

Chapter 2

Earlier Meta-Analyses

Jaap Scheerens and Rien Steen

Introduction

In this chapter we will summarise meta-analyses that we conducted earlier (Scheerens and Bosker 1997; Scheerens et al. 2007). In the final section a brief overview of the results of other meta-analyses will be given.

Description of Earlier Conducted Meta-Analyses by the Authors

In this section a description is given of quantitative analyses conducted on the basis of a data set that combined studies from two previous meta-analyses, namely those by Scheerens and Bosker (1997) and by Scheerens et al. (2005). Combined results are presented in Scheerens et al. (2007). Both data sets were re-checked and scrutinised, which in some cases led to a different “scoring” of the basic effect sizes. Only associations of school and instructional variables with cognitive educational achievement were used in the analyses. The meta-analyses were focused on school and instructional conditions expected to be positively associated with student achievement. Only results on instructional leadership will be presented here.

J. Scheerens (✉) · R. Steen
Department of Educational Organization and Management,
University of Twente, P.O. Box 217, 7500 AE Enschede,
The Netherlands
e-mail: J.Scheerens@utwente.nl

R. Steen
e-mail: R.Steen@utwente.nl

The size of the data base for the school level factors is shown in Table 2.1.

Table 2.1 Numbers of studies and replications for the school level variables (“replications” are associations between the school variable in question and student achievement)

	Publications	Replications
“Old” studies 1985–1994	83	511
“New” studies 1995–2005	72	700
Total	155	1,211

Methods

Literature Search

A meta-analysis relies on collecting as many studies as possible regarding the topic of interest. The search methods included searches on the Web of Science, and the ERIC and ERA databases. The search was focused at articles published between 1985 and 2005. In addition, the literature database of ECER conferences was examined. In the search the following key words were used: school effectiveness, learning results, effectiveness, effective teaching, effective instruction, teacher effectiveness, educational effectiveness, school effectiveness and student achievement. Finally, recent reviews and books on school effectiveness were checked in order to find additional relevant literature (‘snowball method’).

The first step of this search resulted in several hundreds of publications. From these publications, about one-third appeared not to be useful for our purposes, while from one-sixth of all publications it could not be determined whether or not they contained useful information. These were articles that appeared to be inaccessible. This left us with 155 articles that contained information relevant for the purposes of our study in the domain of school effectiveness and 177 articles in the domain of teaching effectiveness. These articles were analysed with regard to effect size presented on student achievement outcomes and relevant school and teaching effectiveness variables, while at the same time data were collected on particular study characteristics.

Type of Meta-Analyses

A meta-analysis can be conducted in different ways. In this study two types of meta-analyses were carried out. First, a so called “vote-counting” procedure took place applied to the school level variables. Vote counting comes down to

counting the number of significant (positive and negative) associations between a dependent variable and a specific independent variable of interest from a given set of studies. More specifically it was examined for each selected study whether or not the test statistic concerning a particular variable of interest exceeded a conventional critical value at a given significance level. In our case a level of $\alpha = 0.05$ was used. It might be considered to take the individual study as the unit of analysis. However, it must be noted that some studies deal with multiple outcome indicators and/or multiple indicators of concepts relating to teacher and/or school effectiveness. For example, when a (hypothetical) study is using two indicators on the factor time (e.g. time spent on mathematics and time spent on reading) and assesses the impact of each indicator on two outcomes (e.g. mathematic test and reading test), there are four relationships (2 process indicators \times 2 outcomes). These four relationships were combined into two relationships by averaging the effects of both indicators for each of the outcomes. The resulting two relationships were examined for their direction and significance and, consequently, these two results (or replications) were included in our final data set. A similar approach was used when one indicator is used in studies carried out in several countries, i.e. the relationship for each country is entered as a separate replication.

