exemptions and HG maths passes (instead of SG passes)**

Subsidiary questions

- How did practice change (improve) at the district, school and classroom level, from the baseline (2000) to the mid-term (2002) and summative (2004) points?
- How did learner performance change in same period?
- How were levels of practice, and changes to these, related to learner performance?
- What was the intervention dosage (coverage) over the duration of the programme at the three levels?
- Which changes in learner performance and system practice could be attributed to interventions?

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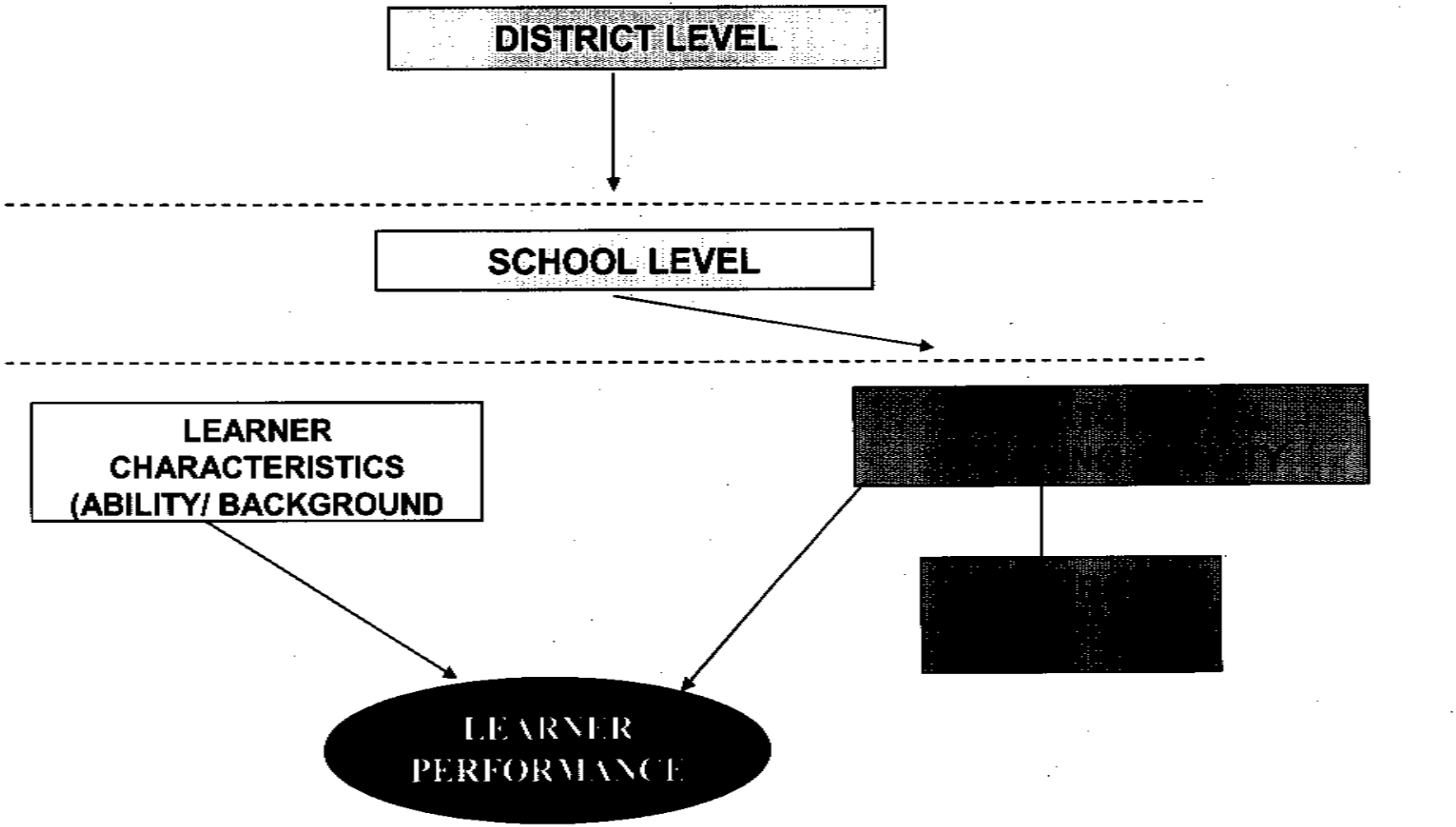
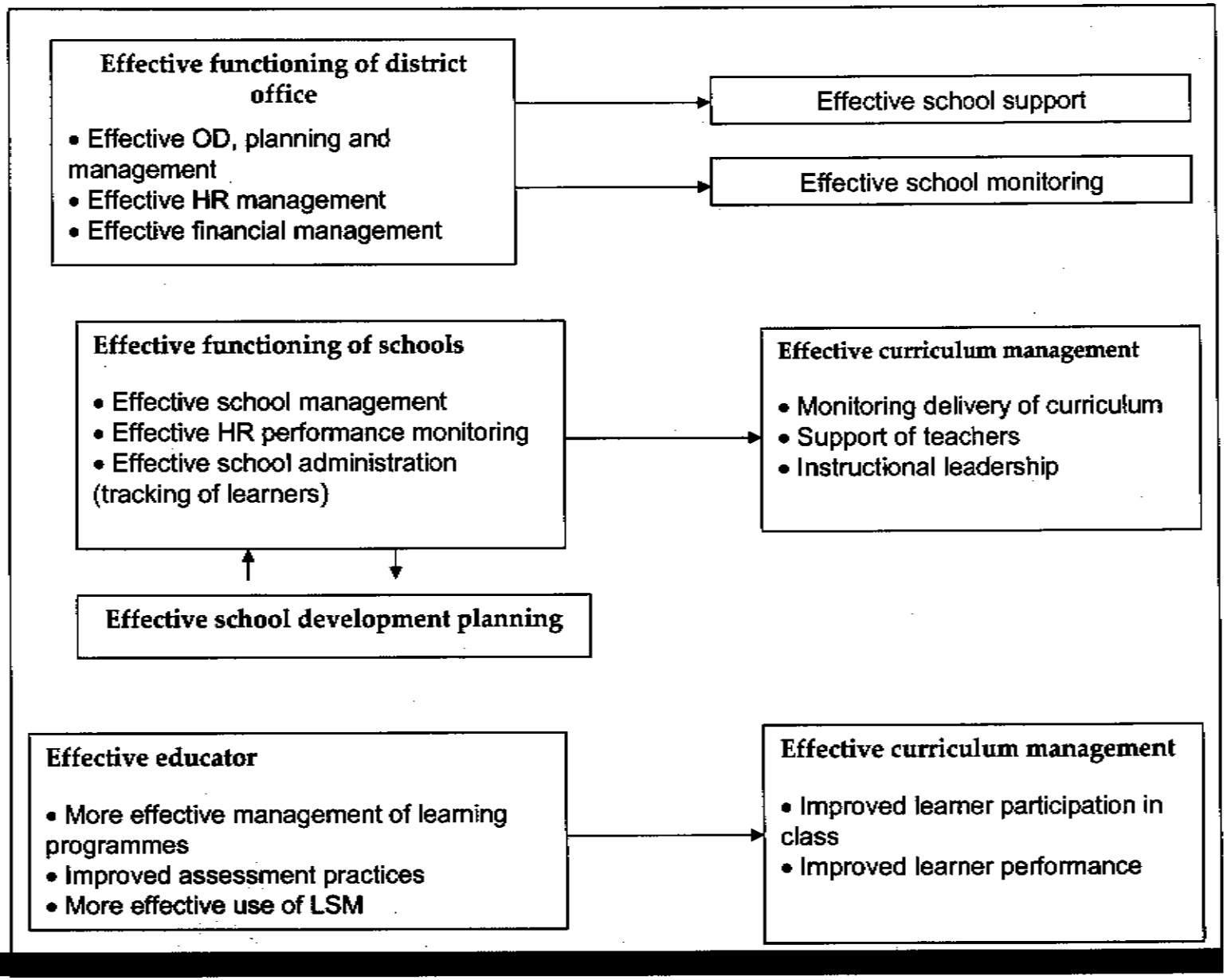
QLP Theoretical Model



