**School Culture and School Performance**

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# School Culture and School Performance

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# SCHOOL CULTURE AND SCHOOL PERFORMANCE

## AN EXPLORATIVE STUDY INTO THE ORGANIZATIONAL CULTURE OF SECONDARY SCHOOLS AND THEIR EFFECTS

PROEFSCHRIFT

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prof.dr. R.J. Bosker
prof.dr. J. Scheerens

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# Preface

During the first years of my study of *Educational Science and Technology*, I became fascinated by 'organizations'. I have often wondered what it is that fascinates me about organizations. After all, nearly everyone in Western society works in some kind of organization, and is confronted daily with the actions people in other organizations take, whether it is a business firm, a sports club, the local government or a school. Those who become ensconced in organizations, become aware that this has a large impact on their lives. Not only does it take a lot of time to work for organizations, but many people meet their friends at the organizations in which they work, talk about their work when meeting relatives at birthday parties, etc. As Silverman (1970) noted, organizations are 'little societies' – or 'cultures', as Morgan (1986) puts it in his book, 'Images of organizations'.

Having read this, it may come as no surprise that I found myself attracted to the study of organizations, and to the study of organizational culture in particular. I have always combined this interest with a deep-hearted skepticism towards current organizational research. Most research in this area only focuses on a few variables which are easy to measure, while pretending to measure some abstract concepts which are only partially related to the measured variables. For that reason, I have been charmed by Kaplan's law of operations and concepts: "If you can measure it, that ain't it!" (Kaplan, 1964). It reminds us of the troublesome endeavor of doing research, and it stimulates us to operationalize our concepts as well as possible. For that reason, a major part of this study is directed towards the operationalization of the culture concept in order to be able to measure it. Kaplan's law also indicates that every operationalization is fallible. This study surely is no exception.

This study could never have been finished without the help of others. First of all, I'm greatly indebted to Roel Bosker, who was involved as assistant supervisor at the time this research project started, and as supervisor during the last two years of the study. Furthermore, this research project was built on an earlier study on organizational culture in a center for vocational education, which I performed under his supervision. Roel not only provided me with the freedom I needed, but also held the rope tight when necessary. He gave me methodological advice, and I admire this patience in explaining the usefulness of each of the techniques he proposed. Without his help and support, this project would surely not have been completed. I am also indebted to Jaap Scheerens, who critically commented on the drafts of the manuscript, and provided comments, which further strengthened and sharpened the text. His numerous writings have been an important source of inspiration throughout this study.

Furthermore, this inquiry could not have been done without the participation of administrators and teachers. The interviews and observations during the first stages of the study provided me with valuable information for this dissertation. Moreover, I was impressed by the dedication of many teachers and school administrators for the students at their school.

A number of colleagues at the *Department of Educational Organisation and Management* gave me advice on how to proceed with the problems I encountered during this study, or provided me with necessary data. I would like to mention Anton Béguin for his methodological help; Rien Steen for his preparation of the samples for this study; and Lyset Rekers for her preparation of the data sets from the Dutch Inspectorate. Bart van Kimmenade prepared the figures representing the cultural profiles of schools. Furthermore, I would like to express my gratitude to Simone Doolaard and Henny de Vos. They contributed considerably, though in a less tangible manner to this study, through the discussions, ICO courses and conferences we attended together. Together with the other Ph.D. students, Saskia Tjepkema, Marinka Kuijpers, Froukje Jellema, Fahroum Shalabi and Elvira Annevelink, and other staff members at the *Department of Educational Organisation and Management*, they provided a pleasant and stimulating environment in which to work.

Finally, I would like to convey a word of thanks to my family, Marie-Anne, Merel and Veerle. Often, it takes some patience for them to deal with their husband and father.

# Chapter 1
# Introduction

## 1.1 The obstinacy of school effectiveness research

For over thirty years, the effect of schooling on student performance has been one of the major themes in educational research. Coleman's study on equality of educational opportunity in the United States (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966) is often conceived as the starting point of what became later known as the school effectiveness research tradition (see, e.g. Creemers, 1994*a*; Scheerens & Bosker, 1997; Teddlie & Reynolds, 2000*a*). Coleman's aim was to delineate factors that contribute to differences in achievement between students from various ethnic groups. One of the main findings was that differences between schools account for only a small part of the total variance in student achievement. Differences in student achievement between schools were found to be considerably smaller than within-school differences. In general, only 10 to 20 per cent of the variance in achievement turned out to be at school level. The study further revealed that the most influential 'school' factors were in fact student and teacher characteristics, like educational background, aspirations of other students in school and the scores of teachers on a verbal skills test. The curriculum of the school and school facilities, like the number of books in the school library, the age of the buildings and teachers' salaries, were hardly related to student achievement.

The Coleman findings were confirmed in a study led by Jencks on inequality (Jencks, Smith, Acland, Bane, Cohen, Gintis, Heyns & Michelson, 1972). Jencks and his colleagues reanalysed the Coleman data, as well as findings from *Project Talent*, a

longitudinal study of more than ninety high schools, and data from numerous smaller studies on schools in the United States. Their analysis revealed that schools contribute little towards bridging the gap between able and less able students. School achievement was found to be largely determined by students' family background. Therefore, as Jencks *et al.* concluded, there are few indications that educational reforms like compensatory programmes can redress cognitive inequality to a large extent.

Critics of the Coleman and Jencks studies have emphasized that both studies mainly dealt with the effect of material school characteristics, while the effect of educational variables like teacher behavior and organizational processes hardly received attention[1] (e.g., Averch, Carroll, Donaldson, Kiesling & Pincus, 1974; Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Rutter, Maughan, Mortimore, Ouston & Smith, 1979). In their review of input-output studies, Averch *et al.* (1974) conclude that research into material school facilities and student achievement has revealed many inconsistent findings. They argue that -rather than facilities being *available* - it is the way in which facilities are *used* in schools, that matters.

Consequently, in the late seventies the focus of school effectiveness studies shifted towards characteristics related to the organization, form and content of schooling (Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Rutter, Maughan, Mortimore, Ouston & Smith, 1979). Brookover and his colleagues (1979) focused on the relationship between a school's social system and teaching outcomes, by taking the social structure and social climate of the school into account. The social structure of the school, which they defined as the interaction patterns that occur there, explained four per cent of the total variance in achievement. The social climate of the school, i.e. the norms, expectations and opinions on what is considered to be adequate teaching conduct, accounted for an even larger part of the differences in achievement between schools.

Rutter and his colleagues (1979) came up with similar conclusions. They found that the London secondary schools in their study differed greatly in student behavior and student achievement. They argued that this might be due to the ethos, a combination of values, norms and behavioral patterns of the school. Following the Rutter study, Mortimore and colleagues concluded that differences in student achievement between primary schools can be explained by an educational leadership that reflects involvement and commitment, monitoring students' progress, a positive atmosphere backed up by the involvement of school management and parents, and structured and well-regulated teaching (Mortimore, Sammons, Stoll, Lewis & Ecob, 1988).

Studies like Brookover *et al.* (1979), Rutter *et al.* (1979) and Mortimore *et al.* (1988) explicitly aimed to open the 'black box' of the school by studying the relationship between school effectiveness and so-called process characteristics, which relate to the

organizational features and internal functioning of schools. Probably the most cited summing up of this kind of research has been provided by Edmonds (1979), who has listed five factors that are believed to be the most salient features of effective schools: a strong administrative leadership, high expectations for children's achievement, an orderly atmosphere conducive to learning, an emphasis on basic-skill acquisition, and frequent monitoring of students' progress.[2] Other authors (e.g. Levine & Lezotte, 1990; Purkey & Smith, 1983; Sammons, Hillman & Mortimore, 1995) have compiled more elaborate lists of factors that enhance effectiveness. Most of these are based on a synthesis of existing research into school effectiveness. These syntheses, basically qualitative in nature, all come up with more or less similar factors. Furthermore, most syntheses found highly consistent results between the studies reviewed.

Scheerens (1992) has criticized this approach. He argues that the empirical evidence regarding commonly identified effectiveness enhancing factors is indecisive. In his review of case studies on school effectiveness he found consistency between studies to be less convincing than most syntheses suggest. For instance, some studies revealed that strong leadership was correlated with student achievement, whereas other studies failed to find such a relationship. Based on his qualitative analysis of a large number of studies on the relationship between schooling factors and student achievement, Scheerens concluded that there is only solid empirical evidence for the effect of structured teaching and effective learning time on student performance. These two factors, however, are primarily related to the teacher or class level in schools. For school features like school climate there is 'weak empirical confirmation' at best. Scheerens' criticism is substantiated by a quantitative meta-analysis done by Bosker and Witziers (1996). In their analysis of studies that examined the relationship between educational leadership and school effectiveness, they concluded that, to date, there is no empirical evidence for such a relationship – except for the United States where a small effect size was found for leadership and achievement.

In their analysis of qualitative reviews, quantitative research syntheses and international comparative analyses on effectiveness enhancing factors in schools, Scheerens and Bosker (1997) reached similar conclusions. They found a striking discrepancy between the results of the qualitative and quantitative reviews. They argue that this

> "discrepancy between the results of qualitative reviews and quantitative meta-analyses in the area of school organizational factors is surprising, because the reviews in question are all based on empirical studies. The Cotton (1995) review, for example, mentions sets of individual empirical studies that support the contentions about effectiveness-enhancing conditions. Apparently, across studies, effects are inconsistent to the degree that quantitative averages are close to correlations of zero" (p. 304)

Scheerens and Bosker contend that this does not mean that past research into school effectiveness has revealed no relevant factors at all. Such a conclusion, they feel, would be too strong and too negative. Nevertheless, they indicate that the impact of school organizational factors might certainly have been overrated in the past. To clarify this issue, they advocate more theoretically oriented and sophisticated methodological directions into school effective research.

## 1.2 School culture and school performance

In this study, we will explore one of these theoretical strains by focusing on the culture of schools, and on the relationship between culture and performance. In the effectiveness enhancing factors Edmonds (1979) has identified, as well as the models of school effectiveness developed by Scheerens (1992) and Creemers (1994*b*), factors emerge that reflect a school's culture, like achievement orientation, a shared ideology or mission, cohesion and collaboration among teachers. In other frequently cited reviews of studies into school effects similar conclusions have been drawn (Levine & Lezotte, 1990; Sammons, Hillman & Mortimore, 1995).

Levine and Lezotte (1990) identified nine characteristics of unusually effective schools. The first they mention is a productive school climate and culture. More specifically, effective schools are characterized by an orderly environment. According to both authors, an orderly environment is rather associated with interpersonal relationships, than with regulations. As they note, "discipline derives from 'belonging and participating' rather than 'rules and external control'" (p. 9). Other effectiveness-enhancing factors reflect a similar point of view. For instance, 'faculty cohesion, collaboration, consensus, communications and collegiality' were identified as a crucial feature of effective schools. Staff members have to work as a team to ensure a sense of unity and consistency in their relation with students. Furthermore, faculty input in decision-making was identified as an effectiveness-enhancing factor. This refers to a more participatory approach of decision-making, which is likely to enhance the commitment of faculty members. As Levine and Lezotte indicate, the commitment of staff members, and the impetus for collaboration and communication has to be directed towards student achievement. Not only do staff members need to be committed to a shared and articulated mission focused on achievement, Levine and Lezotte argue, but also a school-wide emphasis on recognizing positive performance is indispensable. Staff members need to have a problem-solving orientation, a willingness to experiment and actively search for

solutions that might overcome obstacles in student learning, especially with respect to low achievers.

The review of Sammons, Hillman and Mortimore (1995) reveals similar effectiveness enhancing school characteristics. Of the eleven factors they identified, the 'shared vision and goals', 'learning environment' and 'positive reinforcement' factors bear close resemblance to the aspects Levine and Lezotte identified as 'productive school climate and culture'. A shared vision and shared goals reflect a unity of purpose among the teaching staff of a school that is likely to result in a consistency of practice. Furthermore, the coordination of goals is achieved by means of collegiality and collaboration. Therefore, based on previous studies into effective schools, it can be concluded that the concept of school culture is rooted in existing effective school research, and therefore offers a lead for further explaining the 'secret' of effective schools.

