

Inequity Progress of Pupil Groups in Upper Primary Schools

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Abstract: The inequity issues and evidence are the foci of this article. The study reanalysed data collected from 60 primary schools in the city of Malang. Three upper grades in each school were picked up, 160 classes with all 5188 pupils. The prior attainment of Indonesian Language and Mathematics expressing the basic skills were used as predictor baselines. The post-scores after a year in progress, were treated as response variables. The learning progress revealed by the value-added of each child was obtained after taking into account the baselines and regressing to the response variables utilising the multilevel analyses. Issues of inequity were raised related to significant factors differentiating pupil attainment progress and the possible gap in school level.

Keywords: Equity, learning progress, basic skills, primary education.

Four major educational problems in Indonesia were recognised since the beginning of 1970s, after a tremendous survey of PPNP (National Assessment of Education Project) was conducted. The problems were educational access, educational opportunity, internal efficiency, and educational quality. These four problems whether expressed directly or indirectly were discussed on many occasions in a wide range of educational fora (Beeby, 1979; Tangyong et al, 1989; Moegiadi & Jiyono, 1994; Tilaar, 1995; Tilaar, 2000; Creemers, 2000).

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Problems of educational access were considered as the extent to which the school age groups have gained access to the basic education system. This was usually measured in terms of participation rates, such as the percentage of 7-12 year old children who have gained access to the different types of basic education; in-school and out-of-school systems. Participation rates could be understood as the extent to which the government has succeeded in providing basic education for society. Generally, the participation rate for basic education in Indonesia until 1995 was extraordinarily high compared to many developing countries (Lockheed & Vespoo, 1992; Lockheed & Levin, 1993). The schools at primary level in the early 1990s had absorbed over 90% the population of the school aged children, whereas 57% was the average in Asian countries (Tilaar, 1995). In this last decade the figures tend to remain steady with slight differences from district to district due to the long-lasting crisis in the country.

The problem of internal efficiency is related to pupil flow. The primary education expansion programme in Indonesia which was begun in 1973 had successfully improved access to the school system and had enrollment to over 90% in the late 1990s. Access to school, measured in terms of participation rate, however, may not necessarily reflect real opportunity to learn, but rather dropout and repetition rates inside the schools. Data since 1975 revealed that dropout and repetition rates had not significantly declined, the dropout rate remained steady since 1985. As the consequence of the two indicators, the success rate when comparing enrollment and graduates was 70% (Tilaar, 1995). This meant that 20% of time spent in 6 primary years was wasted. This problem was recognised in the average high cost of producing one graduate due to the inefficiency of the school system. This kind of wastage was closely related to the next problem, the quality.

The problem of quality in all aspects of education is a main agenda in entering the next millennium (Buchori, 1994; Moegiadi & Jiyono, 1994; Moegiadi et al, 1994; Tilaar, 1995). Generally, the success in quantitative aspects of education as related to the first three problems, did not guarantee the improvement in quality. The problem of quality is related to the educational process and outcomes (APPEAL, 1991; Semiawan, 1991; Joni, 1993; Soedijarto, 1993). Until today, this problem has been regarded as serious. Discussions about the problem turned to assessment of the teaching-learning process. In order to improve classroom teaching-learning, many innovative efforts had been carried out without any longlasting result. The innovations such as PPSP (*Projek Perintis Sekolah Pembangunan*, located in eight uni-

versity level institutes of education and teacher training since 1973), ALPS (Active Learning through Professional Support in Cianjur-West Jawa, then replicated into 6 other provinces later known as CBSA), PEQIP (Primary Education Quality Improvement Project in six provinces since 1994), some curriculum changes (in 1975, 1986, 1994), preservice and inservice training were exciting for teachers and pupils but this had no lasting effect. In fact, as the project was over, the teachers changed their minds and practices to whatever they themselves felt comfortable with (Shaeffer, 1990; Leigh, 1991). On ALPS and PEQIP the serious problems were related to school cultural values as have been there for centuries (Shaeffer, 1990; Parker, 1992; Tilaar, 1995). The other reason was not all key educational practitioners were involved in the innovation projects (Harber & Davies, 1997).

