DOCUMENT RESUME

ED 302 554 TM 012 537

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TITLE The Validity of Characteristics of Effective Schools across Contexts and Nations.
PUB DATE Apr 88
NOTE 25p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 5-9, 1988).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Academic Achievement; Comparative Analysis; *Comparative Education; *Cross Cultural Studies; Educational Environment; Educational Quality; Elementary Secondary Education; *Foreign Countries; Instructional Effectiveness; Instructional Leadership; International Studies; Outcomes of Education; *School Effectiveness; Student Evaluation; *Validity
IDENTIFIERS *Context Effect; Netherlands

ABSTRACT

An inventory was made of reliable characteristics of effective schools within and across contexts, including a comparison of results of effective-schools research from different nations. A five-factor model of school effectiveness is discussed, which gives the following characteristics: (1) academic goal consensus; (2) safe and orderly climate; (3) strong instructional leadership; (4) high expectations for student achievement; and (5) frequent evaluation of student progress. This model is mainly based on research from the United States. An examination of the Dutch school system and review of studies of school effectiveness in the Netherlands do not support this five-factor model. There was no relation between the characteristics of effectiveness in Anglo-American schools and student dropout rates. The evaluative potential of a school is one characteristic that appears valid across contexts. It is evident that contextual effects must be taken into account in conducting and analyzing research in school effectiveness. A multiple level of school effectiveness should be the conceptual background of individual studies. One figure illustrates the secondary educational system in the Netherlands, and six tables present data descriptive of Dutch school effectiveness. (SLD)

The validity of characteristics of effective schools across contexts and nations

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ABSTRACT

The basic questions which we tried to answer in this paper, concern the generalizibility of effective schools indicators across contexts. We attempt to establish which characteristics of schooleffectiveness are context-bound and which seem to be more generally valid. A further explicit aim was to relate school-effectiveness research more closely to effectiveness perspectives developed in the field of organizational theory.

The effective schools movement claims that a limited set of school characteristics consistently co-variates with the educational attainments of the students. The empirical evidence for these claims is, however, much debated. First of all there is evidence that schools that are effective one year are not effective anymore the next year. Secondly, some studies show that effective schools characteristics variate across contexts, e.g. primary vs. secondary schools, private vs. public schools and schools with high- vs. low ability students. In this study an inventarisation has been made of reliable effective schools characteristics within as well as across contexts, including a comparison of results of effective schools research from different nations. Schooleffectiveness is seen in terms of multi-level causal network of context-, school organisation- and individual strategies. Furthermore this "contextual analysis" of schooleffectiveness is compared with perspectives from organization theory, most notably the contingency-theory.

The results of this study show clearly that it is not appropriate to speak of 'the' characteristics of effective schools. These characteristics vary considerably across contexts and nations. On the other hand some evidence remains that indicates that some characteristics are valid across contexts. The evaluative potential of a school is one of them.The context-boundneness of characteristics of effective schools is explained by cultural differences between contexts and by the organizational differences between schools in different contexts.

It is most likely that what 'works' in one context does not always work in another. There needs to be a 'fit' between context, organisation and in- school measures to obtain higher effectivity (and efficiency).

These conclusions show that the general idea of contingency-theory also applies to effective schools-research. Moreover a variaty of other organization-theoretic concepts should be employed more fully in future school effectiveness research.

1. INTRODUCTION

At present we discern two new trends in the school-effectiveness literature. Firstly, in research syntheses of educational productivity research we see that both indicators at the school (or meso-) level and indicators at the classroom (or micro-) level are presented together. The idea of combining school- and classroom-indicators in effectiveness studies corresponds with Purkey and Smith's idea of conceptualizing school effectiveness conditions as "nested layers" (Purkey and Smith, 1983). The developments in multi-level statistical analysis (e.g. Raudenbush and Bryk, 1985; Aitkin & Longford, 1986) are particularly relevant to school effectiveness studies in which one wishes to estimate simultaneous'y school and classroom effects, although there is still a gap between the complexity of the conceptual schemes and what the techniques can handle (Scheerens & Stoel, 1987).