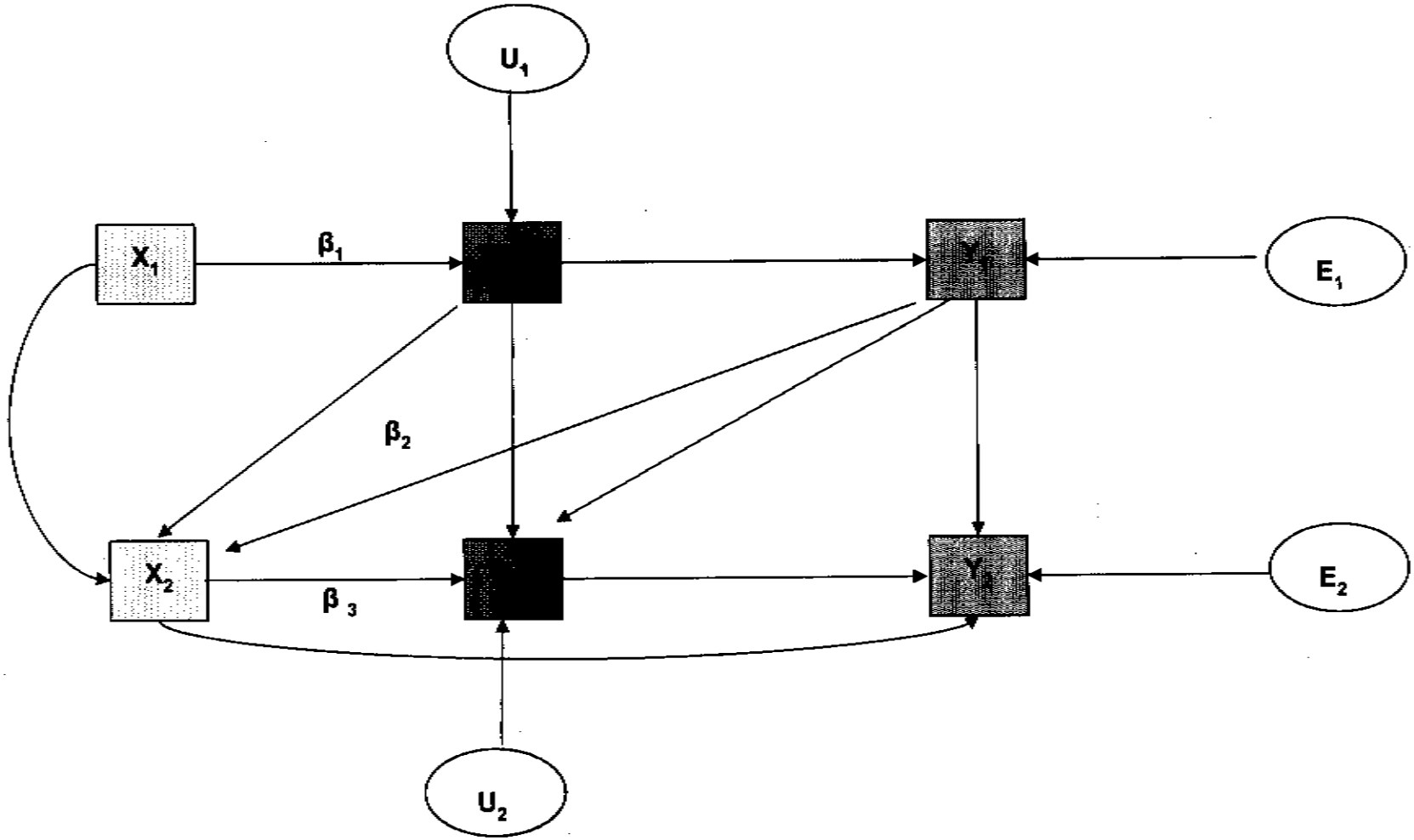
Outcomes for the QLP model

DISTRICT LEVEL
More effective OD, planning and management
More effective HR management
More effective financial management
More effective school monitoring
More effective support to schools
SCHOOL LEVEL
More effective school development planning
Improved school governance
More effective HR management
More effective curriculum management
More effective school administration
EDUCATOR LEVEL
More effective management and delivery of learning
Improved assessment practices
More effective use of LSMs
Improved learner participation