The opportunity for basic education was considered as a problem in terms of whether the opportunity had been equitably provided across population sub-groups, such as pupil age, gender, rural-urban location, and family socio-economic background. The proportion of 6-year-old or younger children who were in school varied by school location and type. The proportion of 6-year-old or younger pupils in schools was higher in urban areas and private schools than in rural and state schools. Suryadi, Green, and Windham (1992), and Suryadi (1993) discovered that the private schools in urban areas were benefitting from the higher quality of pupil intake. In schools outside the island of Java, especially in rural areas, the proportion of overage pupils (more than 12 years old) appeared to be substantial. Some studies pointed out that the number of late enrolling pupils was higher in those areas in which participation rates are lower. However, the problem had not been a substantial one for the whole country policies since this decade because educational expansion was focussed in terms of buildings, resources, and personnel.

Expanding educational opportunity for younger children may also indicate an improvement in educational quality in a larger sense. A number of studies on school quality in Indonesia since Moegiadi on primary schools (1976), Mangindaan on Junior Secondary (1979), Jiyono and Ace Suryadi on Junior Secondary (1981), and Ace Suryadi on Junior Secondary (1986) have shown a consistent finding that the younger a student is, the higher the student's academic achievement. The increasing proportion of 6-year-old children (or younger) in first grade (from 26 to 46.5% during a 4-year period) seems to be an extraordinary rate of increase. This may indicate an increase in the proportion of children who will learn faster.

The percentage of female enrolled in primary schools is significantly lower than males. This seems to indicate that the opportunity for primary education differentiates the gender categories. Forty-eight per cent of girls enrolled in schools shows that educational opportunity for boys is about 4 per cent higher than for girls. This seems to be a small difference, until it is put into absolute numbers. Put into the national perspective, the difference is substantial - about 1.2 million students. The provision of educational opportunity, therefore, has tended to be biased toward male students.

Finally, it can be concluded that educational opportunity for basic education has been biased against students from families with lower socio-economic status, and in favour of the urban and male groups. All the problems as mentioned above keep on implying a big issue of equity that the topic of this study.

METHODS

The main aim of this study was to investigate the detailed inequity learning progress of primary pupils at individual and school levels. It is forcefully argued in the school effectiveness literature that schools make a difference to pupil attainment. However, there is a need for further research to demonstrate this in more detail including the extent of difference and possible reasons for it. Educational attainment has been shown to be affected by many factors such as characteristics of pupils, home background, classroom context, school context, along with some process aspects. The statistical influence of these factors on attainment can be best investigated by models which take into account the nesting within a hierarchical structure. This means that variance in pupil attainment is examined at different levels (e.g. the individual child, the class, the school). Goldstein (1995, 1997), Mortimore (1995), and Gray (1998) point out that this analysis is a promising approach in comparison to many previous studies which have ignored the hierarchical (clustered) structure of educational data.

This study focused on the upper grades of primary schools in an urban setting. The sample expressed three levels of school organisational hierarchy, those of pupil, class, and school levels. The whole sample comprised 60 schools from all five subdistricts in the City of Malang – East Java. Three classes (Grade 4, 5, 6) were picked up from each school, altogether 180 classes with 5188 pupils. The pupil sample consisted of 1668 from Grade 4, 1756 from Grade 5, and 1764 from Grade 6. Pupil attainments in Indonesian Lan-

guage and Mathematics were considered as data expressing the basic skills in the Indonesian primary curriculum. These outcomes were measured by tests developed at national and district levels at the end of the 1995/1996 academic year (Grade 3, 4, and 5), and in 1996/1997 (Grade 4, 5, and 6). The explanatory variables related to equity issues were gender, age, parents educational qualification and occupations.

Pupil academic attainments in Indonesian Language and Mathematics were used as predictor baselines and response variables. The baselines or prior attainments were the scores of the subjects obtained by the child at the end of 1995/1996 school year. During that year pupils were in Grades 3, 4, and 5. The Provincial Department of Education applies the policy that for every district at the end of each school term, all schools administer the same test for the same subject at the same grade.

The response variables were the scores of the same pupil in the same subjects (Indonesian Language and mathematics) obtained at the end of 1996/1997 school year. During this school year children had moved one grade higher i.e Grade 4, 5, and 6. Tests for Grade 4 and 5 were developed similarly to the baseline tests. However, Grade 6 tests were the national "leaving examination", developed by a special team at national level.

The gender differences in Grades 4, 5, and 6 were small (below 5%). These represent the situation in Indonesian primary schools since the last three decades where girls' participation has been above 45 per cent (Department of Information - Republic of Indonesia, 1985). The average age of pupil was 9.7 years in Grade 4, 10.8 in Grade 5, and 11.8 in Grade 6. The biggest range of age was in Grade 5, about 4 years, whereas Grade 4 and 6 were 2.6 and 3.2 years respectively.