The conventional vote-counting procedure has been criticised on several grounds. First, it does not incorporate sample size into the vote. As sample sizes increases, the probability of obtaining statistically significant results increases. Second, the procedure does not allow the researcher to determine which treatment is the best in an absolute sense. Although information is found about the best treatment, it is unknown what the margin of superiority is; it does not provide an effect size estimate. Third, the procedure has a very low power for the range of sample sizes and effect sizes most common in the social sciences. When effect sizes are medium to small, the conventional vote-counting procedure frequently fails to detect the effects. Moreover, for medium to small effect sizes, the power of the conventional vote-counting procedure tends to zero as the number of studies to be included increases (Bushman 1994). Finally, when a vote-counting procedure is followed, associating counts with moderator variables (study or content characteristics that might influence whether a replication is significant or not) can only be done in a relatively crude way, as compared to procedures in which effect sizes for each replication are calculated.

Given this critique, a more refined approach has additional value. Such an approach makes it possible to estimate the 'true' effect sizes concerning the association of particular independent variables (in our case process indicators that represent a particular effectiveness-enhancing condition e.g. parental involvement) and dependent variables (school effects, in our case, e.g. student achievement scores in mathematics). Moreover, such an approach makes use of the fact that effect sizes vary among studies. Analysing this variation makes it possible to establish whether specific study characteristics may account for it. We have applied such an approach to our set of studies and replications as well.

In fact, next to the quantitative approach, the vote-counting procedure was only used for the meta-analysis on school factors, whereas for the meta-analysis of teaching effectiveness studies we used the multi-level quantitative technique only.

More specifically, a multilevel approach to meta-analysis (Raudenbush and Bryk 1985; Hox 2002) was applied. In this approach the selected studies are considered to be a sample from the population of studies, in our case this regards the relationship between specific school effectiveness indicators and student outcomes. Nested under each study are the secondary units: the schools. Each study can then be viewed as an independent replication. This concept could be used but would not solve the problem of biased estimates due to unidentified dependencies when applying multiple results from one study, e.g. when effects are reported for mathematics and language achievement in one study while using the same sample of schools and students. To deal with this problem, instead of the two-level model for meta-analysis a three-level model was used, in which the highest level of the studies is referred to as the across-replication level, and the multiple results within a study as the within-replication level. The principal advantages of the statistical meta-analysis employed here are threefold: first, the information from each study is weighted by the reliability of the information, in this case the sample size and second, dependencies within study replications are controlled for. Third, the method applied enables us to examine which study characteristics (or moderators) are responsible for the variation in effect sizes.

Results on School Leadership

Dependent and moderator variables

Dependent variables used in our study were student outcomes in the cognitive domain, namely student achievement results in mathematics, language, and other subjects, including science.

As it was stated in the above, our method allows us to model effect sizes as a function of study characteristics. A first relevant characteristic deals with the question of whether studies have used a language, a mathematics test score, or another score to assess student achievement. This moderator provides insight into the question as to which learning outcomes are most 'malleable' by school characteristics. Previous studies (Scheerens and Bosker 1997) suggest that schools have more impact in the area of mathematics than in the area of language. In our study 45.3% of our data relate to the use of a math test, 33.8% of all results to a language test.

Apart from examining the impact of the type of test employed, we also investigated the effects of the country in which the study was conducted (the United States of America, the Netherlands, or other countries) and the education

level or sector in which the study took place (primary or secondary education). Results regarding these study characteristics provide insight into the question of which context is most ‘susceptible’ for school effectiveness indicators. Studies from the past show that, by and large, effect sizes are higher in US-schools and in primary schools (Scheerens and Bosker 1997, Chap. 6). In our study 33.5% of all effect sizes relate to studies conducted in the US, 24.5% to studies carried out in the Netherlands and 42% to studies conducted in other countries. With regard to school type 63.7% of all results relate to studies carried out in primary schools (36.3% in secondary schools).