The QLP Model at the District, School and Educator Level



Path model applied



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Indicators and variables used

- **Six clusters of information:**
  - **Cluster 1 (X_1) – Interventions mid-2001 to end 2002**
    (district, school, maths teachers, language teachers as var.s)
  - **Cluster 2 (A) – Initial functionality level at end 2002**
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  - **Cluster 3 (Y_1) – Learner performance at end 2002**
    (Maths Gr 9, Maths Gr 11, R&W Gr 9, R&W Gr 11)
  - **Cluster 4 (X_2) – Interventions since 2003 to mid-2004**
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  - **Cluster 5 (B) – Eventual functionality level end 2004**
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  - **Cluster 6 (Y_2) – Learner performance at end 2004**
    (Maths Gr 9, Maths Gr 11, R&W Gr 9, R&W Gr 11)

Copy of Path Model jetstream (AMOS)

B. Central evaluation findings

Most salient analysis challenges

- Effect of instrument changes midway, to reflect new causal model, on continuity
- School level is lowest for which cases remain consistent (learner data cover different samples in subsequent years)
- Rather small sample does not allow inclusion of many variables
- Indices limited to overall levels of functionality, intervention and performance

[I] Success of QLP

As comparison between QLP and control schools from 2000 to 2004:

- Quantity of output
  - Increase of QLP matric pass numbers was 16,84 %-points more in QLP than in control schools
  - Increase of QLP English 2nd language HG pass numbers was 36,03 %-points more in QLP
- Efficiency of output
  - Increase in overall school matric pass rate was 8,20 %-points more in QLP than in control

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Success of QLP (continued)

- **Quality of output**
  - **Increase of QLP number of learners passing with endorsement (exemptions) was 61,79 %-points more in QLP than in control schools**
  - **Increase of QLP number of learners passing maths at HG was 924,19 %-points more in QLP ***
  - **Increase of QLP number of learners passing maths at SG was 0,70 %-points more in QLP ****

*** Very low QLP baseline of 6 up with 55; control's 133 down with 10**

**** QLP schools were discouraged to have this number grow**

[II] Trends in Gr. 9 & 11 functioning

- Learner performance – only Gr 11 writing skills increased significantly for QLP above control (hypotheses/explanation?)
- Classrooms –
  - Gr 11 favoured above 9, and
  - Maths above language (LSM, curriculum planning, and coverage)
  - For Gr 9 maths, QLP increase > control
  - Steady general improvement in practices over time (curriculum coverage; lesson pedagogy; use of LSMs; classwork and homework practices)

Gr 9 & 11 trends (continued)

- **School level** – (QLP increase > control for)
  - School development planning
  - Existence and use of resources, facilities, LSMs
  - Curriculum leadership
  - Financial and other school management
  - School administration
- **District level** –
  - Design and use of job descriptions
  - Financial management
  - Within-district planning
  - School-support planning, implementation

[III] Causal modelling ('02 → '04)

- **Consistency over time / critical mass**
  - **Of interventions, functioning and learner performance (across levels, subjects and grades)**
- **Interventions targeted / tailored**
  - **Dynamically and interactively to need**
- **Interventions improved functioning**
  - **Classroom and teacher interventions → school functioning**
  - **District interventions → school functioning**

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Causal modelling (continued)

- **Functioning improved lrnr performance**
  - School and teacher/classroom functioning in many cases
- **Interventions improved lrnr performance**
  - District interventions → Gr 11 Maths perform.
  - Lang teacher interventions → matric pass rates
- **Dosage and quality of interventions**
  - Fatigue effects over time (difficult to sustain)
  - District and Gr 9 language-teacher interventions were exceptions

Illustration through examples in the path-analysis diagrams from the Summative Report

C. Lessons learnt from our particular approach and analyses

Advantages of Path Analysis

- Enabled rather complex (involved) and sophisticated investigations
- Scientific-technical approach gives confidence in findings
- Logic/causal programme intervention model and path-analysis evaluation models are clear and well integrated
- Does/did not technically require a control group for determining factors influencing outcomes (of functioning & performance)