In terms of classroom organisation characteristics, gender ratios, and class size were considered. On average there were 17 males and 16 females in a class. The average class size was 30 (rather similar to the size in UK which was 28, see Wiliam, 1998) with the smallest of 15 and the largest of 50 pupils. These organisational characteristics were similar in Grades 4, 5, and 6.

The investigation of socio-economic status (SES) was problematic because no robust measure has been developed for Indonesian conditions. Heyneman (1989), Hughes (1992), and Paterson (1992) note that three standard sociological measures should be included in measurement of SES: occupation (carefully validated and scaled), income, and educational background. Although in Heyneman's previous analysis (Heyneman, 1986) parental education was used only as a single indicator, this has been attacked by Riddell (1989)

as a weak measure of SES in developing countries. Soegiyanto (1984) argued that similar to Malaysia and Thailand, SES could be misleading in East Java because parental education and occupation are relatively orthogonal to each other (wealth and prestige patterns were different). Therefore instead of drawing conclusions about SES, this study used parents' occupation and parents' education separately as variables and the analyses presented support the view that both have an influence on attainment.

Father's occupation and mother's occupation were ascertained through open-ended questions due to a wide range of urban occupations. Father's education, and mother's education were based on the formal educational structure in Indonesia viz. primary, junior secondary, senior secondary, and tertiary level. There was a wide range of father's and mother's occupations. By using Goldthorpe and Hope's (1978) classification and considering the possible educational requirement, the classification of fathers' occupation ended up with 3 categories, whereas for mothers', there were 4 categories. The categories for fathers' occupation were unskilled manual, skilled manual, and clerical and professional. Mothers' occupation had similar categories as fathers' with an addition of "non-earning" which appeared in the Indonesian Population Census (BPS, 1996). The obtained data revealed that the frequencies of the "unskilled manual" group was the highest in father occupation and "non-earnings" in mother occupation. The "clerical and professional" was the smallest category in fathers' and mothers' occupation.

Most pupils came from families where the father's educational qualifications were primary and secondary levels. Only a few were from tertiary level or had never been involved in any formal education. The dropout rate for fathers from primary education was four times higher than those who entered secondary and tertiary education. Similar to fathers', the majority of mothers' educational qualification levels were primary (the highest) followed by secondary education. Compared to fathers' education, fewer mothers had had tertiary education. There was a lower dropout in secondary level but a higher dropout in primary. There were also more mothers in the category of those who had never attended school. For the subsequent analysis, the educational categories were changed into 'years of education'. The dropouts were treated as the position in the middle of the two closest categories.

Multilevel analysis was used to answer the research problem. Since the first use of multilevel analysis in *School Matters* (Mortimore et al., 1988), it has been recognised that the statistical package of MLn enables more efficient estimates of school differences in pupil attainment. Because multilevel

analysis is relatively new, some typical equations and explanations are presented in this section. The analysis took into account the hierarchical structure of the data in which pupils are nested within classes/schools (Patterson & Goldstein, 1991; Goldstein, 1995; Plewis, 1997). The multilevel analysis can be regarded as the extension of single level regression analysis by considering more than one source of variation (e.g variation of pupils in level 1 and of school in level 2). Aitkin and Longford (1986) established important bases for comparing school effectiveness after the adjustment of intake differences in individual level as demonstrated by Rutter et al (1979). The bases were regarded in the following three phases of analysis.

Starting null model (Model 0). The first simplest one was the null model which only estimated the total variance and its components. In this model the total scores (Indonesian Language and Mathematics) were regressed on the constant term (coded 1 for every student). In addition the constant term was set at random at both the student and school levels. The aim of this analysis was to estimate the overall mean achievement at both intake and at the end of school year and also to see whether there were any school differences in mean achievement. The intra-school correlation (the proportion of the total variance which was between schools) was also computed from the random estimates (based on Goldstein & McDonald, 1988; Goldstein, 1995).

The model fitted was: $Y_{ij} = \beta_{oj}x_o + e_{oj}x_o$

with $\beta_{oj} = \alpha_{oo} + u_{oj}$ (between school variation)

where i = pupil

j = school

y_{ij} = pupil's attainment

x_o = the intercept term (constant) with a value of 1 for every pupil

α_{oo} = overall mean attainment

u_{oj} = school level residual

e_{oj} = student level residual.