The second more recent development in school effectiveness research elaborates the conceptual scheme of school effectiveness further by adding contextual conditions of schools (Wimpelberg, Teddlie & Springfield, 1987; Teddlie, Springfield & Wimpelberg, 1987). Examples of school-context variables are: private vs. public schools, SES-composition and primary vs. secondary schools. Although these factors are sometimes referred to as organizational variables, we feel that contextual variables is the better term since they lie only partly within the managerial sphere of influence of the individual school, a phenomenon which is even more pronou[illegible]d when we include characteristics of educational policy at a higher level [illegible]the school (district, state, nation).

As Wimpelberg et al. (1987) point out, the "5-factor model" of school effectiveness has been empirically verified almost exclusively in primary schools in urban contexts with a lower SES-student composition. Teddlie et al. (1987) provide research results from which they induce different effectiveness conditions for Middle-SES-schools as composed to lower SES-schools. Firestone & Herriott (1982) show that effectiveness conditions found in primary schools cannot simply be generalized to secondary schools.

In this paper we shall present some material that bears upon the contextual dimension of school effectiveness. First, we discuss the results of a

comparison of effectiveness indicators across two types of secondary education in the Netherlands, the LBO- (lower vocational education) and the MAVO- (lower general secondary education) schools. In a second section we draw a general comparison between the main findings of school effectiveness research in the Netherlands and the major ANGLO-Saxon effectiveness studies, and, in addition, look more specifically at two Dutch replications of American studies.
In the final section we summarize tentative explanations for the differences between Dutch and Anglo-Saxon school effectiveness research-findings.

2. THE VALIDITY OF THE 5-FACTORMODEL

Since there exist already an abundance of summary-articles on school-effectiveness and educational productivity research (e.g. Purkey and Smith, 1983; Ralph & Fenessey, 1983; Rutter, 1983; Walberg, 1984), we shall be brief in sketching the developments in this field of inquiry. The shift in emphasis in effectiveness research from input-output, to process-output studies, also referred to as the first and second phase of effectiveness research, is well documented in the literature, where Coleman et al. (1966) and Jencks et al. (1972) are representative for phase one, and Edmonds, 1979; Brookover, 1979 and Rutter, 1979, are important studies in the phase two tradition. This latter research tradition has yielded, what is sometimes referred to as a "5-factor model of school effectiveness": academic goal consensus, safe and orderly climate, strong instructional leadership, high expectations for student achievement and frequent evaluation of pupil progress.

There seems to exist considerable consensus about the validity of this set of school characteristics. Almost every review of research on effective schools claims the factors mentioned above to be effective. Apparently one assumes that this set of variables 'explains' most of the variance between student outcomes which are not accounted for by individual differences between students. However there should be some doubt about this proposition.
Firstly most research on effective schools has been carried out in the United States. One should wonder whether results of this research can be transferred

to other countries. Different countries can have different schoolsystems and different schoolcultures. Therefore it is likely that the characteristics of effective schools are different from one country to another. In (a next) paragraph we will present some empirical evidence for this proposition.
Secondly another assumption that is frequently implicitly made is the assumption that these so-called effective school characteristics have a positive influence on all students, regardless of their socio-economic background, abilitylevel or there ethnic background. It is debatable whether this is indeed the case.
Thirdly, one should take into account that most of the research done on effective schools has taken place in primary schools. Nevertheless in research-papers one seldom refers to the limits in generalizibility of results to, for instance, secondary schools.
A fourth reason to question the generalizibility of the so-called 5-factor model is the difference between rural and urban area's. Youth culture is different for urban and rural area's, so one could assume that characteristics of effective schools are also different for different area's.
In the next paragraphs we trie to present some empirical evidence for the propositions mentioned above.