One of the founding studies in this field, Rutter *et al.*'s (1979) *Fifteen Thousand Hours*, even suggests that cultural aspects may be the guiding principle for effective schools. They argue that it is valuable to think of schools in terms of their characteristics as social organizations. Teachers in schools form social groups with their own rules, values and standards of behavior, which they denote as the ethos of a school. Ethos reflects the teachers' expectations about children's work and behavior, the models provided by the teachers' own conduct in school, and the feedback that students receive on what is acceptable performance at school. Expectations and feedback are likely, as Rutter and his colleagues argue, to affect the ways in which students' behavior and attitudes develop within a school. Processes of this kind operate in individual interactions between a teacher and a student, in lessons, or in the school as a whole. With respect to this latter aspect, Rutter *et al.* note:

> "The importance of some kind of school-wide set of values and norms of behaviour was also reflected in our findings that in the more successful schools teachers reported that their senior colleagues were aware of matters such as staff punctuality and that they checked that policies were being maintained, as in the setting of homework. This was not a matter of intrusive control or supervision but rather a reflection that staff cared about the way the school functioned. It appeared that an efficient system within which teachers worked harmoniously towards agreed goals was conducive to both good morale and effective teaching" (p. 192/193)

Although the Rutter study has been criticized for both its design and its methodology (e.g., Cuttance, 1982; Purkey & Smith, 1983; Tizard, 1980), its findings are agreed upon as providing a valuable impetus for further research. Purkey and Smith (1983) emphasize the importance of school culture in building a theory of school improvement. As they

note, "most current school effectiveness research lists a variety of potential ingredients but offers little direction for mixing them together. However, imagining schools as cultures does suggest a framework for understanding the problem and indicates how to move toward a solution" (p. 441). They suggest that the concept of school culture may be fruitful because it connects several process factors in school into a meaningful 'equilibrium'. Others scholars from the school improvement tradition support this view (e.g., Fullan, 1988; Hargreaves, 1995; Hopkins, 1991, 1996; Stoll & Fink, 1996). Fullan (1988) argued:

> "Without a direct and primary focus on changes in organizational factors it is unlikely that [single innovations or specific projects] will have much of a reform impact, and whatever impact there is will be short lived … school improvement efforts which ignore these deeper organizational conditions are 'doomed to tinkering' … Strategies are needed that more directly address the culture of the organization" (p. 28) [3]

Kritek (1986) has reported a school improvement case study in which four relatively successful and four relatively unsuccessful primary schools participated. Kritek found higher ratings of school spirit, frequent student monitoring and evaluation, and more frequent teacher discussions in the successful schools. The case study further revealed that teachers in all four 'more successful' schools gave staff cooperation, a high level of staff enthusiasm, uniformity of goals and agreement among staff with regard to program philosophy and policies as reasons for the success. However, Kritek's documentation of a relationship between culture and performance is rather weak, and relies to a large extent on data from a few respondents.

More recently, a number of empirical studies have addressed the relationship between school culture and school effectiveness in a more systematic manner.[4] Cheng (1993) performed a cross-sectional survey of Hong Kong secondary schools. In his study, Cheng compared the effectiveness of 'strong culture' schools with 'weak culture' schools. School culture was found to be related to perceived organizational effectiveness. In schools with strong cultures, school members expressed that their school was highly effective in terms of productivity, adaptability, and flexibility. In order to relate this perceived effectiveness with the actual performance of schools, Cheng further analyzed the effect of cultural strength on the pass rates of final examinations. For this purpose, the pass rates for Chinese, English, and mathematics plus a composite measure based on these three rates, were taken into account. The analyses revealed a significant relationship between cultural strength and pass rates of students in English and on the composite pass percentage. For Chinese and mathematics no significant relationship was found.

Another study into school culture and performance was reported by Heck and Marcoulides (1996). They studied organizational values in Singapore secondary schools. Heck and Marcoulides found that schools, where positive social and professional relations among staff members were developed, reported higher student achievement. Furthermore, their findings indicated that organizational norms and values were only indirectly related to higher student outcomes. More specifically, schools that foster innovation and risk taking, encourage teacher participation in decision-making and provide time for collaboration were more effective. As Heck and Marcoulides indicate, these effects of organizational values on performance are likely to be mediated by teachers' attitudes, and to a lesser degree by the school's organizational climate.

Gaziel (1997) has studied the impact of culture on the effectiveness of secondary schools with disadvantaged students in Israel. His aim was to determine to what extent the culture of effective schools differed from 'average' schools, and what the contribution of each cultural variable was in explaining these differences in performance. His findings indicate that academic emphasis, norms of orderliness, continuous school improvement, teamwork and adaptation to customers' demands were related to the mean scores of students in mathematics, English and Hebrew over two subsequent years. Furthermore, academic emphasis proved to be the variable that best predicted the differences in effectiveness across schools.

A final study that is worth mentioning,[5] is Pang's (1998) research into secondary schools in Hong Kong. Pang studied bureaucratic and cultural linkage as well as tight and loose coupling of schools since these represent several approaches to coordinating and directing staff activities. Tight coupling referred to 'coupling' teaching staff using clear goal orientation and communication and consensus among staff. Loose coupling emphasized a professional orientation and teacher autonomy. Further, bureaucratic linkage reflected formal means of coordination, like formality, bureaucratic control and rationality, while cultural linkage referred to informal approaches, like participation and collaboration, collegiality and achievement orientation. Pang's study showed that for the excellent schools in his sample "emphases on cultural linkage and loose coupling were the most consistent strategies … tight coupling the next, but emphasis on bureaucratic linkage was quite diverse" (p. 22). He concludes that the first three are strong forces that bind people together within schools, while such an effect was not apparent for bureaucratic linkage.

Despite this research, the empirical evidence for a relationship between organizational culture and school effectiveness is still rather weak. This is caused, to some extent, by the fact that various conceptualizations and operationalizations of school culture were used in the aforementioned studies. For example, Rutter's ethos can be regarded as a

generic term for a school's social system. Cheng's (1993) organizational ideology index is more a descriptive measure of social cohesion than a thorough operationalization of cultural factors within schools. Heck and Marcoulides (1996) used time for collaboration, encouragement of innovation, and participation in decisions as an operationalization of a school's values. They focused on several cultural traits, whereas Cheng is more directed towards measuring cultural strength (see also Cheng, 1996).

A further obstacle in comparing the results of these studies concerns the performance variables taken into account. Cheng (1993), for instance, focuses on pass rates, whereas others are mainly concerned with student achievement. These student achievement scores, however, differed widely across studies. Heck and Marcoulides (1996) assigned schools to three categories, according to their scores on a standardized test. Gaziel (1997) assigned schools to two categories based on their 'raw scores' on mathematics, Hebrew and English, and based on the ratings of superintendents and inspectors. Pang (1998) classified schools as 'excellent' based on the perceptions of parents. From this overview, it becomes clear that a variety of performance measures were employed in the studies reviewed, which puts up a barrier for drawing conclusions on the relationship between culture and performance. Furthermore, performance was measured in part of the studies by means of perceptions of effectiveness instead of by standardized measures. As the study of Cheng (1993) indicates, the use of perceptions of performance in research on organizational culture may indicate significant findings, whereas such a relationship is not found if objective performance measures are used as criterion variables.

## 1.3 Disentangling Culture and Performance

In the preceding sections, we clarified our aim of studying the relationship between school culture and school performance, and presented an overview of earlier studies that aimed to unravel the effects of culture on school performance. Although an impression of both concepts undoubtedly has emerged from our discussion, thus far we have not specified what is meant by the *culture* and *performance* of a school. In this section, therefore, school culture and school performance are defined, and some salient features of both concepts are discussed.

### *1.3.1 School Culture*

In this study, school culture is defined as "the basic assumptions, norms and values, and

cultural artifacts that are shared by school members, which influence their functioning at school" (Maslowski, 1997, p. 5). This definition refers to a number of cultural elements, i.e. basic assumptions, norms and values, and cultural artifacts, and a number of cultural aspects, i.e. its shared nature and influence on behavior, that are further explored in the next sections.

### *Layers of culture*

With regard to cultural elements in schools, Schein's (1985) classification of cultural levels is adopted by many scholars in the field of educational administration (see Figure 1.1). Schein's classification consists of three layers that differ regarding their visibility within schools and their consciousness among teaching staff. The underlying level in Schein's classification consists of basic assumptions, which constitute in his view the essence of an organization's culture. At a greater level of awareness, the intermediate level in Schein's classification, values are found. The third level comprises artifacts and practices relating to cultural manifestations and behavior patterns of organizational members. We will now describe each of these elements in more detail.

The 'deepest', least tangible level of culture consists of *basic assumptions* shared by teachers, which comprise the core of school culture. Assumptions refer to taken-for-granted beliefs which staff members perceive to be 'true' (Schein, 1985). Because of their taken-for-granted nature, teachers often are no longer aware of the assumptions that underlie their daily interpretation of their duties. These assumptions are likely to remain unconscious until another staff member, student or parent challenges them (Stolp & Smith, 1995). Then, teachers will reflect on their behavior and become conscious of the basic assumptions that underpin their interpretation of what they do. Following Schein (1985), basic assumptions are often operationalized into five groups: the organization's relationship to its environment, the nature of reality and truth, the nature of human nature, the nature of human activity and the nature of human relationships. These dimensions reflect the fundamental questions people face. For instance, the nature of human nature refers to whether humans are essentially 'bad' or 'good', and whether humans are basically "fixed at birth", or whether they are "mutable and perfectible" (Schein, 1995, p. 132).

The second level consists of values and norms. *Values* refer to what teachers belief is 'good', 'right' or 'desirable'. Values, therefore, are to be considered as standards of desirability; they reflect what is conceived to be *important to pursue* or *worth striving for* in school (cf. Enz, 1986; Hofstede, 1980). Teachers, for instance, may consider respect for others important, or may value collaboration with other staff members. Although

teachers are not always conscious of the values that guide their behavior, most are able to express their core values (cf. Rossman, Corbett & Firestone, 1988). Values like collaboration or respect are often 'translated' into norms for behavior. Such *behavioral norms,* in fact, are 'unwritten rules' according to which others are expected to behave. Norms reflect what teachers expect of other staff members. Norms reflect what is considered to be *not done* in school, what is undesirable behavior. Such norms may exist, for example, with regard to what teachers are expected to wear, or what actions teachers are expected to take for their professional development (Gonder & Hymes, 1994; Van Hoewijk, 1991; Stolp & Smith, 1995).

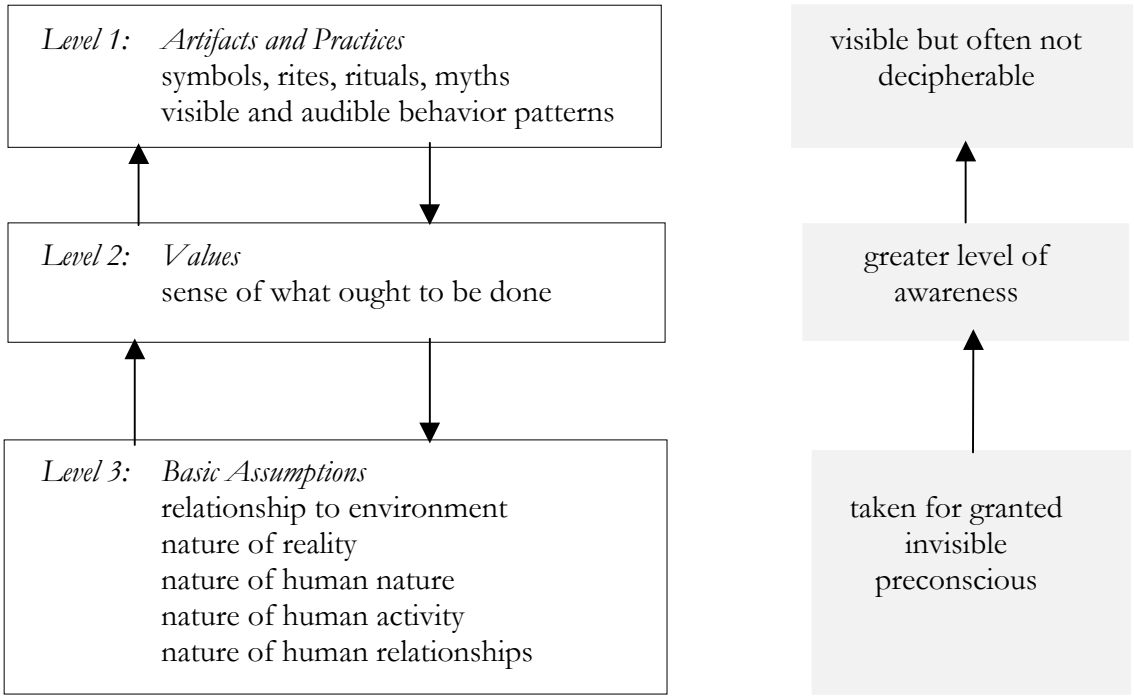


*Figure 1.1 Levels of Culture and their Interaction (adapted from Schein, 1985, p. 14)*

The third level in Schein's classification scheme consists of artifacts and practices. Ott (1989) has argued that both elements refer to essentially different components of an organization's culture. He therefore recommended distinguishing cultural artifacts, like symbols, heroes and myths, from behavioral patterns. A similar classification of distinct cultural layers was advocated by Van Hoewijk (1991). Within these cultural artifacts, the basic assumptions, values and behavioral norms of a school are 'visualized'. *Myths* articulate which past events have been important for members of the school (Deal, 1985).