The other moderator variables relate to the quality of the studies involved. One of them relates to the issue whether or not studies control for student intake characteristics. Effect sizes are by definition less accurate in case outcomes are not corrected for student intake characteristics. Almost all studies in our database include characteristics such as socio-economic status, age, gender, ethnicity and, in a minority of cases, prior achievement, implying that only in rare cases the dependent variable represents learning gain. In this study 73.2% of our results have a ‘value added’-character. Another feature of school effectiveness research is its reliance on correlation design and consequently on statistical techniques suited to analyse data produced by such a design. With regard to statistical techniques in the nineties the school effectiveness community has witnessed the rise of multi-level analysis, a technique which takes into account the ‘nested’ character of data and therefore yields more precise and accurate results than studies relying on, for example, aggregate data. Nowadays this technique is prevalent in school effectiveness research, although other more traditional techniques are still employed as well. This raises the question of whether studies applying ‘high quality’ techniques such as multi-level analysis yield different results from studies in which more traditional techniques have been used. We therefore included “multi-level/not multi-level” as an additional moderator variable in our analyses. In our study 57.6% of all results are based upon multi-level techniques, the other 42.4% on other techniques.

To indicate the effect of school effectiveness variables, Fisher’s Z transformation of the correlation coefficient was used. Not all studies presented their results in terms of correlations, and therefore all other effect size measures were transformed into correlations, using formulae presented by Rosenthal (1994). For small values of the correlation coefficient, Z_r and r do not differ much, but it should be remembered that all figures presented in the following and indicating effect sizes refer to Z_r . More information about the statistical procedure followed can be found in the appendix.

Vote Counting

The results representing vote counts concerning school leadership are shown in Table 2.2.

Table 2.2 Vote counts, based on replications (%)

	Primary schools			Secondary schools			Subject math			Subject language			Subject other than math and language		
	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+
Instructional leadership	7	84	9	2	94	4	5	88	7	0	98	2	13	71	17
	Country USA			Country the Netherlands			Country other than USA and NLD			Design gross			Design value added		
	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+
Instructional leadership	5	84	11	10	88	3	2	92	6	8	89	3	4	86	11
	Technique multi-level			Technique not multi-level			School level			Teacher level			Total		
	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+	—	n.s.	+
Instructional leadership	1	94	4	8	82	10	5	87	8				5	87	8

— Negative effect, significant at 0.05; n.s. non-significant effect; + positive effect, significant at 0.05

The results across all school level variables (not shown in the table above) indicate that in most cases relationships between school effectiveness indicators and student outcome variables are not significant. This is the case for about 70% of all relationships examined in the study. Only in a minority of cases the relationships between school effectiveness indicators and outcome variables are negative. In total about 4% of all relationships are negatively significant. Around 25% of all relationship examined are positively significant.

As far as *instructional leadership* is concerned, only in 8% of all cases positive, significant relationships are found.

The overall vote-counting results indicate that positive findings are mostly found for studies carried out in the United States and for studies using mathematic tests, studies not employing multi-level techniques and, as was to be expected, for studies using gross, unadjusted outcomes. These results apply for (almost) every school effectiveness indicator examined in this study. More mixed results are found with respect to the moderator variable type of school. Depending on the school effectiveness indicator, sometimes more positive findings are found in studies conducted in primary schools, other times in studies in secondary schools. The same conclusion can be reached with regard to the moderator level of measurement and the question whether or not multi-level analyses were used. As far as instructional leadership is concerned; more significant effects are found in the USA than in other countries, there are more

Table 2.3 Multilevel, empty model

	Number of cases		Mean effect size
	Across replications	Within replications	
Instructional leadership	53	170	0.046*

Effect-sizes marked as * are significant at the 0.10 level

Table 2.4 Multilevel, with moderators as predictors

	Variance								
	Intercept	Secondary	Arithmetic/ math	Language	USA	The Netherlands	Value added	Not multilevel	Class/ teacher level
Instructional leadership	0.052	−0.002	0.009	0.011	0.050	−0.095	0.012	−0.018	−

positive significant effects in primary than in secondary education and more positive significant effects for other subjects than math and language (17% positive vs. respectively 7 and 2%).

Multi-Level Approach

The results of the multi-level approach to meta-analysis at school level are presented in Tables 2.3 and 2.4. Table 2.3 shows the average effect sizes for all independent variables, and results are generalised over all moderator variables, including assessment domains (mathematics, reading and other).