Disadvantages of Path Analysis

- Limited to school level as unit of analysis consistent over time
- This reduces the number of observations
- Which limits the number of variables that can be accommodated
- Which requires substantive aggregation of indices and indicators
- Reduces statistical power of technique
- Implies "wasting" lots of data
- Requires huge data-management skill / work

D. Implications, conclusions and recommendations

Implications

- The information on offer in the data has not nearly been exhausted at all
- Lots more analysis can be done and are required
- Other techniques and levels of analysis have to be explored
- Sophistication results in time lapse and gap between releasing the findings and initial impetus, interest & interventions → loss of interest by client/DoE

Conclusions

- Policy-maker dilemma (reference to evidence-based policy making; as presented in the work of Dr Philip Davies and Prof Michael Noble) **
- Research & M&E, on the one hand, and the pace of implementation and policy horisons, on the other, do not meet
- Importance of CoReS in this context

** Research for government: research evidence @ political ideology; external, systematic research evidence @ experience, expertise & judgement

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Recommendations

- The need for / value of a working group to interrogate the potential of data, including that of the QLP, has to be argued widely and implemented practically
- The work of such a team could easily be linked to post-graduate students and internship arrangements
- Secure the interest of and contributions by funders to sustain this

Recommendations (continued)

- Subject each specific investigation to multi-angle approaches in terms of statistics, methodologies, etc. under the guidance of expert teams / work-groups
- Determine and prioritise the next most important analyses required
- Focus on those factors hindering and enhancing the quality of schooling
- Design true tracer / longitudinal studies, with the learner level as unit of analysis

* (Adapted from CoReS presentation of April 2006)

The Quality Learning Project (QLP) Evaluation: Review of Methodology and Factors Associated with Improvements in Schooling

Presentation at ESSD Internal Seminar (11 May 2006)

CH Prinsloo

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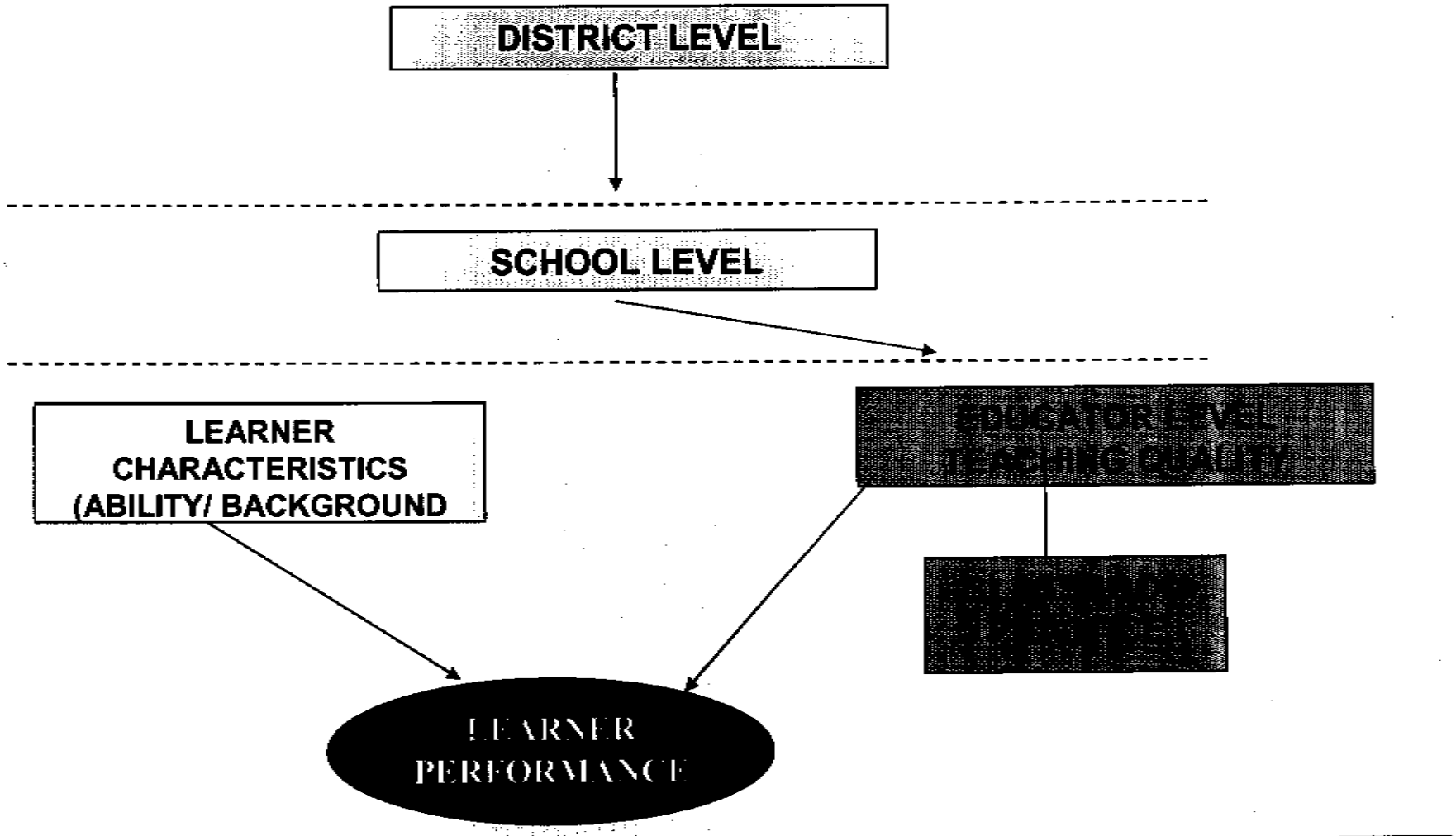