3. OVERVIEW OF DUTCH EFFECTIVENESS STUDIES

3.1. The dutch educational system

As we mentioned before, differences between schoolsystems in different countries could result in different sets of effective schoolcharacteristics. Therefore we will present in short the main characteristics of the Dutch educational system.
There are three characteristics of the Dutch school system that should be mentioned if the research is to be understood.
One is that secondary education is split up into at least four different streams, each almost isolated from the other in a different school type. There has been much political debate about changing the system and "going more

comprehensive", but the different schooltype system is likely to exist for at least another decade.

insert figure 1 here

At the grade levels at which the research that is to be presented in paragraph 3.2. took place, an important difference exists between general education (mavo and havo/vwo), taking about 60% of the age group and junior vocational education (lhno and lbo) taking about 30% of the age group. The higher type of general education, havo/vwo, gives access to the university and a number of professional schools. Havo/vwo differs from the other school types in terms of the number of years of study and in terms of the curriculum. Teachers in these schools are also better qualified and better paid. Many of them have Master's degrees in their subject. Lhno is mainly for girls and lbo mainly for boys, at least in our studies. The above school types exist work as separate institutions from the 7th grade onwards.
The second characteristic to be mentioned is that the Dutch educational system is centralized for funding and final examinations. In some ways, this national centralization prohibits any strong influence by local authorities. Of course, this centralization could have an impact on the differences that exist between schools of the same type. One could assume that differences within each type of school are smaller in the Netherlands than for instance in the United States, where, there is less centralization.

3.2. Overview of Dutch effectiveness studies

In the Netherlands, relatively few school effectiveness-studies have been conducted, as yet. Moreover, these studies were carried out during the last few years, so there is every reason to say that we are dealing with a research field in its infancy.
An interesting development, however, is the fact that the more mature field of school career research in the Netherlands is gradually blending with school

effectiveness research by including school characteristics as independent variables more frequently.

insert table 1 here

Table 1 gives a general overview of the results of the effectiveness studies that have been carried out, so far. Of course, this overview lacks all kinds of detail, as far as research methods, effect size and technical quality of the studies are concerned. Since, here we are only concerned with the 'general picture', we felt we could abstract from these details. Yet, we must say that methodological debates have arisen about the reliability and validity of some of these studies. The dependent variables that were used in these studies vary form achievement-test data, examination-results, educational attainment-data to affective measures like attitude towards school. The independent variables were mostly measured by means of questionnaires and interviews. Simple correlations, regression analysis and ANOVA were the analysis-techniques. The general picture this overview presents indicates that the "5-factor model of school-effectiveness", induced from the major Anglo-Saxon studies, is not at all strongly supported by the empirical findings. A discussion of feasible explanations for this state of affairs will be presented in the next section, after we have looked more closely at a Dutch studie in which originally American studies were replicated.

3.3. Replication of American studies in the Netherlands

3.3.1. A replication of the Schweitzer-study (USA) by Vermeulen (NL)

In 1984 John Schweitzer presented a paper at the annual meeting of the AERA that was titled "Characterstics of effective schools". He reported about a study he carried out in which characteristics of schools were correlated to schoollevel achievement scores. He used a paper-and-pencil questionnaire containing 49 Likert-type items to establish the characteristics of the schools. These items

were supposed to cover five characteristics of effective schools: instructional leadership, emphasis on achievement, a safe and orderly climate, high expectations and use of assessment instruments. The correlations that were reported by Schweitzer were relatively and therefore very promising for schools who want to improve their output.

Insert table 2 here

In table 2 and 3 the results of the Schweitzer-study are summarized. Vermeulen replicated the Schweitzer-study in the Netherlands in 1986. Vermeulen carefully translated the questionnaire used by Schweitzer.

Insert table 3 here

Table 2 and 3 also show the results of this study by Vermeulen. As you can see the correlations that were reported by Vermeulen are much smaller than those reported by Schweitzer. Table 3 even shows a reverse of the Schweitzer results. Whereas Schweitzer reported positive correlations, Vermeulen found negative correlations. Theoretically there are many explanations for these differences. Cultural differences between two countries could be one of them: what apparently works in the USA should not always work in other countries too. On the other hand it is very plausible that the same situation could occur inside the United States: if a study is carried out in one place in a specific context, it is not very likely that the same results are to be found in other districts, schools etc. The conclusion should be that it is necessary to conduct more replicationstudies, in order to establish whether there are contextual influences in effective schools characteristics.