Table 2.4 shows the impact of the various moderator variables. These results show that the overall effect size found in our meta-analyses, based on 170 replications, embedded in 53 studies is 0.046. This is a very low effect size. None of the moderator variables had a statistically significant effect.

Other Meta-Analyses

In this section the results of six meta-analyses are summarised: Witziers et al. (2003), Marzano et al. (2005), Chin (2007), Robinson et al. (2008), Creemers and Kyriakides (2008) and Hattie (2009).

Witziers et al. (2003), used the same data base as Scheerens and Bosker (1997), but added results from IEA studies. Doing so, they obtained an effect size of $r = 0.02$. When taking out the IEA studies this effect size was doubled to $r = 0.04$.

Marzano et al. (2005) conducted a meta-analysis based on 69 studies, all from the USA. They investigated the average (direct) effect of general leadership, a term suggesting that they put all types of school leadership under one head, using one general label. In addition they looked at the effect of 21 more specific leadership responsibilities on student achievement. Expressed as a correlation the average effect size that they found for general leadership was 0.25. The authors compare their results to those of Witziers et al. (2003), who, following a similar approach, found an average effect size of $r = 0.02$. As possible explanations for these strongly different outcomes they offer three lines of reasoning. First, they note that the sample of studies used by Witziers et al. comprised studies from different countries, noting that effect sizes for studies from the USA were higher than those for other countries ($r = 0.11$ for the studies from the USA). As indicated above the Marzano analysis used only studies from the USA. Next they considered that two corrections made by them might have contributed to the lower effect sizes in the study by Witziers et al. (2003). Marzano et al. (2005) followed a procedure that removed outliers and corrected measures of school leadership and student achievement for attenuation, in other words for unreliability in these measures.

The Marzano study has not looked at specific characteristics of studies as possible moderators of the effect sizes found, e.g. subject matter orientation, primary or secondary schools or methodological study characteristics (e.g. correction of student background characteristics, application of multi-level analysis).

Chin (2007), presents a meta-analysis based on 28 studies from Taiwan and the United States. The studies address transformational leadership. Of the 28 studies only 11 have student achievement as the dependent variable. Teachers' job satisfaction and teachers' perception of effectiveness are also used as dependent variables. Effect sizes are expressed in terms of correlations (Fisher's Z). The average effect size for the 11 studies that have included student achievement is 0.49. Effect sizes vary from 0.010 to 0.89. Median effect sizes are about 0.45.

Robinson et al. (2008) conducted a meta-analyses on 22 published studies. Of these 22 studies 12 addressed instructional leadership, five transformational leadership and another five other kind of school leadership concepts. The average effect size, found for instructional leadership was 0.42, expressed in terms of a correlation this would be 0.21. For transformational leadership the effect size was 0.11 ($r = 0.055$), and for the other types of leadership 0.30 ($r = 0.15$). Among the studies that addressed instructional leadership high effect sizes were found for five studies that used between group designs; the other studies showed low to moderate effect sizes. Typically such intergroup comparisons would compare high and low performing schools. Next, effect sizes across studies are reported of five leadership dimensions, namely "establishing goals and expectations" (ES = 0.42), "strategic resourcing" (ES = 0.31), "planning coordinating and evaluating teaching and the curriculum" (ES = 0.42). "promoting and participating in teacher learning and development" (ES = 0.84) and "Ensuring an orderly and supportive environment" (ES = 0.27).

Creemers and Kyriakides (2008, pp. 201–203) computed the average effect size of leadership on the basis of 29 studies, both primary and secondary schools. The

Table 2.5 Summary of results from meta-analyses on school leadership; effect sizes are rendered as correlations between school leadership and student achievement

Meta-analysis by	Leadership concept	Effect size (correlation) (<i>r</i>)
Witziers et al. (2003)	School leadership	0.02
Marzano et al. (2005)	Generalised school leadership	0.25
Chin (2007)	Transformational leadership	0.49
Robinson et al. (2008) (1)	Instructional leadership	0.21
Robinson et al. (2008) (2)	Transformational leadership	0.06
Creemers and Kyriakides (2008)	School leadership	0.07
Hattie (2009)	School leadership	0.18

dependent variable is indicated as student achievement. The average effect size (Fisher's *Z*) they found was 0.068. This low effect size is in line with the effect size found in Scheerens and Bosker (1997), Witziers et al. (2003) and Scheerens et al. (2007), reported previously.