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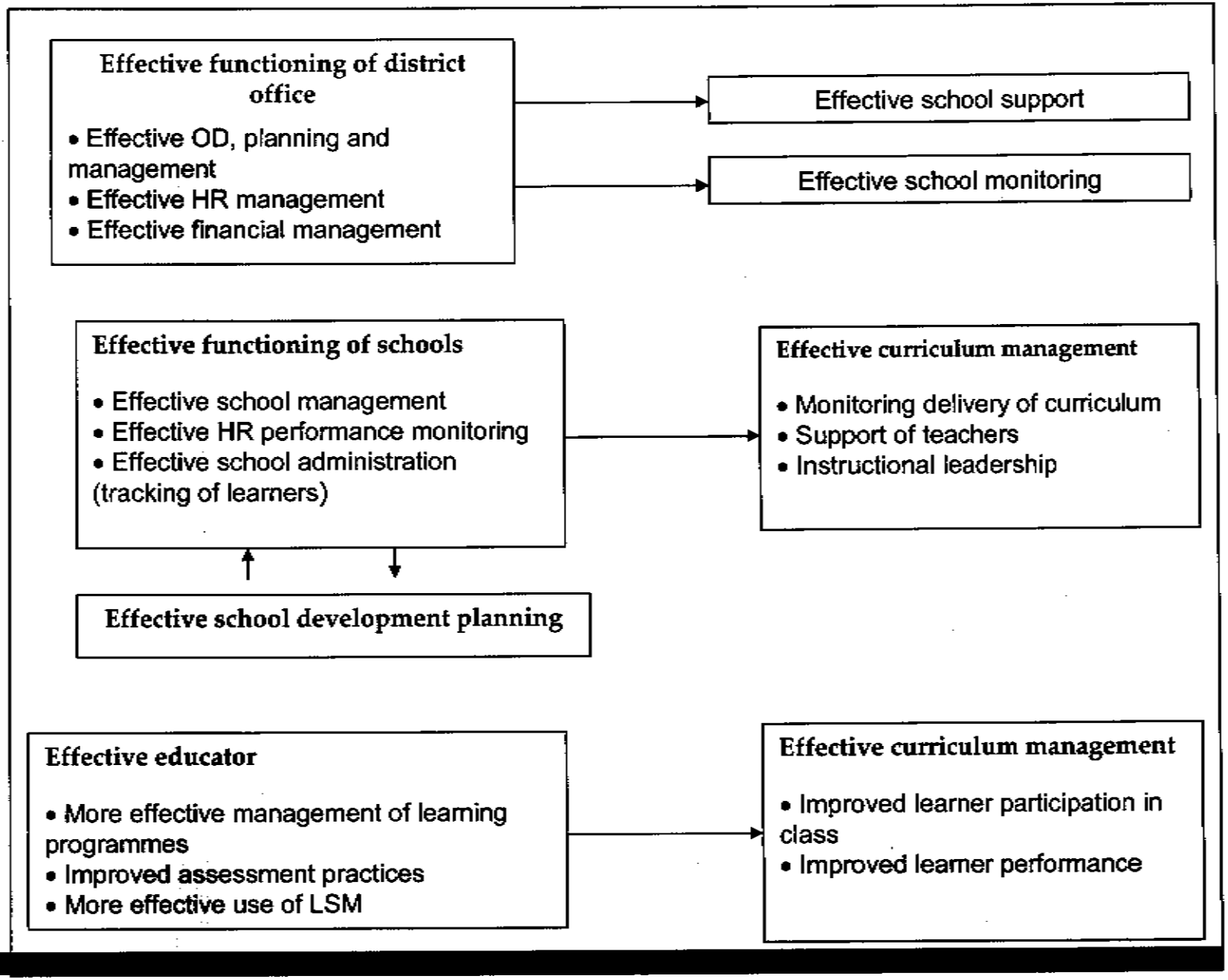