These 'critical' events are rendered in stories that are frequently recalled. Myths are often centered on actions or decisions taken by the *heroes* or *heroines* of the school. These people represent certain individual characteristics that reflect what members of the school value and serve as role models for the teachers. They may have been a founder of the school, the former principal, a charismatic teacher or even students who left school and whose actions exemplify the school's core values (Deal, 1985; Gonder & Hymes, 1994; Van Hoewijk, 1991). A third artifact pertains to *symbols* that exist in school. These indicate what meaning school members ascribe to various functions, parts or processes within school (Deal, 1995).

Furthermore, in regard to behavioral aspects, the third level also consists of customs, rituals and procedures. In these practices or behaviors, the underlying assumptions, values and norms come to the surface. In each school certain behavioral patterns become established. These are not the result of any formal agreement or arrangement between teachers, but develop from socially accepted or reinforced behavior of the teachers (Deal, 1985). *Customs* refer to 'the way we do things around here', which is often characteristic for the group of teachers within the school. Customs are culturally charged. Because certain 'ways of doing' exist, teachers and principals can predict in advance how others in school will react, what actions they will take and how they will perform their activities. Sometimes it is still possible to 'recognize' the beliefs or assumptions that led to the commonly accepted behavior in these customs. More often, however, these customs are so worn that they can only be interpreted in terms of shared assumptions, values and norms with great difficulty. Procedures, on the other hand, can often be interpreted more easily. To some extent, these procedures are prescribed by institutions outside the school, like the school district or the Ministry of Education. These procedures are less relevant from a cultural point of view. Much more relevant are the procedures that are developed *within* the school itself. These school-specific *procedures* reflect which actions have proven to be valuable for the school in the past and, therefore, have become institutionalized. From these procedures it can often easily be derived what is considered to be a 'good approach' in school. A final behavioral pattern that is culturally charged relates to school *rituals*. The term 'ritual' originates from the discipline of cultural anthropology, where it refers to the social customs around a certain event that has meaning for the members of a particular group. In schools, one may think of the ceremony that takes place when a teacher retires. These events take place according to a fixed protocol, consisting of several activities that may not be impressive from a substantial point of view, but which emphasize the solemnity of the event to the participants. Rituals, therefore, take place around events that are infused with meaning in the eyes of school members.

These three levels of culture are also referred to as the *cultural system* of a school. The cultural system, in turn, is made up of two components, latent and manifest cultural elements. *Latent* culture refers to tacit cultural levels. Generally the two inner levels, i.e. the underlying basic assumptions and the values and behavioral norms are referred to as latent elements of culture. The term *manifest* culture, on the other hand, refers to the visible part of the cultural system. More specifically, manifest culture refers to the myths, heroes and symbols of a school, and the established behavior patterns that have developed, like rituals, customs and procedures. Other characterizations for the manifest culture are 'cultural expressions' and 'cultural artifacts'.

To sum up, school culture is a generic term for the underlying assumptions, values and norms in school, and the myths, heroes, symbols, practices and rituals in which the latent culture manifests itself. The term 'cultural system', however, not only indicates that it covers a number of cultural elements, it also implies that the three levels are interrelated. This means that the basic assumptions of school members are related to their values and norms, and that these, in turn, are linked to the stories and symbols within the school and with the practices and rituals that exist.

### *Aspects of school culture*

Three aspects of culture can be identified: content, homogeneity and strength (Kilmann, Saxton & Serpa, 1986; Maslowski, 1993; Soeters, 1988; Weggeman, 1988).

The *content* of culture refers to the meaning of basic assumptions, norms and values as well as cultural artifacts that are shared by members of the school. The content is often characterized by means of dimensions (cf. Cavanagh & Dellar, 1998; Johnson, Snyder, Anderson & Johnson, 1996; Pang, 1996) or typologies of culture (cf. Handy & Aitkin, 1986; Staessens, 1991*a*). For instance, a culture is classified as 'collaborative' or 'achievement oriented'. Other terms used for the content of culture are the *substance* of culture (Maslowski, 1996), the *direction* of culture (Kilmann, Saxton & Serpa, 1986) or *cultural traits* (Saffold, 1988).

The *homogeneity* of culture refers to the extent in which basic assumptions, norms and values as well as cultural artifacts are *shared* by the school teaching staff. A culture is homogeneous if (nearly) all staff members ascribe to the same assumptions, norms and values. If they hold widely different assumptions, values and norms then the term cultural *heterogeneity* is used. Furthermore, as Siskin (1991) has argued, across subject departments subcultures may emerge, which are relatively homogeneous. The development of subcultures is also referred to as cultural *differentiation* (Soeters, 1988) or cultural *segmen-*

*tation* in organizations (Kanter, 1983). Hargreaves (1991) refers to relatively homogeneous subcultures of teachers as the *balkanization* of culture in schools.

The third aspect of culture concerns the *strength* of the basic assumptions, values and behavioral norms. As Cox (1993) notes, cultural strength has generally been defined in the literature as "a combination of the extent to which norms and values are clearly defined and the extent to which they are rigorously enforced" (p. 162). Stated otherwise, cultural strength refers to the extent to which teachers' actions are actually influenced or determined by the assumptions, values and norms that are shared in school. This emphasis on the *impact* of values and norms on actual behavior is the distinctive feature between the concepts of homogeneity and strength. Cultural strength, therefore, is related to social control on compliance with the school's values and norms. Conversely, when organizational culture is weak, there is less direction and less approbation when behaviors are 'incorrect'. Weak cultures do not enforce school members to behave in a certain way, but rather offer a guideline for their behavior, or as Kilmann, Saxton and Serpa (1985) argue, "the culture only mildly suggests that they behave in certain ways" (p. 4). This means, in weak cultures no 'dictates' exist with regard to the way in which school members *must* behave, but rather how they *might* behave.

### *1.3.2 School Performance*

School performance reflects 'the effectiveness and efficiency of the schooling process'. Effectiveness, in a general sense, refers to the accomplishment of the school's objectives, while efficiency indicates whether these objectives were accomplished in a timely and costly manner. As these definitions show, effectiveness and efficiency are judged according to the school's 'objectives'. Although these are school specific to some degree, school performance research focuses solely on objectives that schools, or a distinct type of schools, have in common. Despite this specific focus, a number of foundational studies –to use Scheerens' (1992) phrase– have indicated that in several aspects measuring performance is multidimensional. We will briefly discuss a number of these issues to further clarify what is meant by the performance of schools.[6]

First, the concepts of effectiveness and efficiency are based on the relative performance of schools.[7] In other words, a school is classified as effective or efficient if that particular school performs better on these aspects than other schools. By adopting this relative approach of performance, it is necessary to ensure that 'fair comparisons' are made between schools. Schools in areas with a large number of minority students, for instance, are likely to show a lower student achievement level than those with a small

percentage of ethnic minorities. For this purpose, so-called 'value added' measures are usually employed when comparing schools.

Within the field of school effectiveness research it is commonly agreed that studies should employ 'value-added' performance measures, instead of unadjusted output criteria. 'Value-added' in this respect can be defined as "an indication of the extent to which any given school has fostered the progress of all students in a range of subjects during a particular time period" (Sammons, Thomas & Mortimore, 1997, p. 24). At the core of this definition is the term 'progress', which implies that student achievement is corrected for prior knowledge of the students, or other student characteristics. This indicates that 'value-added' in fact is a generic term that encompasses different forms of corrections. Bosker (1991) identified three different forms of value-added measures, based on predictions of learning outcomes based on background variables of students and schools, differences with prior achievement, or a combination of both corrections. In general, corrections for prior achievement are preferred for they are considered to best represent the collective 'learning gains' of students, and therefore do justice to the efforts of schools (cf. Teddlie & Reynolds, 2000*a*)[8].

For performance measures related to aspects other than student achievement, like attendance, delinquency or promotion rates, value-added scores are obtained by controlling for background variables of students and schools. This type of performance indicators is only rarely employed in research on school effects. Major exceptions to this rule are a number of studies mainly from the United Kingdom (e.g. Mortimore, Sammons, Stoll, Lewis & Ecob, 1988; Rutter, Maughan, Mortimore, Ouston & Smith, 1979). Similarly, a number of school effectiveness studies have used a variety of performance measures, including social and affective outcomes like student attitudes or students' self-concept (e.g. Knuver & Brandsma, 1993). Most studies in this field, however, have relied on cognitive outcomes.

## 1.4 Problem definition

The aim of this study is to characterize the organizational culture of secondary schools, based on a classification of effectiveness enhancing factors, and to explore whether the culture of schools is related to their performance. Both the characterization of culture and the research into culture and performance presume comparative measures of the organizational culture of schools. For that reason, an instrument had to be found that could be used to diagnose culture, that incorporated relevant cultural features for studying schools' performance. As our motive for studying the relationship between

culture and performance was to explore whether school effectiveness research could be infused with cultural theory, it was decided to focus on the organizational *values* of schools. Furthermore, the study was primarily directed at the characterization of cultures by means of *cultural traits*. A survey of existing instruments for measuring organizational culture revealed that none of the instruments could be used in our study without adjustments being made (Maslowski, 1996). Therefore, for the first part of the study the following objective was formulated:

> *The development of a questionnaire for measuring school culture in secondary education, reflecting values that are expected to be related to school performance, and that meets the psychometric requirements of reliability and validity*

As noted before, the purpose of this instrument was twofold: to characterize school cultures in secondary education and to study the relationship between culture and performance. With regard to the first purpose, the following main research question was formulated:

> *What are cultural characteristics of Dutch secondary schools, and are these characteristics influenced by a school's context?*

Since the 1970s, the number of studies on school culture has grown considerably. Despite this growth, however, our knowledge of cultural types of secondary school is still rather limited. This is primarily due to the fact that most empirical research into secondary school culture has been qualitative and interpretative in nature, collecting data from a small sample of schools (e.g., Kelley & Bredeson, 1987; Kottkamp, 1984; Ortiz, 1986; Owens, Steinhoff & Rosenbaum, 1989; Papalewis, 1988; Willower & Smith, 1986). Recently, a few studies were explicitly aimed at comparing the cultures of secondary schools (e.g., Cavanagh & Dellar, 1998; Pang, 1996). In the Netherlands, however, no accounts are available of systematic studies into secondary school culture. To date, this research mainly focused on primary schools (Houtveen, Voogt, Van der Vegt & Van de Grift, 1996; Kral, 1997).

Furthermore, the interrelation between cultural dimensions was hardly addressed in earlier research. A notable exception is the study by Pang (1998) on the culture of secondary schools in Hong Kong. Pang identified a cultural profile for each of the schools in his study, based on the composite scores of these schools on four variables: bureaucratic linkage, cultural linkage, tight coupling and loose coupling. However, Pang did not analyze these profiles to identify cultural types of secondary school. This study

will explore whether cultural profiles can be formed. The construction of profiles is relevant from a practical as well as a theoretical perspective. Practically, these profiles allow schools to be characterized via their distinctive features. Theoretically, cultural profiles indicate that values related to the various dimensions tend to manifest themselves into a limited number of patterns. These may subsequently guide further research, from a contingency perspective, into the congruity of the value dimensions for each of the profiles.

From this point of view, a further aim of the study was to explore whether the cultural dimensions and the cultural profiles of schools were related to context variables. For that purpose, the relationship between school culture and denomination and size was examined. Denomination was chosen since it is likely to reflect a wide array of contingency factors. For instance, Catholic schools will hire Catholic teachers, have a history that is different from the history of other schools due to former (and existing) ties with the Catholic church, and have contacts with groups –parents, other schools and the schools' advisory service– that will reflect their denominational status to a large extent. Size, on the other hand, is considered to be a crucial factor as values are assumed to reflect structural aspects in schools to some degree. In small schools, for instance, informal contacts are expected to be more important to staff members than in large ones, where coordination is achieved by more formal rules and control.

Based on this, the aforementioned main question was further operationalized in the following research questions: How can Dutch secondary schools be characterized by means of relevant cultural dimensions? Are cultural differences between secondary schools based on these dimensions related to a school's denomination and size? Can cultural profiles of secondary schools be distinguished? If such profiles emerge, are these profiles related to a school's denomination and size?

The second main question of this study relates to the relationship between school culture and school effectiveness:

*Is school culture related to the performance of Dutch secondary schools?*

In this study we focused on two measures of performance, mean student achievement and mean promotion rates at school level. The first measure reflects the commonly used measure for school effectiveness. The mean promotion rates can be conceived as reflecting the efficiency of schools. Based on this distinction of performance measures, this main question was operationalized into the following research questions: Are the cultural characteristics of Dutch secondary schools, as based on the competing values model, related to student achievement? Are the aforementioned characteristics related to

the promotion rates of secondary schools? If cultural profiles of secondary schools emerge, are these profiles related to student achievement? Are these profiles related to the promotion rates of secondary schools?