3.3.2. Replication of the findings by Sweeney (USA) by Van der Grift (NL)

In 1982 Sweeney made a synthesis on research on effective schoolleadership. He compared 8 studies in this field. As a result of this synthesis he found six categories of leadership behavior to be positively associated with school outcome. In table 4 the results reported in his review are summarized.

insert table 4 here

Table 4 shows clearly that where Sweeney concludes that these six categories of schoolleadership behavior are strongly related to school outcome, Van der Grift cannot reproduce these relations in a Dutch educational setting. The only significant correlation he found is even negatively correlated to school outcome. Again there are many possible reasons why this is the case. Nevertheless, one should take into consideration the possibility that contextual effects are part of an explanation of these somewhat confusing results.

3.4. Comparison of two different types of secondary education

In 1982 Stoel (1986) did some research of schooleffects in secondary education in the Netherlands. In this research two types of secondary education (vgl. par. 3.1.) were involved: schools for lower general education MAVO and schools for lower vocational education (LBO).
Information about schoolcharacteristics were gathered by means of a questionaire, that was answered by the schoolleader. Schoollevel-information was obtained from context-, input-, process- and output-variables. The selection of variables had taken place on the basis of research-literature and interviews with schoolleaders, policymakers and teachers. Variables which were supposed to explain most variance in students-output at the schoollevel were selected.
The two samples were randomly selected from each sub-population (schools for lower general education (MAVO) resp. schools for lower vocational

education (LBO)). Eventually 132 MAVO- and 119 LBO-schools participated in the survey.

With respect to several output-measures data were gathered: percentage of students that pass exams, percentage of students that repeated classes in each grade, percentage of students that dropped out, percentage of students that were truant and some more. Simple PM-correlations and regression-analysis were used to establish the relationship between input, context and processvariables on one hand and the output-variables on the other hand. Only the correlations with dropout and truancy-rates are presented here. There are two reasons for this selection. The percentage of students that passes exams could not be predicted by what schoolcharacteristic whatsoever. Apparently there was no consistant co-variation between exam-results and schoolcharacteristics. Secondly, the remaining output-measures could be predicted by schoolcharacteristics in some way, but relationships were very small. Only dropout and truancy-rates could be predicted by schoolcharacteristics to a more substantial degree. In table 5 only the significant correlations are presented for both LBO- and MAVO-schools between school dropout rates and some schoolcharacteristics.

insert tables 5 and 6 here

As you can see the correlations are not only small, they are also very inconsistent for both type of school. When an indicator/criterion relationship was established for one school-type, it was not reproduced for the other; in some schools even negative correlations were found. One could argue that the pattern of correlations shown above is merely the result of unreliable instruments or chance capitalisation. Because the reliability of schoollevelmeasures is mostly unknown and chance capitalisation can never be excluded totally, it is difficult to fight these arguments. If one assumes that the correlations presented above are real, one can easily see what 'works' for one type school does not necessarily works for another. If one assumes that these correlations are not real but due to unreliable measures and chance

capitalisation, then one should conclude that as far as the Netherlands are concerned, there is no relation whatsoever between schoolcharacteristics, that are said to be effective according to anglo-american studies, and student dropout-rates. Both conclusions lead to a third one. Apparently schoo contextual characteristics, e.g. type of school and nation, affect what characteristics of schools are related to student-output.

3.5.Dutch replications of foreign effectiveness studies

One possible explanation for the lack of corraboration of the "five-factor model" in Dutch school effectiveness research, could be the fact that, the variance between schools of a particular schooltype, is lower than in the Anglo-Saxon countries. Roeleveld (1987) found that 7-13% of the variance in educational attainment of pupils, lay between schools. Stoel, 1986 found that this percentage was 6 to 17% within different types of secondary education. Whether this should be considered high or low can only be induced from careful international comparison of achievement data. (For this reason we are presently involved in a secondary analysis of IEA-data).
Although schools in the Netherlands have a lot of autonomy, as far as the choice of curricula and teaching methods are concerned, there is relative uniformity with respect to teacher salaries, job differentiation that is allowed, and resources.
Two other characteristics could explain the inconsistency in findings across studies in measures like 'frequent evaluation' and 'achievement orientation'. Although we lack empirical data on this subject, our personal impression is that achievement orientation does not generally rank high in the teaching philosophy of most Dutch schools.
The humanistic and reform pedagogic ideals of the seventies, which are at odds with high achievement orientation with respect to basic skills still have a lot of influence. Nor is there a testing and evaluation tradition in Dutch schools. Only quite recently preparations are being made for a national assessment program. One of its envisaged spin-offs, namely instruments for self-evaluation of schools is still further away.