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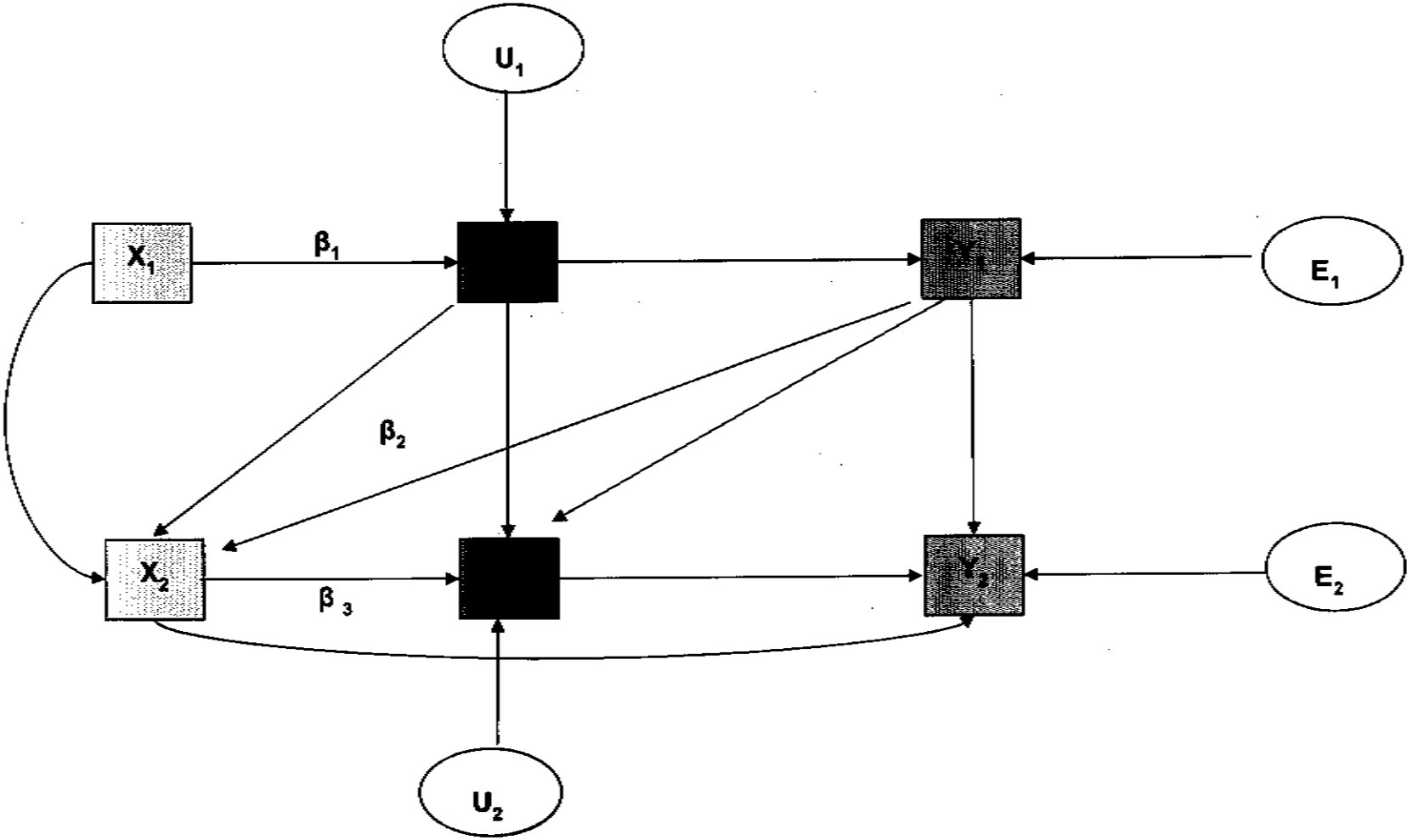