Hattie (2009) summarises the results of 11 meta-analyses (Neumann et al. 1989; Pantili et al. 1991; Gasper 1992; Bosker and Witziers 1995; Brown 2001; Wiseman 2002; Witziers et al. 2003; Waters et al. 2003; Waters and Marzano 2006; Chin 2007; Robinson et al. 2008). Among this list there are some duplications, the two references to Witziers and Bosker, are based on the same data set, which is also the same data set as used for the analyses of Scheerens and Bosker (1997), as referred to in an earlier section of this section. The meta-analysis by Waters and Marzano, has not looked at school principals but at district superintendents. Finally, the study by Neumann at all looked at job satisfaction and other teacher outcomes as dependent variables. The average effect size found is 0.36, which comes down to a correlation of 0.18 of leadership with the dependent variable. Hattie makes much of emphasising that instructional leadership has a much higher effect size than transformational leadership. His basis for doing so is mainly the study by Robinson et al. (2008), summarised in the above, while he reasons away the relatively high effect size found in Chin's meta-analysis of transformational leadership by saying that her conceptualisation of transformational leadership had important elements in common with instructional leadership (Hattie 2009, p. 84).

In Table 2.5 the results of the six meta-analyses are summarised

Witziers et al. (2003), Marzano et al. (2005), Chin (2007), Robinson et al. (2008), Creemers and Kyriakides (2008) and Hattie (2009).

Not including our own recent meta-analysis (with an effect size rounded to 0.05), the average effect size across these meta-analyses comes down to 0.17. When leaving out the outlying value of the meta-analysis by Chin the average effect size would become $r = 0.12$.

References

- Bosker, R. J., & Witziers, B. (1995, January). *School effects, problems, solution and a meta-analysis*. Paper presented at the International Congress for School Effectiveness and School Improvement, Leeuwarden, The Netherlands.
- Brown, L. I. (2001). *A meta-analysis of research on the influence of leadership on student outcomes*. Unpublished Ph.D., Virginia Polytechnic Institute and State University, VA.
- Bushman, B. J. (1994). Vote-counting procedures in meta-analysis. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 193–213). New York: Russell Sage Foundation.
- Chin, J. M.-C. (2007). Meta-analysis of transformational school leadership effects on school outcomes in Taiwan and the USA. *Asia Pacific Education Review*, 8(2), 166–177.
- Creemers, B., & Kyriakides, L. (2008). *The dynamics of educational effectiveness: A contribution to policy, practice and theory in contemporary schools*. New York: Routledge.
- Gasper, S. (1992). Transformational leadership. In integrative review of the literature (Doctoral dissertation, Western Michigan University, 1992).
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.
- Hox, J. J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, N. J.: Lawrence Erlbaum Associates.
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School leadership that works: From research to results*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Neumann, G. A., Edwards, J. E., & Raju, N. S. (1989). Organizational development interventions: A meta-analysis of their effects on satisfaction and other attitudes. *Personnel Psychology*, 42(3), 461–489.
- Pantili, L., Williams, J., & Fortune, J. (1991, April). *Principal assessment: Effective or not? A meta-analytic model*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Raudenbush, S., & Bryk, A. (1985). Empirical Bayes meta-analysis. *Journal of Educational Statistics*, 10(2), 75–98.
- Robinson, V. M. J., Lloyd, C., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership type. *Educational Administration Quarterly*, 44(5), 635–674.
- Rosenthal, R. (1994). Parametric measures of effect size. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 231–244). New York: Russell Sage Foundation.
- Scheerens, J., & Bosker, R. (1997). *The foundations of educational effectiveness*. Oxford: Pergamon.
- Scheerens, J., Luyten, H., Steen, R., & Luyten-de Thouars, Y. (2007). *Review and meta-analyses of school and teaching effectiveness*. Enschede: Department of Educational Organisation and Management, University of Twente.
- Scheerens, J., Seidel, T., Witziers, B., Hendriks, M., & Doornekamp, G. (2005). *Positioning the supervision frameworks for primary and secondary education of the Dutch Educational Inspectorate in current educational discourse and validating core indicators against the knowledge base of educational effectiveness research*. Enschede/Kiel: University of Twente/ Institute for Science Education (IPN).
- Waters, T. J., & Marzano, R. J. (2006). *School district leadership that works: The effect of superintendent leadership on student achievement*. Denver, CO: Mid-continent Research for Education and Learning.
- Waters, T., Marzano, R. J., & McNulty, B. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement. A working paper*. Mid-continent Regional Educational Lab., Aurora, CO. [BBB23081]. Research for Education and Learning.

