学位論文の要旨（論文の内容の要旨）
Summary of the Dissertation (Summary of Dissertation Contents)

論 文 題 目
Dissertation title: Multiple Indicators of School Effectiveness in Rural Malawi: A Multilevel Event History Analysis

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1. Background

School effectiveness research (SER) has been conducted in both developed and developing countries since the report by Coleman et al. (1966). In general, SER focuses on student achievement as an output indicator of school effectiveness. However, as well as low student achievement, high repetition rates, dropout rates, and transfer rates are significant issues in most developing countries. Accordingly, the present study considered using achievement growth, repetition rates, dropout rates, and transfer rates in conjunction with achievement as indicators of school effectiveness. Employing data from rural Malawi, this study aimed to examine the relationships among those indicators.

2. Objective

The present study examined the relationships among multiple indicators of school effectiveness at the primary school level in Malawi: achievement, achievement growth, repetition rates, dropout rates, and transfer rates. The following two research questions were answered:

1. What is the relationship between achievement and the other indicators? Are schools that are effective in raising achievement also effective in promoting achievement growth and reducing repetition, dropout, and transfer rates?
2. What school-level factors predict the indicators after controlling for student-level factors? In addition, are the factors that influence achievement the same as those that influence the other factors?

3. Methodology

Fieldwork data were obtained twice: January to March (2013, Phase 1) and during the same period (2014, Phase 2). In all, 30 public primary schools in the Nkhata Bay District were selected as the sample using clustering according to the pass rate in the national examination from 2010 to 2012. Over the 2-year period, the data of 1,449 grade 5 students and 1,294 grade 7 students were analyzed by means of an event history method. In this study, grade 5 students constituted Cohort 1, and grade 7 students Cohort 2. In Phase 1, the 1,449 grade 5 students and 1,294 grade 7 students took English and mathematics tests and completed questionnaires. In addition, 30 head teachers, 224 teachers, and 169 members of school management committees (SMCs) and parent-teacher associations (PTAs) filled in questionnaires. In Phase 2, 1,367 grade 6 and 1,308 grade 8 students (including students who were promoted to grade 6 in Cohort 1 and grade 8 in Cohort 2) took English and mathematics tests and completed questionnaires. Likewise, 30 head teachers, 224 teachers, and 153 SMC and PTA members filled in questionnaires.

Correlation analyses and scatter plots were conducted to analyze the relationship between achievement and the other indicators. Multilevel linear regression and multilevel logistic regression were employed to examine the factors that influenced the indicators. Two models were constructed: Model 1 as the school composition model and Model 2 as the school input model.

4. Findings

4.1 What is the relationship between achievement and the other indicators? Are schools that are effective in raising achievement also effective in promoting achievement growth and reducing repetition, dropout, and transfer rates?

In Cohort 1, there was a negative relationship between achievement and achievement growth; no relationships were observed between achievement and the other indicators. Schools that were effective in raising achievement were ineffective in promoting achievement growth, and they were not always effective in reducing repetition, dropout, and transfer rates.

In Cohort 2, no relationship was evident between achievement and the other indicators. Schools that were effective in raising achievement were not always effective in promoting achievement growth and reducing repetition, dropout, and transfer rates.

4.2 What school-level factors predict the indicators after controlling for student-level factors? In addition, are the factors that influence achievement the same as those that influence the other factors?

Schools were found to exert a difference in achievement growth in Cohort 1 and in achievement, repetition rates, and dropout rates in both cohorts; schools were unable to affect achievement growth in Cohort 2 or transfer rates in either cohort.

In Cohort 1, no school-level variables were found to be dominant factors in achievement, achievement growth, repetition rates, and dropout rates; a school location in a semi-urban area was a significant factor for transfer rates. In Cohort 2, no school-level variables were found to be dominant factors in achievement growth and dropout rates. The following were found as significant factors in Cohort 2: lower mean number of grade repetitions for achievement; higher mean achievement and larger class size for repetition rates; and higher mean number of grade repetitions and schools being located in semi-urban areas for transfer rates.

In summary, school-level variables that influenced achievement were not always the same as those that affected repetition, dropout, and transfer rates. In addition, they were not always the same between the cohorts.

5. Discussion

1. Types of Data Employed in School Effectiveness Research

The present study employed data obtained from field research, which employed an event history analysis that followed the same students over a period of 2 years. This approach offered a couple of advantages: (1) it allowed for the identification of achievement growth as well as repetition, dropout, and transfer rate and (2) it accommodates data collection whereby independent variables affect dependent variables with a predetermined property expressed at a specific time (Berry and Berry, 1990).

2. Transition Rates from Grade to Grade

In the two cohorts, only around 50% of the students were promoted to the next grade—a notably low rate. Further, approximately 25% of the students repeated the same grade, which was relatively high. There were apparent differences in understanding the notion of dropout between the researcher and the Malawi people. When collecting the relevant data, the researcher presented questions to the schools in two ways: about students who had been absent for 15 consecutive days and those who had dropped out of school. The results indicated dropout rates of approximately 5%–6%. At 16%–19%, transfer rates were found to be unexpectedly high.

3. Need for Simultaneous Consideration to Improve Achievement and Completion Rates

The government, schools, communities, and parents frequently consider academic achievement the most significant output of schooling, and so they tend to place the emphasis on that factor alone. As a result, some schools produce many repeaters and dropout students.

4. Effect of the national examination

Schools with the highest pass rates for the national examination also had the highest repetition rates among the sampled schools. Schools with higher mean achievement also tended to have higher repetition rates. This suggests that some high-achieving schools produced many repeaters so as to maintain their pass rates in the national examination.

5. School or student matters

The results of the present study are in accordance with those of Heyneman and Loxley (1983) with respect to achievement, achievement growth, repetition rates, and dropout rates. School-level factors were found to exert a large influence over those indicators.

6. School-level factors that influenced the indicators

Owing to the small sample size of the schools, it was not possible to analyze other school-input and school-process factors. Examining those factors would demand further studies with a larger sample.

7. Need to improve other school-level factors

School-level variables that influenced achievement were not always the same as those that affected achievement growth and repetition, dropout, and transfer rates. This implies that policies toward improving achievement growth and reducing repetition, dropout, and transfer rates need to adopt different strategies from those for improving achievement.

6. Conclusion

School effectiveness research in developing countries has concentrated on achievement as an output indicator. However, this single focus ignores other significant schooling outputs. From the sample with two cohorts in rural Malawi, the present study examined the relationship among several indicators of school effectiveness, including achievement, achievement growth, repetition rates, dropout rates, and transfer rates. It was concluded that in addition to achievement, other indicators need to be used toward improving the current situation in Malawi. It was evident that high-achieving schools were not always effective in the above indicators. The factors that influenced achievement were not always the same as those that affected the other indicators. The results of this study underline the importance of considering multiple indicators of school effectiveness in Malawi. These findings may also apply to other developing countries with similar situations and may provide clues to addressing related issues in such places.

The present study raises a few questions. First, how can we improve student achievement while at the same time reducing repetition and dropout rates? One of the answers here is that teachers need to develop evaluation skills with respect to grade repetition and also appropriate teaching skills such that students are able to acquire the basic skills at each grade. Second, what school-level factors influence achievement growth and repetition, dropout, and transfer rates? Owing to the small school sample size, the present study was unable to analyze school-input and process factors other than mean achievement, mean socioeconomic status, mean number of grade repetitions, class size, school location, and school facilities. Lastly, what is the relationship between the examined indicators and the national examination in Malawi? Because of the short research period, the present study was unable to investigate this relationship, which will need to be addressed in future research.