So, a certain uniformity in the Dutch school system could explain relatively low overall school effects and lack of achievement orientation and testing and evaluation tradition could explain relatively little variance in some of the independent variables of school effectiveness research. Together these phenomena could explain the very weak corroboration of the "five-factor model" in Dutch school effectiveness research.

4. CONCLUSION

The results of this study show clearly that it is not appropriate to speak of 'the' characteristics of effective schools. These characteristics vary considerably across contexts and nations. On the other hand some evidence remains that indicates that some characteristics are valid across contexts. The evaluative potential of a school is one of them.The context-boundneness of characteristics of effective schools is explained by cultural differences between contexts and by the organizational differences between schools in different contexts.

In a recent review of Fuller (1987) he compared results of research on effective schools that has been carried out in the so-called third world countries. One of his conclusions, amongst others which are also very noteworthy, is that school effects in the Third World seem to be stronger in rural areaa's and among lower income pupils.

Again there is a clear evidence that contextual effects should be taken into account. Not only when one reports on research on effective schools but als when one tries to improve schools on the basis of this kind of research. In our opinion this counts not only for contextual diferences between countries but also for contextual differences between schools inside countries.

It is most likely that what 'works' in one context does not always work in another. There needs to be a 'fit' between context, organisation and in- school measures to obtain higher effectivity (and efficiency).

These conclusions show that the general idea of contingency-theory also applies to effective schools-research. Moreover a variety of other organization-theoretic concepts should be employed more fully in future school effectiveness research.

One final conclusion we would like to draw from the results that have been presented is the apparent necessity to take contextual conditions into account when conducting and analyzing school effectiveness research. Perhaps this is not a pleasant consideration when our aim is a parsiminous school effectiveness model. But only by testing hypothetical sets of school effectiveness indicators across contexts, such as school-types, districts and even nations, can we find out which are generalizible and which are context-bound.

We feel that a multiple level model of school effectiveness should be born in mind as a conceptual background of individual studies - not that each study should try and cover the full complexity of the model. The theoretical implications of this model are discussed by Scheerens & Stoel, 1988.

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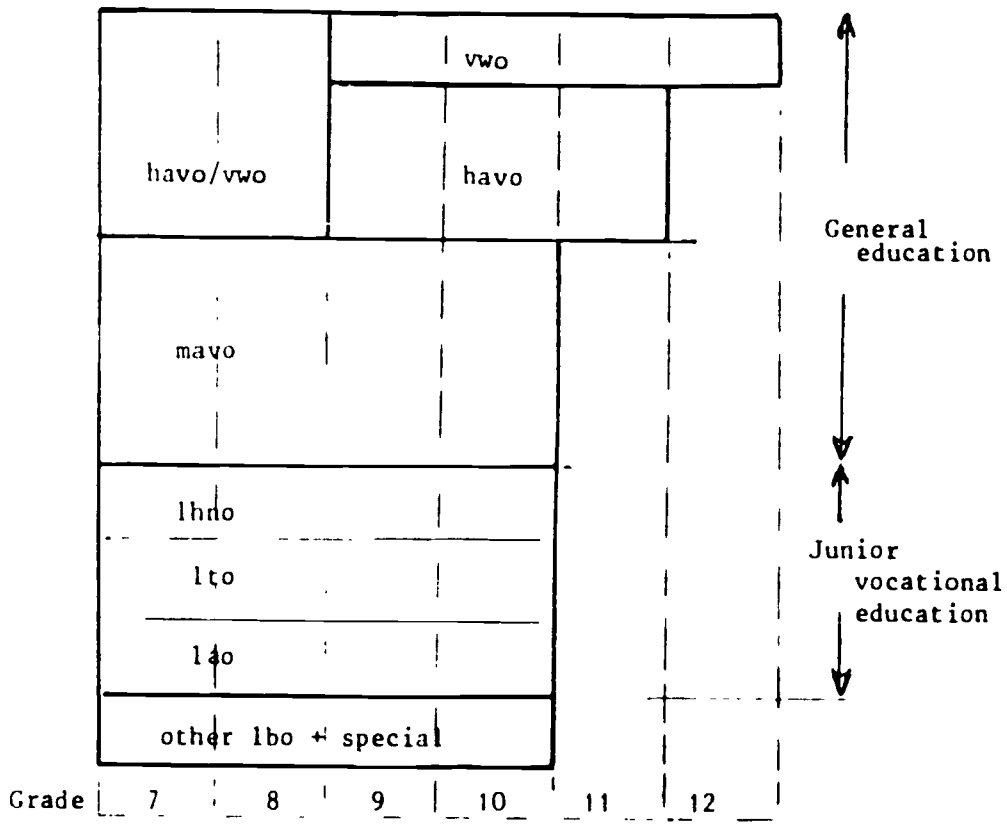
Figure 1: The educational system for secondary education in the Netherlands