Thus the model can be summarised as follows:

$$Y_{ij} = \underbrace{\beta_o}_{\text{fixed}} + \underbrace{(u_{oj} + e_{oj})}_{\text{random}}$$

The following parameters were estimated by model 1:

β_o = overall average attainment

σ_{oe}^2 = student level variance i.e between students within school variation

σ_{ou}^2 = between school variance

The intra-school correlation was given by the formula: $\rho = \sigma_{ou}^2 / (\sigma_{ou}^2 + \sigma_{oe}^2)$. This correlation measured the proportion of the total variation that was due to schools and also the degree of similarity of the students within a school. The larger the value of ρ the greater the clustering and the more important it was to use a fully efficient estimation procedure.

Testing the baseline (Model 1). Model 0 was extended by the inclusion of initial scores as the baseline. The purpose of fitting this model was to make sure if prior attainment could be good predictors for being controlled in the subsequent analysis.

Model 1 was extended by the inclusion of explanatory variables measured at pupil, class and school level. The purpose of fitting this model was to find out which of the pupil, class and school factors had significant effect.

The model was represented by the equation: $Y_{ij} = \beta_{0ij}x_o + \beta_1x_{1ij} + \dots + \beta_n x_{nij}$ with $\beta_{0ij} = \beta_o + u_{oj} + e_{0ij}$

where i = pupil

j = school

Y_{ij} = response variables

$x_{1ij} \dots x_{nij}$ = explanatory variable (e.g. gender, age, etc)

U_{oj} = school level residual

e_{0ij} = student level residual

β_o = constant (intercept term)

$\beta_1 \dots \beta_n$ = regression coefficient.

Predicting the attainment (Model 2) and the progress for the whole year (Model 3). The last two models used the same equation as used in Model 1 by extending some other explanatory variables. Following the significant difference in Model 3, the correlation of some possible gap at school were calculated. From Model 1 through 3, the variances attributable to school and pupil were checked.

RESULTS

The following reports were based on grades due to different instruments for tapping data of response variables. Four consecutive models would be described: null model, model 1 with prior scores only, model 2 explaining the attainment, and model 3 the progress at that grade. Table 1 summarises the final model of analysis based on data from Grade 4, 5, and 6.

Grade 4. The null model, as an empty model which fitted a constant term only, showed that from the total variance of 0.9956, 21.4% was between class/schools and 78.5% between pupils. These percentages are similar to those found in primary school studies in other context (Tymms, 1993; Hill & Rowe, 1996; Riddell, 1997; Kaluge, Sammons, Sylva, & Siraj-Blatchford, 2000). Model 1, controlled for prior attainment. As would be expected, the Indonesian Language and Mathematics accounted for a significant proportion of the variance in pupils' total scores at Grade 4, the reduction from the total variance was 32.8%. In terms of the remaining unexplained variance, the pupil variation was 70.3%, and the class/school component was raised to 29.7%. Model 2, contained individual pupil background such as gender and age, and family social status referring to parents education and occupation. The intercept from Model 2 represents the attainments of girls and of the youngest quartile age. The variables identified as significant in the fixed part of the model were:

- pupil gender, girls outperformed boys
- pupil age, the youngest children in Grade 4 achieved better than the oldest quartile of pupils (Age3).
- father's education, the higher the education the father had, the better the attainment of the child
- mother's education, similar to father's education, the higher the educational qualification the better the child's attainment
- father's occupation, pupils whose fathers had unskilled manual jobs had lower achievement than those with clerical and professional fathers
- mother's occupation, those with clerical and professional mothers performed better than the others with the rest categories.

Model 3, relating to the progress obtained during the school year, some variables disappeared to be significant. Children age and parents education did not make any difference to the progress. Whereas pupils whose fathers' jobs were unskilled manual made less progress significantly than the others. On mothers' works, children with mothers of non-earning jobs (looking for home only) tended to make less progress than their other friends.

Grade 5. The empty model showed that from the total variance of 0.9929, 17.1% was between class/schools and 82.9% between pupils. These revealed that the variation of pupils in Grade 5 was higher than in Grade 4 as shown previously. The baseline, as estimated in Model 1 contributed a significant proportion of the variance in pupils' total scores at Grade 5, the reduction from the total variance was 39.7%. In terms of the remaining unex-

plained variance, the pupil variation was 71.8%, and the class/school component was raised to 28.2%. Model 2, contained individual and contextual pupil background identified significant variables in the fixed part as follows:

Table 1 Results of Multilevel Analysis per Grade

Parameter	Estimate (Standard Error)		
	Grade 4	Grade 5	Grade 6
<i>Fixed Part</i>			
Intercept	0.19 (0.12)	-3.76 (0.16)	-3.81 (0.17)
Mathematics	0.027 (0.0015)*	0.029 (0.0016)*	0.027 (0.0014)*
Language	0.018 (0.002)*	0.031 (0.0019)*	0.031 (0.0019)*
Gender	-0.27 (0.035)*	-0.17 (0.032)*	-0.16 (0.031)*
Age1	0.042 (0.047)	0.047 (0.043)	0.047 (0.041)
Age2	0.0079 (0.047)	-0.075 (0.047)	-0.114 (0.044)*
Age3	-0.093 (0.054)	-0.19 (0.048)*	-0.36 (0.048)*
Father's education	0.011 (0.009)	0.012 (0.091)	0.013 (0.0084)
Mother's education	0.014 (0.009)	0.0068 (0.0093)	0.0054 (0.0085)
Father occupation1	-0.12 (0.054)*	-0.012 (0.0051)*	-0.014 (0.046)
Father occupation2	-0.027 (0.52)	-0.064 (0.049)	-0.025 (0.045)
Mother occupation1	-0.097 (0.083)	-0.062 (0.077)	-0.065 (0.072)
Mother occupation2	-0.12 (0.075)	-0.023 (0.07)	-0.027 (0.065)
Mother occupation3	-0.13 (0.067)*	0.0084 (0.063)	0.039 (0.058)
<i>Random Part</i>			
*School σ^2	0.1671 (0.34)	0.1599 (0.032)	0.1856 (0.036)
*Pupil σ^2	0.445 (0.016)	0.4089 (0.014)	0.3665 (0.013)
Total σ^2	0.6121	0.5688	0.5521
% school σ^2	27.3	28.1	33.6
% pupil σ^2	72.7	71.9	66.4
% σ^2 accounted for	38.5	42.7	43.9

Note: * $p < 0.05$

Pupil gender (0=female pupil, 1=male pupil);

Age in month (0=the first quartile as the youngest, Age1=the second quartile,

Age2= the third quartile, Age3= the fourth quartile as the oldest).

Father occupation (0=clerical & professional, 1=unskilled manual, 2=skilled manual)

Mother occupation (0=clerical & professional, 1=unskilled manual, 2=skilled manual, 3=non-earning)

- pupil gender, girls outperformed boys
- pupil age, the youngest children of the half class in Grade 5 achieved better than the other half older pupils (Age2 and Age3).

- father's and mother's education, the higher their educational qualification, the better the attainment of the child
- children of fathers with clerical and professional jobs performed better than the other manual works. Mother occupation did not appear to be significant for pupil attainment in Grade 5.

For explaining the progress made by the Grade 5 pupils, Model 3 presented fewer significant variables. Children of the oldest quartile made less progress than their other classmates. Concerning father's occupation, children from unskilled manual work background performed less than the other occupational backgrounds. Again, mother's occupation did not appear to make difference in the pupil progress.

Grade 6. The null model on Grade 6 attainment showed that from the total variance of 0.9838, 23.4% was between class/schools and 76.6% between pupils. These revealed that the variation of pupils in Grade 6 was lower than in Grade 4 and 5 as shown previously. The baseline, as estimated in Model 1 contributed a significant proportion of the variance in pupils' total scores at Grade 6, the reduction from the total variance was 40.2%. In terms of the remaining unexplained variance, the pupil variation was 66.8%, and the class/school component was raised to 33.2%. Model 2, contained individual and contextual pupil background identified significant variables in the fixed part as follows:

- on gender, similar to the other two previous grades, girls outperformed boys
- on age, the older pupils of the half class (Age2 and Age3) achieved lower than their other younger mates in Grade 6
- father's educational qualification had a positive contribution to the pupil total achievement
- unfortunate, pupils of mothers with unskilled manual works underperformed the other work categories

For explaining the progress made by the Grade 6 pupils, in Model 3, only gender and age were significant variables. Females and youngest children made higher progress than their other classmates.

Table 2 shows that among the significant differences related to pupil progress at Grade 4, 5 and 6 as shown on the previous analyses, the most convincing inequity appeared at Grade 4 and 6. At Grade 4, the gap of fathers' and of mothers' occupation correlated negatively ($r = -.36$) and positively ($r = 0.40$) with the progress of pupil at school level although the correlation were not high. In addition, the correlation between the father-

occupation-gap and the mother-occupation-gap was negative ($r=-0.47$) in school level. No significant correlation was found related to inequity at school level referred to the progress made by Grade 5 pupils. However for Grade 6, one negative correlation ($r = -0.41$) was found at school level explaining the gender-gap and the age-gap.