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Passrates -- Gr 12 overall

Variables (highlighted ← already reported in Sect 7.2.3, Tab 7.11)				Regression coefficient	
Predicted	←	Predictor	P	Standardised	Unstandardised*
Distr Funct 2002	1a	Lang Tchr Intrv 2001/2	.005	.324	.252
Lang11 Tchr Funct 2002	1b	Schl Intrv 2001/2	***	-.411	-.092
Matric passrate in 2002	2b	Lang11 Tchr Funct 2002	.005	.332	1.181
Distr Intrv 2003/4	3b	Distr Intrv 2001/2	***	.454	.754
Distr Intrv 2003/4	3c	Schl Intrv 2001/2	***	-.370	-.399
Schl Intrv 2003/4	3d	Distr Intrv 2001/2	.009	.270	.300
Schl Intrv 2003/4	3e	Schl Intrv 2001/2	.007	.304	.219
Schl Intrv 2003/4	3f	Lang Tchr Intrv 2001/2	.001	.341	.221
Lang Tchr Intrv 2003/4	3g	Lang Tchr Intrv 2001/2	***	.665	.640
Schl Funct 2004	4a	Lang Tchr Intrv 2003/4	.009	.415	.038
Schl Funct 2004	4b	Matric passrate in 2002	.028	.222	.027
Schl Funct 2004	4i	Schl Funct 2002	.040	.214	.217
Schl Funct 2004	4ii	Lang11 Tchr Funct 2002	.068	.187	.081
Distr Funct 2004	4c	Distr Intrv 2003/4	***	.368	.350
Distr Funct 2004	4d	Distr Funct 2002	***	.388	.460
Lang11 Tchr Funct 2004	4e	Lang Tchr Intrv 2003/4	.005	.321	.062
Lang11 Tchr Funct 2004	4iii	Schl Funct 2002	.016	.277	.598
Lang11 Tchr Funct 2004	4g	Distr Funct 2002	.003	-.325	-.078
Matric passrate in 2004	5i	Lang Tchr Intrv 2003/4	.002	.297	.211
Matric passrate in 2004	5c	Matric passrate in 2004	***	.580	.555

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Advantages of Path Analysis

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Advantages of Structural Equation Modelling*

- As powerful alternative to regression, and in contrast to it, it copes with:
  - Correlated explanatory variables (and thus the problem of multi-collinearity)
  - Measurement error
  - Non-normal data
  - Incomplete data
  - Endogeneity
- Allowing a more complex and nuanced view of the world

* (Megan Louw, Dept Economics, Univ of Stellenbosch)

Disadvantages of Path Analysis

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- Reduced statistical power of technique
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Disadvantages of SEM *

- Because of the complexity of the methodology, the analyst may find it difficult to determine all the ways in which variables affect one another
- Including more relationships and variables comes at a cost: As the system becomes more complicated, so does the co-variance structure it implies
- Though SEM copes with non-linearities to some extent, it remains linear i.t.o. the linear regressions still explaining the variance-covariance matrix
- It needs a large dataset
- Model fit to the data does not logically imply that the model provides the correct / true(est) view of the world – another model may fit the data equally well
- Lack of ability to generalise the results

D. Implications, conclusions and recommendations

Implications

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