In Section 1.2, a number of studies were reviewed that addressed the relationship between culture and performance. As we argued, these studies have used widely different operationalizations of culture and performance. Despite this, their findings suggest that the culture of schools is related to their performance. The general notion that emerges is that effective schools emphasize collaboration, collegiality, and staff participation in the decision-making process (cf. Heck & Marcoulides, 1996; Gaziel, 1997; Pang, 1998). This is in accordance with the findings of many studies on school improvement (cf. Hopkins, Ainscow & West, 1994) and school effectiveness (Levine & Lezotte, 1990; Sammons, Hillman & Mortimore, 1995). A further finding was that an achievement orientation and an academic emphasis are related to school performance (Gaziel, 1997; Pang, 1998). This emphasis on achievement is also one of the recurrent themes in school effectiveness studies (cf. Scheerens & Bosker, 1997; Teddlie & Reynolds, 2000*a*). Furthermore, Heck and Marcoulides (1996) referred to an emphasis on innovation and risk-taking as an effectiveness-enhancing factor. Although studies on school effectiveness have hardly recognized factors related to change or innovation orientation, such factors have emerged from the literature on school improvement (e.g., Fullan, 1992). On the other hand, with regard to formal regulations and orderliness no effect (Pang, 1998) or even a negative effect was found on school performance (Gaziel, 1997). This seems to contrast with many studies on school effects that emphasize an orderly atmosphere, which is ensured through rules and regulations (for an overview, see Scheerens & Bosker, 1997).

Most of these studies used student achievement as a performance measure. Therefore, earlier research suggests that school performance will be related to an achievement and goal orientation, to values of collaboration and collegiality, and to teacher innovation tendencies. With regard to rule orientation, the findings are less clear. However, as in most studies on school effects a positive relationship has been found between an orderly environment and student achievement, a positive relationship between the two variables is expected. Based on these general notions, the following hypotheses were formulated:

*Hypothesis A* The valuing of goals and achievement in school is related to higher levels of student achievement

*Hypothesis B* The valuing of collaboration and collegiality in school is related to higher levels of student achievement

*Hypothesis C* The valuing of innovation in school is related to higher levels of student achievement

*Hypothesis D* The valuing of rules in school is related to higher levels of student achievement

These hypotheses are put to the test. Due to the limited research in this field, no hypotheses were formulated regarding the relationship between school culture and mean promotion rates.

## 1.5 Overview of Chapters

This chapter clarifies the context of the study. A review of existing research on the relationship between culture and performance was presented, and the concepts of culture and performance defined.

Chapter 2 outlines the theoretical framework of the study. The conceptualization and operationalization of school culture is based on the premise that culture in any organization is a mechanism that fosters integration and adaptation, and that these processes of integration and adaptation determine whether organizations will be effective. This premise reflects a functionalist approach to the development of culture. In the first section of the chapter, the assumptions underlying the functionalist paradigm are discussed. Subsequently, the *Competing values framework* is described, which guided our operationalization of school culture. In the remainder of Chapter 2, this framework is characterized by means of its four constituent orientations – human relations, open system, rational goal, and internal process.

Chapter 3 deals with the research design of the study. The first part of the study was directed at the construction and validation of the *School Culture Inventory*. For each of the phases in the validation process, the selection of respondents and analytical techniques that were used are described. The second part of the study was directed at the characterization of school cultures and studying the relationship between culture and performance. The analytical techniques employed here as well as information on non-responses are described.

Chapter 4 focuses on the construction and validation of the *School Culture Inventory*. The construction of the instrument was based on a review of related culture surveys. The inventory was further refined in an explorative study within five Dutch secondary schools. Based on the findings from the preliminary studies, the questionnaire was then revised. In a pilot-study, the revised version of the inventory was tested for its psycho-

metric quality. The inventory was subsequently examined for its reliability and validity in a confirmatory study, which constituted the last phase in the validation process.

Chapter 5 is concerned with the classification of school cultures. Based on the questionnaire data, cultural features of Dutch secondary schools are described. Furthermore, using cluster analysis, five profiles of Dutch secondary schools were identified. These profiles are characterized by means of their relative scores on each of the cultural dimensions, thereby relying on similarities as well as differences between the clusters of schools. Finally, the cultural profiles of schools are related to denomination and size.

In Chapter 6, the relationship between culture and performance is explored. For this purpose, the culture dimensions of schools –based on the *Competing values framework*– and their cultural profiles were examined for their effects. With regard to school performance, the mean student achievement scores of schools as well as the promotion rates in upper secondary school were used.

In Chapter 7, the findings of this study are summarized, and conclusions based on these findings are presented. The chapter concludes with recommendations for future research.

# Chapter 2
# Theoretical Framework

## 2.1 Introduction

Although organizational researchers have a common, almost intuitive, understanding of the concept of organizational culture, they differ on what is its essence and central features. A number of authors have tried – most of them relying on existing anthropological or sociological categories of culture – to classify these distinct perspectives (cf. Allaire & Firsirotu, 1984; Alvesson & Berg, 1992; Frissen, 1986; Meek, 1988; Smircich, 1983). A common distinction used in these classifications is whether culture reflects a number of distinct aspects of an organization, or whether culture has to be considered as a root metaphor for organizations. In the first perspective an instrumental approach towards culture is advocated. Basically, culture is dealt with as a variable which is either functional or dysfunctional for organizations. In the second perspective, organizations are conceived as 'systems of meanings'. These meanings are, as Louis (1983) argues, the product of the social interactions between the members of an organization. More specifically, it represents the organization's identity that distinguishes it from other organizations.

The distinction between the two perspectives is rooted in the difference between the functionalist and interpretive approach of organizational culture.[1] In the *functionalist* approach the cultural and social domains are integrated into a sociocultural system, postulating harmony and consonance between the two domains (Allaire & Firsirotu, 1984). In other words, from a functional perspective, the norms and values of organi-

zational members are related to other aspects of the organization, like its structure and technology. As Smircich (1983) has argued, functionalist scholars consider organizations to *have* a certain culture. This culture may be a reflection of the surrounding culture, as is assumed in cross-cultural and comparative management research (cf. Hofstede, 1984), or organizations may develop a certain culture in response to its environment, as is proposed in the so-called 'corporate culture' movement (cf. Deal & Kennedy, 1982; Peters & Waterman, 1982). Both approaches are strongly rooted in the functionalist tradition of organizational research (Allaire & Firsirotu, 1984; Burrell & Morgan, 1979; Smircich, 1983). Cross-cultural research into organizations, for example, is primarily aimed at identifying cultural differences between organizations. To a large degree, these cultural differences are attributed to the norms and values of the society of which these organizations are a part of. The 'corporate culture' movement on the other hand, emphasizes that organizations will be only effective if they are characterized by a system of values among their employees that will then enhance the quality of products and services.

Central to the *interpretive* or ethnographic perspective of organizational culture is the notion that organizations should be seen *as* cultures. This perspective promotes "a view of organizations as expressive forms, manifestations of human consciousness. Organizations are understood and analyzed not mainly in economic or material terms, but in terms of their expressive, ideational, and symbolic aspects" (Smircich, 1983, p. 347-348). Characteristic of this perspective is the concept of culture as an 'ideational system' (Allaire & Firsirotu, 1984). At the core of this ideational system are 'patterns of meaning', e.g. values, norms, organized knowledge and beliefs, or expressive forms. The anthropologist Geertz (1973) is a frequently cited proponent of this view:

> Believing … that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of a law but an interpretive one in search of meaning (Geertz, 1973, p. 144)

Culture is conceived as a system of meanings, or as inferred ideational codes lying behind the realm of observable events. These meanings are seen as the product of social interaction and negotiation. These meanings guide the organizational members' definition of the situation and, subsequently, their actions (Louis, 1983). Although the interpretive paradigm encompasses several schools of thought,[2] a common characteristic is the concern to understand the subjective experience of individuals. Interpretive theories are constructed from the standpoint of the individual actor, as opposed to the observer of action (Burrell & Morgan, 1979).

Both the functional and interpretive approach are of value in research on organizational culture. The main difference is that the interpretive approach is more feasible for distinguishing what makes a particular organization unique, whereas the functional approach is more directed at finding patterns that are functional for each organization. Stated otherwise, the functional approach offers more possibilities for comparing organizations on certain cultural aspects that are believed to be essential to an organization. Therefore, the functionalist approach can be considered to be more fruitful in uncovering cultural mechanisms related to an organization's performance. For this reason a (structural) functionalist perspective is adopted in this study. In the next section, the functionalist perspective is further explored, and an operationalization of culture dimensions is presented that is rooted in this perspective.

## 2.2 A structural-functionalist approach to organizational culture

The structural-functionalist approach is rooted in the functionalist research tradition of which Malinowski (1944) was one of the main representatives. Malinowski's functionalist position emerges most clearly in his first two cultural axioms. In the first, Malinowski argues that culture is essentially an *instrumental apparatus* that enables humankind to better deal with specific problems in their environment, while satisfying their needs. The second axiom states that culture encompasses a system of objects, actions, and attitudes in which each part exists as *means* to an *end*.

Starting from these axioms, Radcliffe-Brown (1952) states that culture does not serve individual needs, but rather an objective entity that goes beyond individuals. In his view, the function of culture refers primarily to the integration of social groups. Moreover, Radcliffe-Brown has broadened Malinowski's theory that was purely focused on functions, by identifying the concept of 'structure'. 'Structure' is as central to his theory as the 'function' of culture. His functionalist theory of human community is grounded by a presupposed analogy between social and organic life, which leads to the notion of society as 'a system of functions of a social structure'. In Radcliffe-Brown's view social structure is essentially an arrangement of individuals in institutional controlled or defined relationships. The social structure itself cannot be further reduced to certain processes or constructs. Radcliffe-Brown, thereby, refers to Durkheim's argument that "social and cultural phenomena can only be explained by social concepts", instead of physiological or psychological concepts.

Although Malinowski and Radcliffe-Brown made an important contribution to studying culture from a functionalist perspective, it was even more influenced by the

functionalist approach in sociological theory. Parsons (1951), in particular, has further elaborated structural-functionalist theory for the study of culture. Parsons identified his theory as an 'action' theory. 'Action' is distinguished from 'behavior', for action is purposeful behavior. The subject of such an action theory, therefore, is the meaningful goal-oriented actions of socialized humankind. This intentionality of human action results from the idea that the perception of situations and behavior that is based on these perceptions, are not caused by inherence or instinct but result from the learning of cultural symbols. The symbolic world on the other hand, is shaped in interaction – in other words, in common action – and maintained through interaction. The epistemological object of structural-functionalism, however, is not the concrete, empirical action, but rather the determining action programs or schemes.

Parsons's main interest was focused on the question of the determinants of social order. He therefore identified four system types: biological organic systems, psychological systems, social systems and cultural systems. Biological organic systems determine which actions individuals take from a physical perspective. Psychological systems refer to the need and motivational dispositions of social actors. Social systems consist of interdependent roles within collectivities, in which "specific interaction is regulated by norms, that are rooted in values and derived from values" (Ackerman & Parsons, 1976, p. 80). Cultural systems encompass value and meaning bases for action. The cultural system provides meaningful orientation towards the environment and the action system, the physical world, the personalities and social systems. In Parsons's view, the personality system is an operating system for the actions individuals take. The social system controls the personalities of its members and the cultural system in turn acts on the social system.

Parsons further assumes that each action system is subject to four major functions: adaptation, goal achievement, integration and latency. Adaptation involves the problem of acquiring sufficient resources and accommodating to the demands of the environment. Goal achievement reflects the problem of defining and implementing goals. Integration incorporates the problem of maintaining solidarity and unity among the members of the system. Latency consists of the problem of maintaining and renewing the motivational and cultural patterns of the system.

As a formal analytical point of reference, Parsons (1960) uses "the primacy of orientation to the attainment of a specific goal … as the defining characteristic of an organization which distinguishes it from other types of social systems" (p. 17). He further argues that "a minimal description of an organization will have to include an outline of the system of values which defines its functions and of the main institutional patterns which spell out these values in the more concrete functional context of goal-attainment itself, adaptation to the situation, and integration of the system. There are other aspects,

such as technical lore, ideology, and ritual symbolization", which are not directly related to the social system. Parsons therefore argues not to take cultural artifacts, like symbols and ideology, into account, but rather focus on the values and meaning bases that underlie the action organization members take.

Schein (1985) has further developed the functional analysis of organizational culture. Schein based his analysis of cultural processes and manifestations in organizations on Parsons's (1951) social systems theory and Merton's (1968) modifications of functional analysis, and related these to the work of Homans (1950) on group behavior. Like Homans, Schein (1985) analyzed organizational culture primarily from a social-psychological point of view. What culture does in Schein's view, is to solve the group's basic problems of surviving and adapting to the external environment on the one hand, and integrating its internal processes to ensure the capacity to continue to survive and adapt, on the other. Schein argues that the process of culture formation is, in a sense, identical with the process of group formation. Every group develops an identity – the shared patterns of thought, belief, feelings, and values – that result from shared experience and common learning within that group.