Table 2 Correlations between residuals at school level

Grade 4 (N=60)				
	RESID4	SEXGAP4	FOCGAP4	MOCGAP4
RESID4	1.00			
SEXGAP4	.01	1.00		
FOCGAP4	-.36*	-.22	1.00	
MOCGAP4	.40*	.08	-.47*	1.00
Grade 5 (N=60)				
	RESID5	SEXGAP5	AGEGAP5	
RESID5	1.00			
SEXGAP5	.12	1.00		
AGEGAP5	.17	.19	1.00	
Grade 6 (N=60)				
	RESID6	SEXGAP6	AGEGAP6	
RESID6	1.00			
SEXGAP6	.05	1.00		
AGEGAP6	-.11	-.41*	1.00	
* $p<0.05$				

Note: (referring back to Table 1)

RESID = Residual (at 4 = Grade4, 5 = Grade 5, 6 = Grade 6)

SEXGAP = Gap between boys and girls

FOCGAP = Gap between father's occupations (unskilled manual vs clerical/professional)

MOCGAP = Gap between mother's occupations (non-earning vs clerical/professional)

AGEGAP = Gap between age groups (fourth vs first quartile)

DISCUSSION

The analysis based on data from 60 Indonesian primary schools in 1996-1997 provides contribution to the discussion about the equity of pupil attainment progress. Related to the attainment at the time, gender differences appeared consistently across the grades to be significant. These findings were in line with many studies in primary level that girls performed better than boys. Parker (1997:504) study on engendering school children in Bali (another part of Indonesia) may illustrate the acceptable reason for the findings. She

explains that at school the typical behaviours are as follows: "... in classrooms, girls are quiet and well-behaved at the front and boys are noisier and more active at the back ...". And the behaviours outside the schools:

... girls are always at home and boys are out 'getting experience', is not only in Bali but also in most part of Indonesia. School-age girls are nearly always at home in out-of-school time, it is expected that they will help with housework. However, boys roam the village, fishing, hunting, playing games, having adventures in all-boy bands (Parker, 1997: 509).

As the result of the habits, besides the teacher has a good impression about the girls that may affect into good grades, girls have more time for studying at home than boys that influence their cognitive achievement. Ardhana (1980) even ended up to the same conclusion with different strategies. He found that although boys have higher scores than girls in formal thinking, girls attained better due to their obedience, attitudes, honesty, and diligence in doing the school works at home and school. Culturally, Indonesian parents play important roles for their children educational outcomes. Having high scores in academic achievement is an important business for most urban parents and schools. Parents are struggling hard to raise the attainment level of the child by hiring other people to teach child outside the school hours. Schools also were striving to raise the pupil achievement in order to have better name and prestige that may affect enrolment of new intake and school income in the subsequent years. Therefore children of better educational and of the clerical and professional parents outperformed those of categories of parents, especially at Grade 4 and 6.

If the variable of age was treated as a continuous one, probably the explanation would be the younger the children the higher their achievement. However, the explanation may be odd related to the findings in other countries without any clear reason. The data showed that there were wide ranges of age in each grade. In many countries, the older the child the more mature s/he is, the better understanding s/he has and so the higher scores s/he obtains. Actually this Indonesian case is much related to the pupil promotion policies determined by the government. The retention at primary schools does not make a child improve even worsen the attainment and progress. For small children, retention could affect their attitudes, motivation, increasing the boredom, and also be blamed by the family that could affect them to feel being rejected.

On the child progress, apparently the parental social status (education and occupation) did not make a difference except the child of the non-earning mother at Grade 4 and of unskilled manual father at Grade 5. But again pupil gender and age keep on differentiating the learning progress. The findings re-stressed out the meaning of engendering process and retention during the school year.

CONCLUSION

All the findings discussed above underpin the message of inequity among the children in upper grades of primary schools. The inequity creates the gap between categories. If the gap at pupil level is extracted to the school level, then some possible conclusions may be drawn. The gaps of father and of mother occupations at Grade 4 give clues that some structural inequity happened for children progress at that grade during the school year. Perhaps special attention is needed related to different parental encouragement on learning due to their occupations. The disadvantaged children were stumbled in their progress and needed additional attention and help. The structural inequity did not affect the pupil progress at Grade 5 perhaps because of from that grade the socialisation among peers were more influencing than their family social status. However at Grade 6, the pupil progress seemed to be affected by the structural inequity of the individual background, gender, and age. We need some more studies in the future to explain this tendency from the cultural, sociological, psychological, and some other possible aspects.