- Wiseman, A. W. (2002, February). *Principals' instructional management activity and student achievement: A meta-analysis*. Paper presented at the Annual Meeting of the Southwestern Educational Research Association, Austin, TX.
- Witziers, B., Bosker, R. J., & Krüger, M. L. (2003). Instructional leadership and student achievement: The elusive search for an association. *Educational Administrative Quarterly*, 39(3), 398–425.

Annex: Research Articles Used for the Meta-Analyses by the Authors

Articles on School Leadership (1985–1995)

- Bamburg, J. D., & Andrews, R. L. (1991). School Goals, Principals and Achievement. *School Effectiveness and School Improvement*, 2(3), 175–191.
- Bedford, B. (1993). *School effectiveness characteristics and student achievement: a study of relationships in Georgia Middle Schools*. ERIC document No. EA 020 722.
- Blank, R. K. (1987). The role of principal as leader: Analysis of variation in leadership of urban high schools. *Journal of Educational Administration*, 81(2), 69–80.
- Brandsma, H., & Knuver, A. (1989). De invloed van school-en klaskenmerken op rekenprestaties in het onderwijs. In J. Scheerens & J. C. Verhoeven (red.), *Schoolorganisatie, beleid en onderwijskwaliteit*.
- Brewer, D. J. (1993). Principals and student outcomes. *Economics of Education Review*, 12(4), 281–292.
- Cantu, M. (1994). A study of principal instructional leadership behaviors in successful and non-successful urban elementary schools. Unpublished doctoral thesis. *Dissertation Abstract International*, 55(7), January 1995. Austin: University of Texas.
- Couch, J. C. (1991). *A study of student achievement and how it relates to the principal in the role of instructional leader*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Lexington, New York.
- Durland, M., & Teddlie, Ch. (1996). *A network analysis of the structural dimensions of principal leadership in differentially effective schools*. Paper presented at the annual meeting of the AERA, New York.
- Eberts, R. W., & Stone, J. A. (1988). Student achievement in public schools: do principals make a difference. *Economics of Education Review*, 7(3), 291–299.
- Ellet, C. D., & Logan, C. S. (1990). *Analyses of school learning environments: organizational coupling, robustness and effectiveness*. Paper presented at the AERA, Boston.
- Friedkin, N. E., & Slater, M. R. (1994). School leadership and performance: a social network approach. *Sociology of Education*, 67(2), 139–157.
- Gouldring, E. B., & Pasternak, R. (1994). Principals' coordinating strategies and school effectiveness. *School Effectiveness and School Improvement*, 5(3), 239–253.
- Grift, W. van de (1987). Zelfpercepties van onderwijskundig leiderschap en gemiddelde leerprestaties. In J. Scheerens & W. G. R. Stoel (Eds.), *Effectiviteit van onderwijsorganisaties*. Lisse: Swets & Zeitlinger.
- Grift, W. van de (1990). Instructional leadership and academic achievement in elementary education. *School Effectiveness and School Improvement*, 1(3), 26–40.
- Grisay, A. (1995). *Effective and less effective junior schools in France*. Paper presented at the annual meeting of the ICSEI, Leeuwarden.
- Guillemard, L., Palmer, D. J., & Wilson, V. L. (1994). *Discrimination of average, effective and ineffective intermediate and secondary schools from ratings of school characteristics by*