The external issues concern survival in what must be assumed to be a real environment, that is, in part, beyond the control of the group members. These external realities define the basic mission, primary task, or core functions of the group. The group must then figure out how to accomplish the core mission, how to measure its accomplishment, and how to maintain its success in the face of a changing environment. The "external" system – the physical, technological, and cultural environment – generates activities and interactions, which in turn generate sentiments and norms. Once such sentiments and norms have formed, according to Schein, they can be thought of as the "internal" system that begins to influence the external system reciprocally by also determining activities and interactions. In other words, once culture is formed, it affects how the environment is perceived and dealt with. However, as Schein notes, the environment initially determines the possibilities, options, and constrains for a group and thus forces the group to specify its primary task or function if it is to survive at all. The environment thus initially influences the formation of the culture, but once culture is present in the sense of shared assumptions, those assumptions, in turn, influence what will be perceived and defined as the environment.

## 2.3 The Competing Values Framework

A further elaboration of Parsons's AGIL scheme and Schein's theory of culture formation in organizations, can be found in the work of Quinn and his colleagues (Quinn, 1988; Quinn & Cameron, 1983; Quinn & Rohrbaugh, 1983). They developed the so-called 'Competing Values Framework', which consists of four orientations – the human relations, internal process, rational goal and open systems orientation. These four orientations basically reflect the functions of latency, integration, goal achievement and adaptation, as formulated by Parsons.

Despite this noteworthy similarity with Parsons's functions, Quinn's competing values were not derived from Parsons's work, but originated from the empirical research on organizational effectiveness. In an attempt to answer the question what key factors define organizational effectiveness, Campbell and his colleagues (1974) created a list of thirty-nine indicators that in their view represented a comprehensive set of all possible measures of organizational effectiveness. Quinn and Rohrbaugh (1983) analyzed that list of indicators to determine if patterns or clusters could be found, in order to identify key factors of effectiveness.

For that purpose, Campbell *et al.*'s indicators were submitted to a multidimensional scaling analysis from which three major dimensions emerged. One dimension differentiated effectiveness criteria that emphasize flexibility, discretion, and dynamism from criteria that emphasize stability, order and control. That is, some organizations were viewed as effective if they were able to change, able to adapt to changing circumstances, and had an organic nature. Other organizations were viewed as effective if they were stable, predictable, and mechanistic. The continuum ranged from organizational versatility and pliability to organizational steadiness and durability.

The second dimension differentiated effectiveness criteria that emphasized an internal orientation, integration, and unity from criteria that emphasized an external orientation, differentiation and rivalry. That is, some organizations were viewed as effective if they had harmonious internal characteristics, whereas others were judged to be effective if they focused on interacting or competing with others outside their boundaries. This continuum ranges from organizational cohesion and consonance to organizational separation and independence (Cameron & Quinn, 1999).

The third dimension was interpreted as reflecting the degree of closeness as a means-ends continuum. According to Quinn and Rorhbaugh (1983), some effectiveness factors were to be considered as intermediate objectives for other, ultimate, objectives. Interestingly, this dimension was not elaborated upon.[3] In their later work on the

competing values framework, Quinn and his colleagues did not further refer to this third dimension, and focused solely on the internal-external and flexibilty-control dimensions.

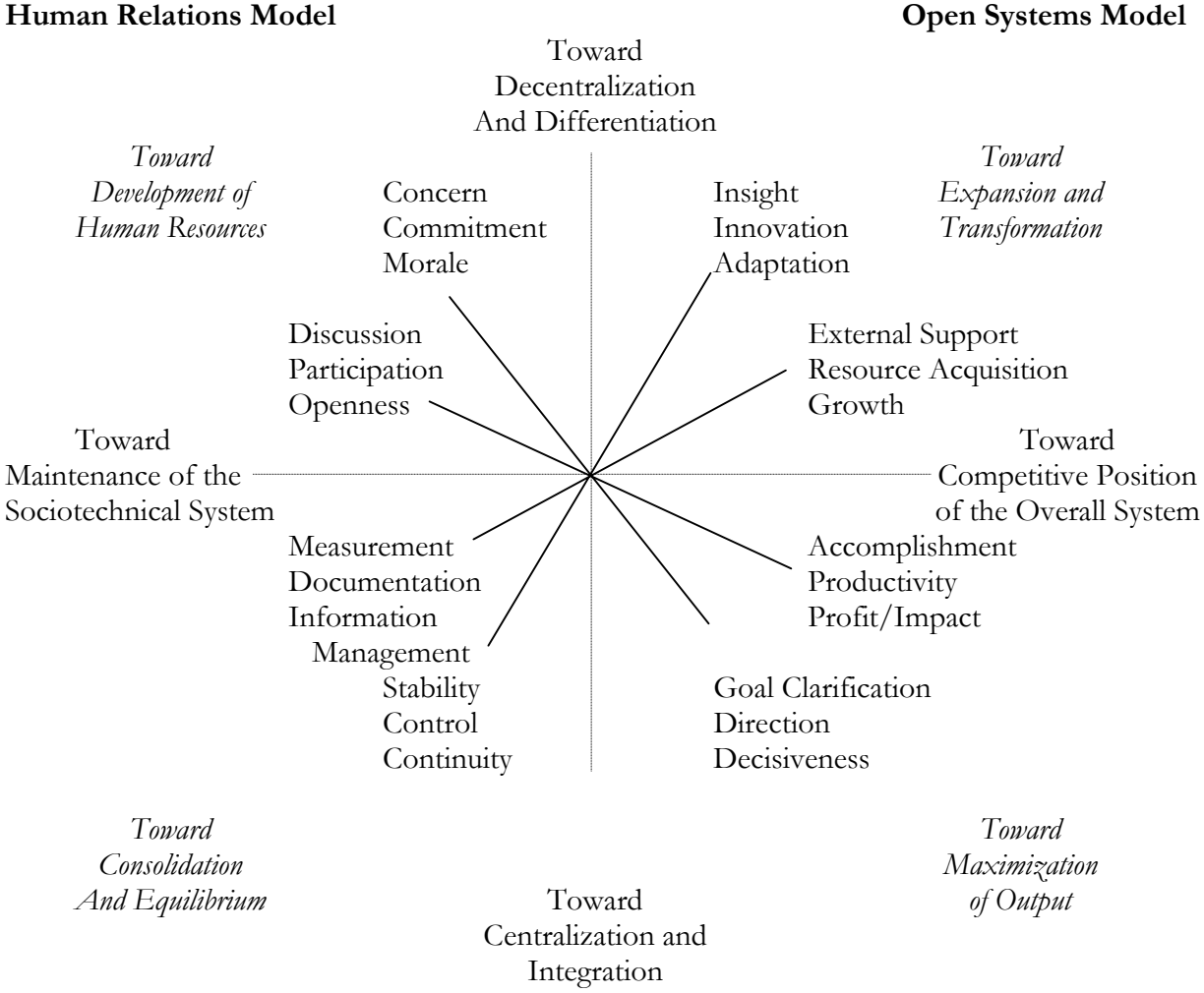


*Figure 2.1 The Competing Values Framework (derived from Quinn, 1988)*

The internal-external dimension and the flexibility-control dimension together form four quadrants, each representing a distinct set of organizational effectiveness indicators (see Figure 2.1). These indicators represent what people value about an organization's performance. They define what is seen as 'good' and 'right' and 'appropriate'. The four clusters of criteria, in other words, define the core values on which judgments about organizations are made.

Because of the value orientation of these four types, the competing values framework was used to classify different types of cultures, and at a later stage, to examine different dimensions of culture and relate these to organizational effectiveness. For this purpose, Quinn and Kimberly (1984) elaborated upon the competing values model to construct a model for organizational culture. According to them, using this cultural model "the deep structures of organizational culture, the basic assumptions that are made about such things as the means of compliance, motives, leadership, decision-making, effectiveness, values and organizational forms" could be investigated (Quinn & Kimberly, 1984, p. 298).

The first model is characterized as the 'internal process model' and contains a perspective on organizing based on the work of Weber on bureaucracies, and the early work of the Scientific Management movement. It is based on the premise that an organization can only operate effectively when its actions are clearly identifiable and coordinated in an efficient manner. Important values in this model are, therefore, stability, predictability and efficiency. These aims are achieved by means of clear operations and a clear communication system. For that reason, information management and documentation are conceived of as important means to reach the goals of the organization.

The second, referred to as the 'human relations model', is based on the basic ideas formulated by the Human Relations movement in organization theory. This movement developed in reaction to the formal tradition of the classic administration models formulated by Taylor and Fayol. The Human Relations movement emphasized the human side of administration, and believed that the fundamental challenge in all organizations was developing and maintaining dynamic and harmonious relationships. Important values in this model are a high morale of organizational members, a concern for people and commitment to the organization. This requires an open atmosphere, as well as possibilities for discussion and participation in decision making.

The third model, the 'open systems model', represents values related to responsiveness to the changing conditions in an organization's environment. The model is grounded in the open systems and contingency approach in organization science. The basic premise is that organizations are dependent on their environment for inputs, and can only operate in an adequate manner if their activities are perceived as legitimate by a number of groups in their environment. This implies that organizations need to adapt to their environment, in both a reactive and pro-active way. Values that are at the core of this model, therefore, are innovation, insight and adaptation. These values are required in order to acquire the necessary resources for maintenance and further growth and for ensuring external support from stakeholders in the environment.

The fourth model is characterized as the 'rational goal model'. This model is not clearly rooted in any theoretical movement in organization science, but reflects a pragmatic approach to organizations as entities that are directed at achieving their goals. To a certain degree, it is closely related to the internal process model, as it tries to control – in a rational way the processes that lead to a gain in performance. Unlike the internal process model, however, the results of actions are fed back, which determines further action. Important values in this model are productivity and effectiveness, and in order to reach these goals, goal clarification, feedback and a rational means-ends approach are considered to be important.

Although Quinn and his colleagues refer to the internal-external and the control-flexibility aspect as the guiding framework for classifying competing values, these values are treated as independent factors in their operationalization of the framework (Cameron & Quinn, 1999; Quinn, 1988). This ambiguity in Quinn's work was pointed out by Van Muijen (1994). He argued that, from a conceptual perspective, each of the four value orientations represents different aspects of organizational functioning. For instance, a clear focus on the rational goal orientation, with values of productivity and performance, does not imply that organizational members do not value a high morale among staff members, or do not think of commitment as an important feature. Similarly, an emphasis on the internal process, with values of control and continuity, does not indicate that external support or growth is valued less. Van Muijen (1994), therefore, concludes that the internal versus external, and flexibility versus control dichotomies have to be considered as 'a frame of reference' instead of 'a coordinate system' (see also Boerman, 1998). Van Muijen's research into the conceptual structure of the framework con-firmed this notion. Further confirmation for the four-dimensional structure of the framework is to be found in Zammuto and Krakower's study (1991). On the other hand, Houtveen, Voogt, Van der Vegt and Van de Grift (1996) found that three dimensions –in which the internal process and rational goal orientation were merged into one factor– better reflect the value orientations of the competing values framework.

The competing values framework can be further criticized for its naming of the dimensions. The internal-external dimension is concerned with internal integration and external adaptation of organizational activities, which is rooted in earlier work of Scott (1981) and Schein (1985). The naming of the second dimension, which reflects the control-flexibility continuum, however, is less evident. The concepts that are at the core of this dimension are simultaneously used to characterize the core values of the internal process model and the open systems model. This implies either that the framework lacks orthogonality, or that the naming of the dimensions should be reformulated to better reflect the issues in the human relations orientation and rational goal orientation as well.

## 2.4 Competing values and performance

Quinn (1988) has stated that organizational culture –as identified by the human relations, internal process, rational goal and open systems orientation– is related to the effectiveness of organizations. His reasoning regarding this relationship largely reflects Parsons's assertions, who argued that organizations have to solve four basic problems if they are to survive, grow and develop (Parsons, Bales & Shils, 1953). Parsons, in this respect, referred to the adaptability, goal attainment, integration and latency each organization has to fulfill.

Despite this familiarity with Parsons' theory, Quinn's (1988) hypothesized relationship between organization culture and performance is more of a paradox. In accordance with Parsons, Quinn argues that an organization has to value the aspects of each of the four culture orientations in order to be effective. An organization without clear values, or with counteractive values will be ineffective, as it lacks a mission or direction for the organization to pursue. Although Quinn does not elaborate on what is meant by 'unclear' and 'counteractive' values, in a general sense, he indicates that values in organizations need to be consistent and coherent.