REFERENCES

- Aitkin, M. & Longford, N. 1986. Statistical Modelling Issues in School Effectiveness Studies. *The Journal of the Royal Statistical Society Series A (General)*, 149 (Part 1): 1-43.
- APPEAL 1991. *National Studies: Indonesia*. Bangkok: UNESCO Principal Regional Office for Asia and the Pacific.
- Ardhana, I.W. 1983. *Kesanggupan Berpikir Formal A La Piaget dan Kemajuan Belajar di Sekolah*. Unpublished doctorate dissertation. Malang: PPS IKIP Malang.
- Beeby, C.E. 1979. *Assessment of Indonesian Education: A Guide in Planning*. Wellington: NZCER in association with Oxford University Press.
- BPS. 1996. *Penduduk Jawa Timur Hasil Survei Penduduk Antar Sensus 1995 (SUPAS '95)*. Surabaya: Kantor Statistik BPS Propinsi Jawa Timur.
- Buchori, M. 1994. *Pendidikan dalam Pembangunan*. Jakarta: IKIP Muhammadiyah Jakarta Press & Tiara Wacana Yogya.

- Creemers, B. 2000. Report of a One-Day Discussion by Indonesian and Dutch Experts: Basic Education in Indonesia. *Reflexie*, 3 (2): 13-19.
- Department of Information, Republic of Indonesia. 1985. *The Women of Indonesia*. Jakarta: Percetakan Negara RI.
- Goldstein, H. 1995. *Multilevel Statistical Model*. London: Edward Arnold, A Division of Hodder Headline PLC.
- Goldstein, H. 1997. Methods in School Effectiveness Research. *School Effectiveness and School Improvement*, 8 (4): 369-395.
- Goldstein, H. 1998. *Models for Reality: New Approaches to the Understanding of Educational Processes*. A Professorial Lecture Delivered at the Institute of Education University of London, 1 July.
- Goldstein, H. & McDonald, R.P. 1987. A General Model for the Analysis of Multilevel Data. *Psychometrika*, 53 (3): 455-467.
- Goldthorpe, J.H. & Hope, K. 1978. *The Social Grading of Occupations: A New Approach and Scale*. Oxford: Clarendon Press.
- Gray, J. 1998. *The Contribution of Educational Research to the Cause of School Improvement*. A Professorial Lecture Delivered at the Institute of Education University of London, 29 April.
- Harber, C. & Davies, L. 1997. *School Management and Effectiveness in Developing Countries: the Post-Bureaucratic School*. London: Cassell.
- Heyneman, S.P. 1986. *The Search for School Effects in Developing Countries: 1966-1986*. Washington, D.C: The World Bank.
- Heyneman, S.P. 1989. Multilevel Methods for Analyzing School Effects in Developing Countries. *Comparative Education Review*, 33 (4): 498-504.
- Hill, P. & Rowe, K.J. 1996. Multilevel Modelling in School Effectiveness Research. *School Effectiveness and School Improvement*, 7 (1): 1-34.
- Hughes, D. 1992. Social Class and Educational Disadvantage: Are the Schools to Blame? In S. Brown & S. Riddell (Eds). *Class, Race, and Gender in Schools*. Glasgow: SCRE.
- Joni, T.R. 1993. Pendekatan Cara Belajar Siswa Aktif: Acuan Konseptual Peningkatan Mutu Kegiatan Belajar-Mengajar. In C.R. Semiawan & T.R. Joni (Eds.). *Pendekatan Pembelajaran: Acuan Konseptual Pengelolaan Kegiatan Belajar-Mengajar di Sekolah*. Jakarta: Konsorsium Ilmu Pendidikan - Ditjen Dikti - Depdikbud.
- Kaluge, L., Sammons, P., Sylva, K. & Siraj-Blatchford, I. 2000. *The Class/School Variation in a Developing Country*. Paper Presented at the International Congress for School Effectiveness and Improvement 2000, Hong Kong, January 4-8.
- Leigh, B. 1991. Making the Indonesian State: The Role of School Texts. *Review of Indonesian and Malaysian Affairs*, 25 (1): 17-43.