- parents, students, teachers and principals. Paper presented at the annual meeting of the AREA, New Orleans.
- Hallinger, P. (1989). *What makes a difference? School context, principal leadership and student achievement*. Paper presented at the annual meeting of the AERA, San Francisco.
- Heck, R., Marcoulides, G. A., & Lang, P. (1991). Principal instructional leadership and school achievement: The application of discriminant techniques. *School Effectiveness and School Improvement*, 2(2), 115–135.
- Hill, P. W., Rowe, K. J., & Holmes-Smith, P. (1995). *Factors affecting students' educational progress: Multilevel modeling of educational effectiveness*. Paper presented at the annual meeting of the ICSEI, Leeuwarden.
- Hofman, R. H. (1993). *Effectief schoolbestuur: een studie naar de bijdrage van schoolbesturen aan de effectiviteit van scholen*. Groningen: Rijksuniversiteit Groningen, dissertatie.
- Houtveen, Th., Vermeulen, C., & Van der Grint, W. (1993). *Bouwstenen voor onderzoek naar de kwaliteit van scholen*. Utrecht: ISOR.
- Hoy, W. K., Tater, J. C., & Bliss, J. R. (1990). Organizational climate, school health, and effectiveness: a comparative analysis. *Educational Administration Quarterly*, 26(3), 260–279.
- Hunter, C. (1994). Los Angeles unified school district middle school principals' instructional behaviors and academic achievement. Unpublished doctoral dissertation. *Dissertation Abstracts International*, 55(12), June 1995. Los Angeles: Peppardine University.
- Krug, S. E. (1992). *Instructional leadership, school instructional climate and student learning outcomes*. Department of Education, Washington, DC: Office of Educational Research and Improvement.
- Leitner, D. (1994). Do principals affect student outcomes: an organizational perspective. *School Effectiveness and School Improvement*, 5(3), 219–238.
- Mandeville, G. K., & Kennedy, E. (1991). The relationship of effective school indicators and changes in the social distribution of achievement. *School Effectiveness and School Improvement*, 2, 14–33.
- Mortimore, P., Sammons, P., Stoll, L., Lewis, D., & Ecob, R. (1988). *School matters: the junior years*. Somerset: Open Books.
- Postlewaithe, N., & Ross, K. (1992). *Effective schools in reading; implications for educational planners*. Den Haag: IEA.
- Reezigt, G., Guldmond, H., & Creemers, B. (1995). *The empirical validity of the school effectiveness model*. Paper presented at the annual meeting of the ECER, Bath.
- Rowan, B. P., Chiang, F. S., & Miller, R. J. (1996). *Using research on employee performance to study teaching effectiveness: results from an analysis of teachers effects on student achievement in mathematics using NELS: 88 data*. Paper presented at the annual meeting of the AERA, New York.
- Rymenans, R., Geudens, V., Coucke, H., Van den Bergh, H., & Daems, F. (1996). *Effectiviteit van Vlaamse secundaire scholen: een onderzoek naar de effecten van het onderwijsaanbod, de tijdsbesteding aan het Nederlands en de schoolkenmerken op de lees- en schrijffprestaties*. Antwerpen: Universiteit van Antwerpen.
- Sontag, L., & Meijnen, G. W. (1995). De invloed van school- en klaskenmerken op de cognitieve en lingu vaardigheden van kleuters. *Pedagogische Studiën*, 72(4), 258–272.
- Tam, W. M., & Cheng, Y. C. (1995). *School environment and student performance*. Paper presented at the annual meeting of the ICSEI, Leeuwarden.
- Teddlie, C., & Stringfield, S. (1993). *Schools make a difference. Lessons learned from a 10 year study of school effects*. New York: Teachers College Press.
- Vermeulen, C. J. (1987). De effectiviteit van 17 Rotterdamse stimuleringsscholen. *Pedagogische Studiën*, 64, 49–58.
- Werf, M. P. C. van der, & Weide, M. G. (1991). Effectief onderwijs voor allochtone leerlingen. *Tijdschrift voor Onderwijsresearch*, 16(4), 231–243.
- Werf, M. P. C. van der, & Weide, M. G. (1993). Effectieve voorrangskkenmerken in de school en klas. *Pedagogische Studiën*, 70, 108–221.