indicator / author	general measure of school-climate	educational leadership	orderly climate	basic skills	high expectations	frequent evaluation	private public	direct instruction	achievement orientation
Meijnen, 1985								+	
Marwijk-Kooy, 1984 ⊙	+	-							
Hoeven van Doornum, Jungbluth, 1987	-						+		
Stoel, 1986 ⊙		-	+			+			
Bosker, Hofman, 1987								-	
Brandsma, Stoel, 1987 ⊙		+				+			
Vermeulen, 1987		-	+	-	-	-			
Tesser, 1985 ⊙	-								
Van der Wolf, 1985								+	

⊙ secondary schools, unmarked: primary schools, + means significant positive relationship with effectiveness indicator,
- means no significant positive relationship with effectiveness indicator

Table 1: Overview of Dutch effectiveness studies

Table 2: Relationship between characteristics of schools and educational attainment (reported by teachers).

	Schweitzer (USA)	Vermeulen (NL)
Strong instruction leadership	.58	.05
Academic goal consensus	.79	.12
Safe and orderly climate	.59	.34
High expectations for student achievement	.79	.21
Frequent evaluations of pupil progress	.68	.23

Table 3: Relationship between characteristics of schools and educational attainment (reported by schoolleader).

	Schweitzer (USA)	Vermeulen (NL)
Strong instruction leadership	.09	-.56
Academic goal consensus	.44	-.19
Safe and orderly climate	.28	.21
High expectations for student achievement	.71	-.45
Frequent evaluations of pupil progress	.21	.13

Table 4: Comparison of the outcomes of the review of studies reported by Sweeney with a research study carried out by Van der Grift

	Sweeney	Van der Grift (N=139)
category of leadership behavior		
1. coordinates instructional	4*	-.14**
2. emphasizes achievement	8	n.s.
3. frequent evaluation of pupil progress	5	n.s.
4. provides orderly atmosphere	7	n.s.
5. sets instructional strategies	8	n.s.
6. supports teachers	3	n.s.

* Number of studies (out of 8) that reported positive associations with school outcome

** significant P.M.-correlation at the .05 level

Table 5: P.M.-correlations between several school (process) variables and the dropout-rate of schools

	lower vocational education (N=119)	lower general education (N=132)
school (process) variable		
. pressure on homework	-.45	n.s.
. frequency teachers meeting in sections	.23	-.24
. individualized instruction	.21	n.s.
. time spent on meetings by school management	.31	n.s.
. pupil/teacher ratio	.30	.29
. average class-size	-.39	-.26
. percentage of students from ethnic minorities	.20	.53

Table 6: P.M.-correlations between several school (process) variables and the truancy-rate of schools

school (process) variable	lower vocational education (N=119)	lower general education (N=132)
. frequency of extra-curricular activities	n.s.	.20
. intensity of use of diagnostic tests	-.23	n.s.
. intensity of counseling activities	.23	n.s.
. age of schoolbuilding	-.21	n.s.
. homework pressure	n.s.	-.26
. intensity of use of evaluation practices by teachers	n.s.	.34
. intensity information towards parents	n.s.	-.29