- Lockheed, M.E. & Levin, H.M. 1993. Creating Effective Schools. In H.M. Levin & M.E. Lockheed (Eds.). *Effective Schools in Developing Countries*. London: The Falmer Press.
- Lockheed, M.E. & Vespoor, A.M. 1992. *Improving Primary Education in Developing Countries*. Oxford: Oxford University Press for World Bank.
- Moegiadi & Jiyono. 1994. Indonesia: System of Education. In T. Husen & T.N. Postlethwaite (Eds.). *The International Encyclopedia of Education*. Oxford: Pergamon.
- Moegiadi, Tangyong, A.F. & Gardner, R. 1994. The Active Learning through Professional Support (ALPS) Project in Indonesia. In A. Little, W. Hoppers & Gardner, R. (Eds.). *Beyond Jomtien: Implementing Primary Education for all*. London: Macmillan.
- Mortimore, P. 1995. *Effective Schools: Current Impact and Future Potential*. The Director's Inaugural Lecture Delivered at the Institute of Education University of London, 7 February.
- Mortimore, P., Sammons, P., Stoll, L., Lewis, D. & Ecob, R. 1988. *School Matters: The Junior Years*. Wells: Open Books.
- Parker, L. 1992. The Quality of Schooling in a Balinese Village. *Indonesia*, 54 (October): 95-116.
- Parker, L. 1997. Engendering School Children in Bali. *Journal of the Royal Anthropological Institute*, 3 (3): 497-516.
- Paterson, L. 1992. Social Class in Scottish Education. In S. Brown & S. Riddell (Eds.). *Class, Race, and Gender in Schools*. Glasgow: SCRE.
- Plewis, I. 1997. *Statistics in Education*. London: Arnold, A Member of the Hodder Headline Group.
- Pusat Perbukuan. 1990. *Lima Repelita Pendidikan dan Kebudayaan*. Jakarta: Departemen Pendidikan dan Kebudayaan.
- Riddell, A.R. 1989. An Alternative Approach to the Study of School Effectiveness in Third World Countries. *Comparative Education Review*, 33 (4): 481-497.
- Riddell, A.R. 1997. Assessing Designs for School Effectiveness Research and School Improvement in Developing Countries. *Comparative Education Review*, 41 (2): 178-204.
- Rutter, M., Maughan, B., Mortimore, P. & Ouston, J. 1979. *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*. London: Open Books.
- Semiawan, C.R. 1991. Strategi Pembelajaran yang Efektif dan Efisien. In C.R. Semiawan & Soedijarto (Eds.). *Mencari Strategi Pengembangan Pendidikan Nasional Menjelang Abad XXI*. Jakarta: Penerbit PT Grasindo.
- Shaeffer, S. 1990. *Educational Change in Indonesia: a Case Study of Three Innovations*. Ottawa: The International Development Research Centre.
- Soedijarto 1993. *Memantapkan Sistem Pendidikan Nasional*. Jakarta: Penerbit PT Gramedia Widiasarana Indonesia.

- Soegiyanto, S. 1984. *Education and National Development: A Study of the Influence of Schooling, Student Background and Academic Ability on Student Academic Achievement in Indonesian Public General Senior High Schools*. Unpublished PhD dissertation. Florida: The Florida State University.
- Suryadi, A. 1993. *Improving the Educational Quality of Primary Schools: Assessment of School Quality and Students' Achievement in Indonesian Primary Schools*. Educational Resource Information Centre (ERIC), ED 356545.
- Suryadi, A., Green, M. & Windham, D.M. 1992. Teacher Quality as a Determinant of Differential Mathematics Performance among Poor-Rural Children in Indonesian Junior Secondary Schools. *Majalah Demografi Indonesia*, 19 (37): 29-50.
- Tangyong, A.F., Wahyudi, Gardner, R. & Hawes, H. 1989. *Quality Through Support for Teachers: A Case Study from Indonesia*. Jakarta: Published jointly by Office of Educational and Cultural Research and Development, Ministry of Education and Culture, Indonesia and Department of International and Comparative Education, University of London.
- Tilaar, H.A.R 1995. *50 Tahun Pembangunan Pendidikan Nasional 1945-1995: Suatu Analisis Kebijakan*. Jakarta: Penerbit PT Gramedia Widiasarana Indonesia.
- Tilaar, H.A.R. 2000. Salient Problems and Issues Facing Indonesian Education Today. Paper Presented for FINED Seminar, Jakarta, March 8.
- Tymms, P. 1993. Accountability - Can it be Fair? *Oxford Review of Education*, 19 (3): 291-299.
- Wiliam, D. 1998. Making International Comparisons: the Third International Mathematics and Science Study. *British Journal of Curriculum and Assessment*. 8 (3): 33-38.