The paradox in his model relates to the fact that the valuing of the four culture orientations does not necessarily mean that higher levels of performance are achieved. On the contrary, as Quinn argues, values might become overemphasized, which results in decreasing performance. To clarify this paradoxical nature of the relationship between culture and performance, Quinn introduced the concepts of 'positive zone' and 'negative zone' (see Figure 2.2). At the core of his argument is that values, which reflect certain effectiveness criteria, will become criteria of ineffectiveness when pursued blindly. These latter criteria are depicted in the outer circle of Figure 2.2.

With regard to the human relations orientation, Quinn (1988) outlines that an overemphasis on commitment, morale and human development might result in extreme 'permissiveness' and 'uncontrolled individualism'. Discussions and participation, on the other hand, may become 'carried to inappropriate lengths'. Too much emphasis on aspects of the open systems orientation might result in 'disruption' and 'discontinuity'. Overemphasizing change and innovation might turn into 'premature responsiveness' and 'disastrous experimentation'. Furthermore, concern for external support, and resource acquisition might evolve into 'political expediency' and 'unprincipled opportunism'.

With regard to the rational goal orientation, Quinn argues that an overemphasis on effort, productivity, and an emphasis on profit or impact, might turn into 'perpetual exertion' and 'human exhaustion'. Similarly, concern for goal clarification and decisiveness might result in 'strict regulation' and 'blind dogma', in which little room is left for

individual differences. Furthermore, too much emphasis on aspects of the internal process orientation might turn the organization into a bureaucracy, in which everything is strictly regulated and little room is left for initiatives of organizational members.

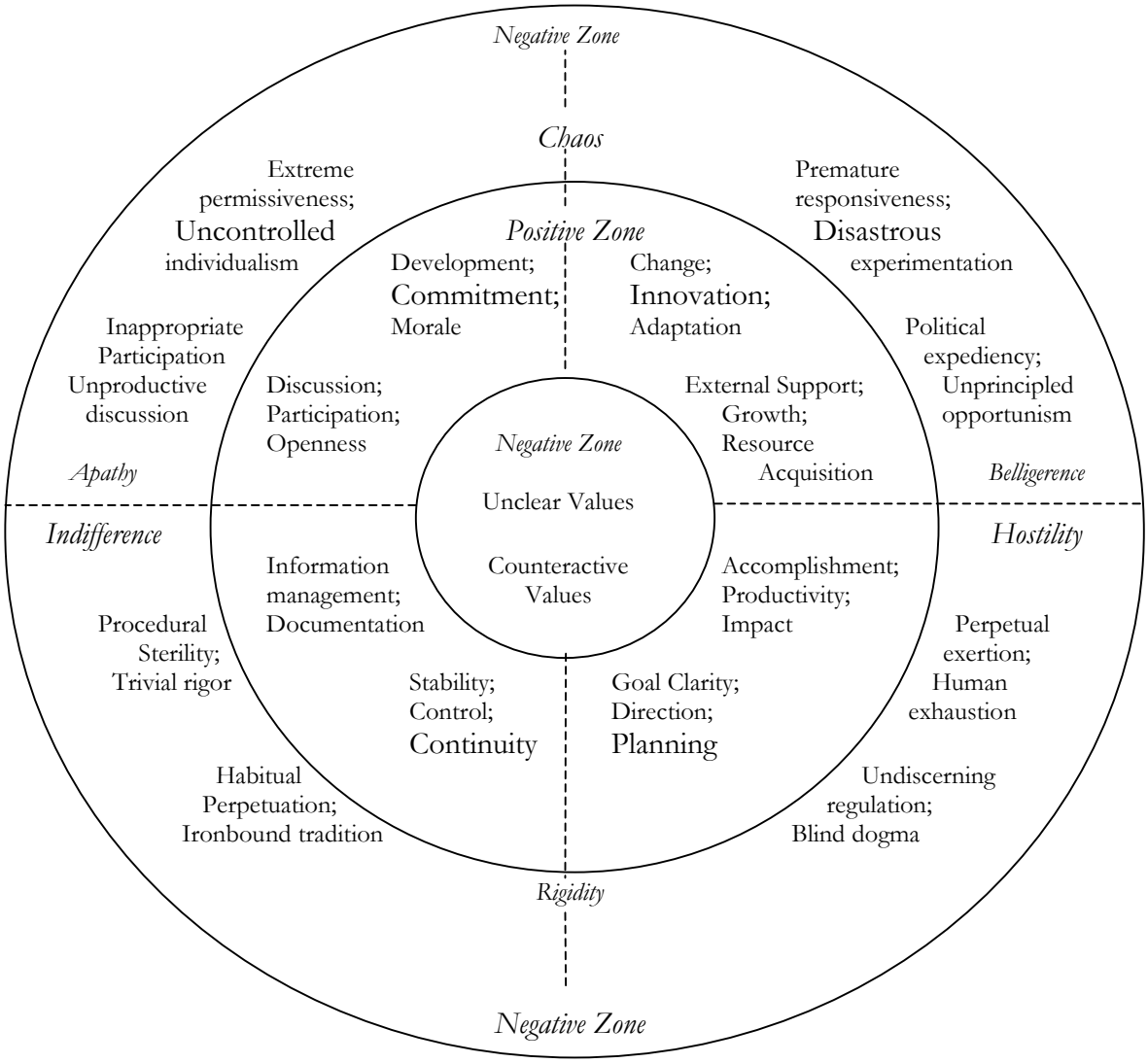


*Figure 2.2 The positive and negative zones of culture effects on performance (derived from Quinn, 1988)*

Although Quinn's conception of effectiveness is certainly appealing, his 'theory' of organizational effectiveness fails to address some essential aspects of the relationship between culture and performance. First, Quinn does not clarify where the 'negative zone' ends and the 'positive zone' starts. His discussion of effective cultural profiles in subsequent life stages of organizations suggests that the boundaries between the negative and

positive zone are dependent on contingency factors. This implies that whether certain values are overemphasized or not depends on a number of context variables, like the age and size of the organization, and the complexity and uncertainty of the environment (cf. Mintzberg, 1979). This implies that the boundaries of the positive and negative zones will differ across organizational types and are subject to change over time.

A second critique concerns Quinn's (1988) ambiguous concept of effectiveness in relation to the cultural dimensions. His classification of effectiveness is based on the same dimensions as his classification of organizational culture. This implies that the difference between the two concepts, and consequently the relationship between these concepts, becomes blurred, at least for those aspects of effectiveness that are measured by means of the perceptions of organizational members. Furthermore, Quinn fails to indicate whether organizations which fall into the negative zone on one the four culture dimensions are ineffective on each of the effectiveness dimensions, or just on the concerned effectiveness dimension. Also, Quinn does not indicate whether gradations in effectiveness can be discerned. For instance, is an organization which falls into the negative zone on one of the culture dimensions expected to be more effective than an organization that falls into the negative zone on two of the culture dimensions?

A third critique concerns the theoretical and empirical foundations of his theory of culture and effectiveness. Quinn does not clarify which consequences will result from an overemphasis of certain values, and how these consequences will result in ineffectiveness. Furthermore, Quinn presents no empirical support –other than a few illustrative case studies– for his argument that culture is related to effectiveness. To some degree, others have provided some empirical evidence for the relationship between the four cultural orientations and effectiveness in business organizations (Denison, 1984; 1990; Denison & Mishra, 1995) and institutions for higher education (Cameron & Ettington, 1988; Cameron & Freeman, 1991; Smart & Hamm, 1993; Smart & St. John, 1996). However, the empirical support for the relationship between organizational culture and effectiveness, judging these studies, is still rather weak (see also Wilderom, Glunk & Maslowski, 2000).

# Chapter 3
# Research Design

## 3.1 Introduction

It is evident from the first chapter that the aim of this study is threefold. The first objective of this study is to construct and validate an inventory for diagnosing school culture in secondary education, based on the competing values framework. The second objective is to provide information on cultural characteristics of Dutch secondary schools, and to explore whether a typology of school cultures can be constructed. Our third objective is concerned with testing and further exploring the relationship between culture and performance in secondary education. Based on these objectives, two basic types of research can be distinguished. The first type refers to the construction and validation of the *School Culture Inventory*, which is characterized as an instrumental-nomological study. The second type is of an analytical-empirical nature, encompassing the characterization of organizational cultures in secondary schools and the study on the culture-performance link.

The research design for the validation study is further described in Section 3.2. For each of the phases in the validation process, the sample, research procedure and the analytical techniques are examined. In Chapter 4, the results of the validation study are discussed in detail. The research design for the second type of research, i.e. the empirical study of cultures in secondary education and their relationship with performance, is described in Section 3.3. The results of these analyses are subsequently examined in chapters 5 and 6.

## 3.2 Validation study

The basic research question of the validation study concerns the development of an inventory for measuring secondary school culture. This implies that the research in this part of the study is primarily directed at determining the psychometric requirements of reliability and validity. Basically, *reliability* refers to the accuracy of measurement. In other words, reliability is determined by examining the consistency and replicability of the responses on the culture scales. An instrument is perceived to be reliable if it provides the same outcomes under repetitive measurements while maintaining the same circumstances. Cronbach (1990) has outlined a number of methods to determine the reliability of an inventory – the test-retest, the alternative form, the split-halves and the internal consistency method. In this study, we focus on the internal consistency or homogeneity of the scales as measure of reliability.[1]

The validity of an inventory refers to the degree to which an instrument actually measures what it is supposed to measure. An often-used classification of validity types concerns content validity, construct validity and criterion-related validity (Carmines & Zeller, 1979). *Content validity* depends on the extent to which an empirical measurement, i.e. the dimensions of school culture, reflects a specific domain of content, in our case the values that are relevant to secondary schools. Furthermore, each of the values has to be represented in items that measure the various aspects of these values. Content validity, therefore, is concerned with the accurate operationalization of all relevant aspects of the concept that is measured.

*Construct validity* is concerned with the theoretical underpinnings of the concepts that we attempt to measure. Basically, construct validity indicates whether the concepts that were derived from a theory are operationalized in way that reflects this theory. As Carmines and Zeller note, construct validation involves three distinct steps. The first concerns the specification of the theoretical features of, or the relationship between, the concepts. Second, the empirical relationship between the concepts, or the distinct features of the concepts are examined. Then, in the third step, the empirical evidence is interpreted in terms of how it clarifies the construct validity of the concepts at hand.

*Criterion-related validity*, finally, is concerned with the similarity of the outcomes of the inventory with other measures, i.e. the criterion, that bear close resemblance to the construct that is measured in the scales (Cronbach, 1990). As Carmines and Zeller (1979) argue, one can differentiate between two types of criterion-related validity. If the criterion exists in the present, then *concurrent validity* is assessed by relating a measure and the criterion at the same point in time. The second type, *predictive validity*, on the other hand, concerns a future criterion, which is related to the concept at hand. In our case, we

attempt to develop an inventory for diagnosing culture, which can be used in the research on school effectiveness. Therefore, it might be argued that the relationship found between culture and performance reflects criterion-related validity. However, we will not treat our analysis of the relationship between culture and performance as such. In the validation study, therefore, no further attention was denoted to the criterion-related validity of the inventory.

To address the internal consistency, and the content and construct validity of the inventory, three phases of instrument development can be identified. First, a preliminary study was conducted with a view to legitimizing our efforts to construct a questionnaire for measuring school culture. For this purpose, several case studies were planned and for these a preliminary form of the *School Culture Inventory* was used. Second, based on the findings from the case studies, the *School Culture Inventory* was adjusted and then tested in a pilot-study. Subsequently, the reliability and validity of the inventory was examined in a confirmatory study.

### *3.2.1 Preliminary study*

The preliminary study was directed at exploring whether the operationalization of school culture –as based on the competing values framework– forms an accurate reflection of secondary school values, whether this operationalization of school culture is suitable to discriminate between schools and, third, whether an inventory is an adequate research method to identify values in school organizations.

The preliminary study consisted of two phases. The *first phase* concerned an in-depth study of one secondary school. Two members of the school management team and five teachers were interviewed, the lessons of five teachers were observed, and during one week several informal school activities were attended. The interview with the *school principal* and the *deputy principal* focused on the background and impressions of the (deputy) principal, the school's history and policy, its aims and identity, the implementation of educational innovations, and the role of educational leadership in school (see Appendix II). The interviews with teachers addressed the school's history and policy as well as its aims and identity. Besides interviews and observations, a number of school documents were analyzed, including the school guide, a recent strategic plan, the latest annual report of the school and a variety of school specific information. In addition to these qualitative research methods, a preliminary form of the *School Culture Inventory* (Form I-A) was submitted to all the school staff ($n$ = 75).

In the *second phase* four secondary schools were studied. The principal of each of these schools was interviewed, relevant school documents were analyzed, and a revised

version of the *School Culture Inventory* (Form I-B) was submitted to all staff members. The guideline from the first phase was used for the interview with the principal.