- Witziers, B. (1992). *Coördinatie binnen scholen voor voortgezet onderwijs*. Enschede: Universiteit Twente, dissertatie.
- Yelton, B. T., Miller, K., & Ruscoe, G. C. (1994). *The stability of school effectiveness: comparative path models*. Paper presented at the annual meeting of the AERA, New Orleans, 4–8 April.

Articles on School Leadership (1995–2005)

- Creemers, B., & Werf, G. v. d. (2000). Economic viewpoints in educational effectiveness: Cost-effectiveness analysis of an educational improvement project. *School Effectiveness and School Improvement*, 11(3), 361–384.
- D'Agostino, J. V. (2000). Instructional and school effects on students' longitudinal reading and mathematics achievements. *School Effectiveness and School Improvement*, 11(2), 197–235.
- Deinum, J. F. (2000). *Schoolbeleid, instructie en leerresultaten*. Groningen: GION.
- Griffith, J. (2003). Schools as organizational models: Implications for examining school effectiveness. *Elementary School Journal*, 104(1), 29–47.
- Grift, W. van de, & Houtveen, A. A. M. (1999). Instructional leadership and pupil achievement in primary education. *School Effectiveness and School Improvement*, 10(4), 373–389.
- Grift, W. van de, Houtveen, T., & Vermeulen, C. (1997). Instructional climate in Dutch secondary education. *School Effectiveness and School Improvement*, 8(4), 449–462.
- Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *Elementary School Journal*, 96(5), 527–549.
- Heck, R. H., & Marcoulides, G. A. (1996). School culture and performance: Testing the invariance of an organizational model. *School Effectiveness and School Improvement*, 7(1), 76–95.
- Hill, P. W., & Rowe, K. J. (1998). Modelling student progress in studies of educational effectiveness. *School Effectiveness and School Improvement*, 9(3), 310–333.
- Hofman, R. H., Hofman, W. H. A., & Guldmond, H. (1999). Social and cognitive outcomes: A comparison of contexts of learning. *School Effectiveness and School Improvement*, 10(3), 352–366.
- Hofman, R. H., Hofman, W. H. A., & Guldmond, H. (2001). The effectiveness of cohesive schools. *International Journal of Leadership in Education*, 4(2), 115–135.
- Jacob, B. A., & Lefgren, L. (2004). The impact of teacher training on student achievement- quasi-experimental evidence from school reform efforts in Chicago. *Journal Of Human Resources*, 39(1), 50–79.
- Leithwood, K., & Jantzi, D. (2000). Principal and teacher leadership effects: A replication. *School Leadership and Management*, 20(4), 415–434.
- Levačić, R., Steele, F., Smees, R., & Malmberg, L. (2003, 11–13 September). *The relationship between school climate & head teacher leadership, and pupil attainment: Evidence from a sample of English secondary schools*. Paper presented at the British Educational Research Association Annual Conference, Edinburgh.
- Marks, H. M., & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational Administration Quarterly*, 39(3), 370–397.
- Reezigt, G. J., Guldmond, H., & Creemers, B. P. M. (1999). Empirical validity for a comprehensive model on educational effectiveness. *School Effectiveness and School Improvement*, 10(2), 24.
- Trautwein, U., Koller, O., Schmitz, B., & Baumert, J. (2002). Do homework assignments enhance achievement? A multilevel analysis in 7th-grade mathematics. *Contemporary Educational Psychology*, 27(1), 26–50.

- Werf, G. van der (1997). Differences in school and instruction characteristics between high-, average-, and low-effective schools. *School Effectiveness and School Improvement*, 8(4), 430–448.
- Werf, G. van der, Creemers, B., Jong, R. de, & Klaver, E. (2000). Evaluation of school improvement through an educational effectiveness model: The case of Indonesia's PEQIP project. *Comparative Education Review*, 44(3), 329–355.

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