*Respondents*

One school was selected for the *first phase* of the preliminary study, which comprised a convenience 'sample'. One of the teachers of this school had already participated in another research project. For the *second phase* of the study eleven schools were selected using a stratified sample on denomination and school size. From these schools, four agreed to participate in the study.

The school principal was interviewed for the *qualitative analyses* of the first and second phase of the preliminary study. In addition, during the *first phase* of the study one deputy principal and five teachers were interviewed. The lessons of the five teachers were also observed prior to the interview. The teachers were selected by the principal based on our request to choose teachers that differed with respect to their length of service, age, sex and subject taught. The principal also selected the deputy principal to be interviewed.

*Table 3.1 Research Methods used in Phase I and Phase II of the Preliminary Study*

| *Preliminary study Phase I (1 school)* | *Preliminary study Phase II (4 schools)* |
|---|---|
| Interviews (principal, deputy-principal and five teachers) | Interview (principal) |
| Observations of lessons (five teachers) | |
| Participation in informal activities | |
| Document analyses | Document analyses |
| Questionnaire (Form I-A) | Questionnaire (Form I-B) * |

* The questionnaire was only distributed in three schools

For the *quantitative analysis* for both phases of the study a preliminary version of the questionnaire was distributed among all staff members, i.e. all teachers and members of the school management team. The response to the questionnaire differed widely among schools. In the school that participated in the *first phase* of the study, 69% of staff members returned their questionnaire. For two of the four schools that participated in the *second phase*, the response was considerably lower. One principal even decided not to distribute the questionnaire among his teachers. Therefore, the data on this school could not be used for analyzing the feasibility of questionnaires in school culture research. Furthermore, in one school only 11% of staff members returned the questionnaire, this

school was also excluded from the 'feasibility analysis'. For the remaining two schools, the response to the questionnaire was found to be satisfactory, ranging from 43% to 63%. Because this still indicates a considerable non-response, it was identified whether the respondents were representative of the staff members at each of these schools regarding their sex and subject taught. The check revealed no clear indication of a response bias.

### *Analytical techniques*

The case studies were aimed at identifying relevant cultural aspects and elements in secondary schools. An understanding of the constituent aspects and elements of culture is needed in order to determine whether the four orientations of the competing values framework can be found in the cultural manifestations of schools. Furthermore, it might indicate that the framework is only concerned with a few relevant cultural elements of schools. To deal with these issues, it was decided to use methods that were likely to produce 'rich data'. For that purpose, semi-open interviews, observations and document analyses were used. By means of induction from these qualitative techniques, relevant values were identified for each of the schools.

This approach has a number of parallels with the grounded theory method of Glaser and Strauss (1967). Glaser and Strauss have argued that theories and concepts should develop from field observations. The underlying assumption of their method is that human action and social processes are rich and complex phenomena, which can only be understood from sensitive observations in the field and logical reasoning. At the root of their method, therefore, are "the insights of the observer", and the subsequent "development of theory from these insights" (p. 251-254). However, unlike Glaser and Strauss, we are less concerned with developing concepts and theories. Our primary aim is to test whether the induction of school values from the interviews and observations revealed similar outcomes as the deduction of values from the competing values framework, and from the literature on organizational culture. Despite this different purpose, the grounded theory approach was found to be helpful in guiding the analysis of the qualitative data.

This analysis followed two distinct phases which reflected the analytic scheme developed by Taylor and Bogdan (1984), thereby building on the grounded theory method. The first was an on-going discovery phase, i.e. the identification of themes and the development of concepts and propositions. The second phase entailed the coding of data and refining the characterization for each of the individual school cultures. For both phases, *ATLAS/ti* software (Muhr, 1997) was used to support the data analysis. The

*ATLAS/ti* program is based on 'hermeneutic units', which reflect the basic entities analyzed.

In our study, a hermeneutic unit was created for each separate school. These units contained a number of 'primary documents', i.e. transcriptions of the interviews, notes from observations, and excerpts from analyzed documents. Text passages in each of the primary documents were coded and then grouped into 'code families', which is an umbrella term for codes that reflect similar or related themes. These code families were rated on a number of properties derived from the classification scheme Strauss and Corbin (1990) developed. Each of the code families was rated regarding the frequency it was mentioned, the internal consistency of the values, and the intensity, i.e. the relative importance of these values. Where values had recently changed or where values were strongly rooted in the school's history, temporal aspects of values were rated as well.

Based on these analyses for each school a case study report was written and compared to the questionnaire's findings. For the school in the *first phase* of the study, only responses on individual items were taken into account, as the scales were found not to be reliable. For the case studies in the *second phase*, the results of the qualitative analysis were compared to the mean scale ratings as well as to the individual items. Only descriptive statistics were used for comparing the qualitative and quantitative analyses.

### *3.2.2 Pilot-study*

Based on the outcomes of the preliminary study, the *School Culture Inventory* was revised and this revised version, *Form II*, included four scales, each referring to one of the orientations in the competing values framework. Each of these four scales consisted of 10 items.

The questionnaire was tested in a pilot-study to determine whether the four dimensions of school culture were substantiated by empirical data on secondary school values. Furthermore, the pilot-study was aimed at identifying whether school culture dimensions were suitable to discriminate between schools, and whether these dimensions were internally consistent. To address these aspects of reliability and construct validity, the *School Culture Inventory* was tested in five secondary schools and the inventory given to all the staff members.

#### *Sample*

For the pilot-study a stratified sample of twelve schools was taken based on the denomination and size of the school. Of these twelve schools, one was eliminated from

the sample for this school had already been approached to participate in one of the case studies. Of the remaining eleven schools, five schools agreed to participate in the study. These schools, however, were not representative of the sampled schools regarding their denomination and size. As is shown in Table 3.2, Catholic schools did not participate in the pilot-study (see *Appendix I* for an explanation of the Dutch education system). Furthermore, there was a tendency for relatively smaller schools to be included.

*Table 3.2 Characteristics of participating schools*

| school | school tracks | denomination | number of locations | number of teachers |
|---|---|---|---|---|
| A | VBO/MAVO/HAVO/VWO | Protestant | 4 | 290 |
| B | HAVO/VWO | Protestant | 3 | 192 |
| C | MAVO | Other | 1 | 63 |
| D | VBO/MAVO/HAVO/VWO | Other | 1 | 18 |
| E | VBO/MAVO/HAVO/VWO | Public | 3 | 145 |

A stratified sample was chosen to ensure that schools would vary on the school culture variables. This aim seemed not to be threatened by the size of the participating schools. Although the mean size of the schools in the study was beneath the sample mean, the discrepancy was relatively small. The only serious violation was the denomination of schools, i.e. exclusion of Catholic schools in the pilot-study. Despite this bias, it can nevertheless be argued that this is 'compensated' to a large degree by including two schools with other denominations: a private non-denominational school and a Free school (Waldorf school), which are expected to differ notably with regard to their core values. Therefore, the required variability in school cultures was likely to be ensured.

The response rates within the participating schools ranged from 27% to 68%, with a total of 253 respondents. The response appeared to be lowest in the three largest schools. Despite the relatively low response rates for these schools, no indications were found for a bias regarding their location. Also, a check for subject matter taught and sex of the respondents revealed no bias for these variables.

### *Analytical techniques*

An exploratory factor analysis was used to determine the factor structure of the instrument. For this purpose, a principal components analysis with a varimax rotation was employed. Three criteria were used to examine the factor structure. First, the criterion of

simple structure was employed. Only items that loaded high, at least 0.30, on one factor and weak on all others were assigned to the consecutive factor. Next, in addition to their contribution to the factor (high factor loadings), items were evaluated for conceptual clarity and fit. This means that items were only retained if they clearly related to the other items that loaded on the same factor. Finally, items were eliminated if they reduced substantially the internal consistency of the scales as measured by Cronbach's coefficient $\alpha$. For each item within the scales, the item-rest correlation ($r_{ir}$) was further examined. Items with a $r_{ir}$ that was less than 0.30 were eliminated from the scale.

### *3.2.3 Confirmatory study*

The *School Culture Inventory* was then examined for its reliability and validity in a confirmatory study, which constituted the last phase of the validation process. By means of a confirmatory factor analysis, it was determined whether the dimensions from the explorative factor analysis were confirmed in a representative sample of 40 schools. It was also determined whether the inventory revealed reliable measures at the aggregated level of schools. For this latter inquiry, school locations were used as the level of analysis.

#### *Sample*

For the confirmatory study 145 schools were randomly sampled, being 20% of the population of Dutch secondary schools. Two schools were excluded from this sample because they had already been selected for the previous preliminary or pilot-study. Furthermore, twelve of the sampled schools had merged with other schools at the time they were asked to participate in the study. This was due to the fact that the sample had been taken from a data file of the previous school year. Four of these schools had, in fact, merged with other schools in the sample. For this reason, the actual sample was further reduced by two schools. In the other eight cases, it was decided to include the merger schools in the sample. The primary reason for doing this was to maintain a representative sample. Assuming that these schools were to be considered as a sample of recently merged schools, they were retained in the sample. In short, a total of 141 schools were asked to participate in the main study.

Of these schools, 40 schools agreed to participate (28%). In total, these schools consisted of 68 school locations. The primary reason for not participating in the study, according to school principals, was that teachers were already overloaded with work. Participation in the study, it was argued, would result in an even heavier workload. Another frequently mentioned reason was that the schools were engaged in another

research project at that time or had just finished another research project. As these factors might influence the representativeness of the participating schools, it was decided to compare the participating schools on a number of aspects with the total school population. For this purpose, a comparison was made regarding the denomination of each school, its type and size.

*Table 3.3 Denomination of participating schools in the main study compared to the school population (1996-1997)*

| | Denomination | | | |
|---|---|---|---|---|
| | Public | Protestant | Catholic | Other |
| Participating schools | 11 (28%) | 6 (15%) | 13 (33%) | 10 (25%) |
| Population of schools | 159 (22%) | 138 (19%) | 246 (34%) | 181 (25%) |

As shown in Table 3.3, the number of participating Catholic schools and schools with other denominations are an accurate reflection of the population. On the other hand, a relatively large number of public schools participated in the study, while Protestant schools are underrepresented. A Chi-square test, however, revealed that no strong deviances for denomination between the participating schools and the population of secondary schools in the Netherlands were present ($\chi^2 = .88$, d.f. = 3, $p = 0.83$).

*Table 3.4 School type of participating schools in the main study compared to the school population (1996-1997)*

| | School Type | | | | | |
|---|---|---|---|---|---|---|
| | VBO | AVO (categorial) | VWO | AVO CS | AVO/VBO (small) | AVO/VBO (large) |
| Participating schools | 3 (8%) | 3 (8%) | 1 (3%) | 13(33%) | 6(15%) | 14(35%) |
| Population of schools | 61 (8%) | 87(12%) | 40 (6%) | 169(27%) | 70(10%) | 253(35%) |

*VBO* = the school has only a VBO track (this may concern various [combinations of] disciplines; *AVO Categorial* = the school has only a MAVO or HAVO track; *VWO* = the school has only a VWO track (either Atheneum, Gymnasium or Lyceum); *AVO CS* = the school has a combination of MAVO, HAVO and VWO tracks; *AVO/VBO (small)* = the school has only one AVO track (usually MAVO) and a VBO track; *AVO/VBO (large)* = the school has VBO/MAVO/HAVO tracks or VBO/MAVO/HAVO/VWO tracks. *For an explanation of tracks, see Appendix I.*

A further test was done for the type of the school. For this purpose, the classification of school types used by the Dutch Ministry of Education was applied. The results of this, presented in Table 3.4, also revealed no significant differences between the participating schools and the school population ($\chi^2 = 2.83$, d.f. = 5, $p = 0.73$).

Subsequently, a *t*-test was performed to assess the representativeness of the participating schools with respect to the mean school size. This analysis revealed that no indications were found for differences in size between the participating schools and the population of secondary schools in the Netherlands ($p = 0.36$). It was therefore concluded that the participating schools were representative for the population.

*Table 3.5 Mean school size (number of students) of participating schools in the main study when compared to the population of schools (split for school type) (1996-1997)*

| | Mean school size | | | | | | Total mean |
|---|---|---|---|---|---|---|---|
| | VBO | AVO Categorial | VWO | AVO CS | AVO/VBO (small) | AVO/VBO (large) | |
| Participating schools | 517 | 399 | 253 | 1023 | 395 | 2028 | 1177 |
| Population of schools | 466 | 346 | 571 | 1044 | 663 | 1957 | 1170 |

*For an explanation of tracks, see Appendix I.*

The response rates within the participating schools varied from 20% to 71%, with a total of 1,301 respondents (46%).

### *Analytical techniques*

In order to test whether the conceptual structure found by exploratory factor analysis in the pilot-study was stable, a confirmatory factor analysis was performed. A measurement model was specified (see Figure 4.1). In this model, the four factors were identified which reflect the subsequent models of the competing values framework. Each of these factors (i) is measured by ten items (j), and each item is specified to relate to only one factor ($\lambda_{i,j}$) in accordance with the results from the principal components analysis. These 40 items represented the observed variables. In the measurement model, each observed variable was also caused by a second latent variable, which represented the residual (or unique factor) for that particular item ($\varepsilon_j$). Finally, each of the four factors was allowed to correlate with the other latent variables ($\psi_{i,i}$).

A LISREL analysis was performed to test whether this model fitted the data. In Jöreskog and Sörbom's (1993) terms, a 'strictly confirmatory' procedure was followed. This implies that only one single model was formulated and fitted against empirical data. The strictly confirmatory test was directed at the acceptance or rejection of the proposed model, instead of further refining it. To assess the fit between the formulated model and the data obtained from the study, an examination of the parameter estimates was performed, and several indices for overall fit, including the Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI) and the Root Mean Square Residual (RMR) were taken into account (Jöreskog & Sörbom, 1988).

Furthermore, the reliability of the four culture orientations was determined at the level of school locations. Following the general definition of reliability as the variance of true scores divided by the variance of observed scores, the reliability $\lambda_j$ of the culture orientations aggregated for school location is given by (Snijders & Bosker, 1999, p. 26):

$$\lambda_j = \frac{\tau^2}{\tau^2 + \sigma^2 / n_j} \tag{3.1}$$

where $\tau^2$ is the between-group variance, $\sigma^2$ is the within-group variance and $n_j$ represents the number of respondents at school *j*. In estimating the reliability, the harmonic mean of the number of respondents was used in formula (3.1).

## 3.3 Analytic-empirical study

The analytic empirical study addressed the two research questions formulated for this study: "What are the cultural characteristics of Dutch secondary schools and are these characteristics influenced by the context of the school?" and "Is school culture related to the performance of secondary schools in the Netherlands?" In order to answer these research questions, data from the confirmatory study (Section 3.2.3) were further analyzed. These analyses were performed at the level of school location as defined by the Dutch *Inspectorate of Education*.

A number of descriptive analyses were used to characterize secondary school cultures, and to examine cultural differences between schools with regard to their denomination and size. Furthermore, in order to identify cultural profiles of schools, a cluster analysis was performed.

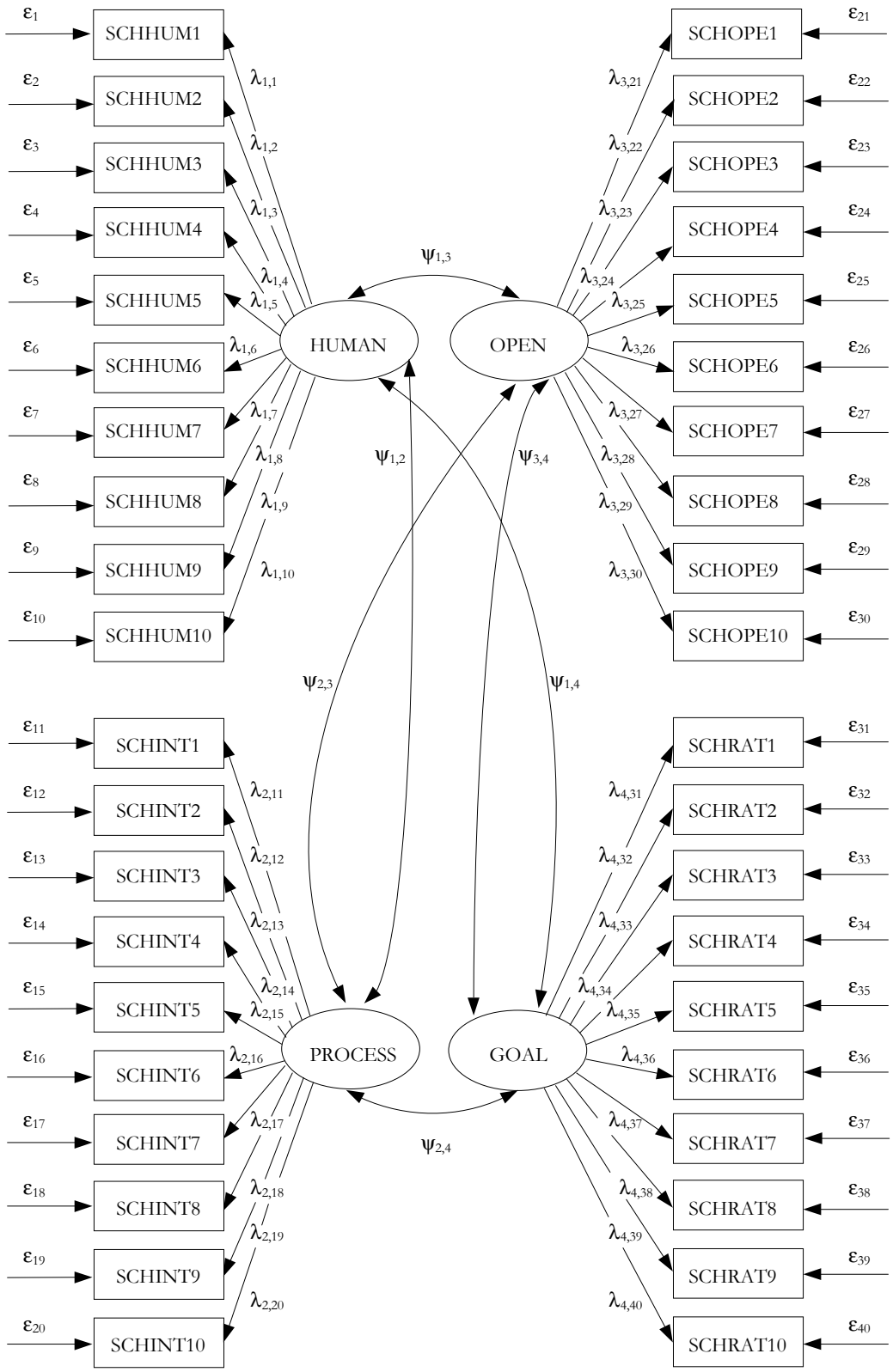


*Figure 3.1 Constructed model for the validation of the structure of the School Culture Inventory*

For the research question on the relationship between culture and performance, data from the confirmatory study were related to performance data published by the Dutch *Inspectorate of Education*. Using a multivariate analysis, the effect of each of the four culture orientations and the effect of the cultural profiles on two performance measures –student achievement and promotion rates– were analyzed

### *3.3.1 Sample*

For the analytic-empirical study the sample was used that was described in paragraph 3.2.3. For analyzing the relationship between school culture and performance the individual responses on the *School Culture Inventory* were aggregated at location level and linked to the performance data of three subsequent years. For one of the 68 school locations that participated in the study no data were available in the records of the *Inspectorate of Education*, So this location was excluded from the analyses.

For five schools (or school locations) the data for one or two years were missing. By means of school addresses two of these schools were traced. In both cases the original schools had merged with other schools, but were still in a separate location. The data of these locations were linked to the data of the particular schools in the preceding year(s), while incomplete data of the three other schools (or school locations) were retained in the analyses. To sum up, 67 school locations were included in the analyses, of which 3 were incomplete.

### *3.3.2 Analytical techniques*

For constructing school profiles in Chapter 5 a cluster analysis, in combination with a discriminant analysis was used. For the relationship between culture and performance a multivariate analysis was used. These techniques are further described below for each the analyses.

#### *Typology of school cultures*

To determine the cultural profiles of schools, a cluster analysis was performed. Cluster analysis represents a number of procedures by which means groups of highly similar entities, i.e. clusters, can be obtained empirically. More specifically, as Aldenderfer and Blashfield (1984) note, cluster analysis is "a multivariate statistical procedure that starts with a data set containing information about a sample of entities and attempts to reorganize these entities into relatively homogeneous groups" (p. 7). It is, therefore, useful in

developing a typology or classification of organizational culture in secondary education.

To depict cultural profiles of schools by means of a cluster analysis, it has to be identified whether (patterns in) culture scores show resemblance across schools. This is done using a similarity measure, which quantifies the correspondence between cultural patterns of two schools. Similarity measures differ with respect to the degree in which certain similar characteristics of schools are shown. An agglomerative hierarchical cluster analysis is applied using Ward's method for cluster formation (Ward, 1963). This method is designed to optimize the minimum variance within clusters (Aldenderfer & Blashfield, 1984). Characteristic for Ward's method is that it minimizes dispersion within groups and favors the formation of small clusters of approximately equal size (Everitt, 1993). For each cluster the means for all variables are calculated. Then for each case the squared Euclidean distance to the cluster means is calculated (Norušis, 1988). These distances are summed up for all cases. At each step, the two clusters that merge are those that result in the smallest increase in the overall sum of the squared within-cluster distances.

A crucial step in interpreting cluster analyses is determining the number of clusters. Various methods have been developed for this purpose. Most are relatively informal and basically involve plotting the value of the clustering criterion against the number of groups. Large changes of level in the plot usually indicate a particular number of groups. As Everitt (1993) notes, these informal methods are to be considered highly subjective, especially in those cases where no major difference in fusion levels can be found for a single number of clusters. For that reason, a number of more formal techniques have been described which try to overcome the problem of subjectivity (cf. Milligan & Cooper, 1985).

However, as Aldenderfer and Blashfield (1984) note, these techniques often lead to different results. Moreover, the compatibility of many techniques is dependent on certain characteristics of the actual clusters, which are a priori unknown. Although some techniques appear to be better predictors of the actual number of clusters than other techniques (Milligan & Cooper, 1985), these techniques are to be considered as grounded heuristics, instead of unambiguous determination procedures. Other features, like the existence of significant differences between clusters on the identified culture scales and the interpretability of clusters, outweigh the formal determination of number. For that reason, a determination procedure was followed derived from Bosker (1990), based on comparing several cluster solutions, within a reasonable range, with regard to four criteria. First, the increase in squared Euclidean distance within the selected clusters has to be relatively large. Second, the distribution of schools over clusters has to be relatively equal. Third, the clusters should be discriminative with respect to the variables on which the clusters are based, and fourth, the clusters have to be able to be interpreted with

regard to our aim of constructing cultural profiles for secondary schools.

To analyze the clusters, the Hierarchical Cluster Analysis module in *SPSS* was used, which was based on the standardized mean scores of schools on each of the four culture orientations. The main reason for using standardized scores is that the cultural profiles are not biased towards culture orientations with relatively large variance. The *SPSS* package was also used for the discriminant analyses.

*Relationship between school culture and school performance*

In this study, mean examination scores of students and mean promotion rates in upper secondary school were used as measures of school performance. These measures were taken from the performance data made available by the Dutch *Inspectorate of Education* for all Dutch secondary schools.[2]

The measure of *student achievement* is based on students' performance on the national examinations. These examinations consist of subject specific standardized tests for each of the school tracks VBO, MAVO, HAVO and VWO. The student achievement measure encompasses all subjects that are examined. For each school, the participation of students in these examinations varies across subjects. Certain subjects are chosen by a large number of students, whereas other subjects are chosen by only a few students. To avoid unfair comparison between schools (and school locations), a weighted mean score for all subjects based on the number of students was computed.[3]

The *promotion rate* in upper secondary school is an estimate of the probability that students will be promoted to the next grade. This is computed by averaging the actual promotion rates in the upper grades for each school.[4] Both mean student achievement and mean promotion rates in upper secondary school are determined for each school location and school track separately. For the analyses, the performance measures were averaged over three subsequent years, from 1997 to 1999.

Using this composition of the dependent variable, the multivariate model in which the effect of culture on schools' performance is investigated was formulated as

$$Y_{hi} = \sum_{s=1}^{4} \gamma_{0s} d_{shi} + \sum_{s=1}^{4} \gamma_{1s} d_{shi} x_{1si} + \gamma_{21} d_{11i} x_{21i} + \gamma_3 z_{1i} + \gamma_4 z_{2i} + \gamma_5 z_{3i} + \gamma_6 z_{4i} + \sum_{s=1}^{4} R_{si} d_{shi} \qquad (3.2)$$

where $Y$ represents the performance for school track $h$ and school location $i$, with $h = 1$ for VBO, 2 for MAVO, 3 for HAVO and 4 for VWO.

$Y$, therefore, may either refer to the mean student achievement scores of a particular school, or to the mean promotion rate in upper secondary school. In order to

be able to use the multivariate dependent variable in this model, an index $s$ was created in combination with a dummy variable $d_{shi}$,

$$d_{shi} = \begin{cases} 1 & h = s, \\ 0 & h \neq s. \end{cases} \tag{3.3}$$

which has the value of 1 if $s$ is equal to $h$ and which has the value of 0 if $s$ is not equal to $h$. The covariates are denoted by $x$, with $x_1$ referring to the percentage of ethnic minority students and $x_2$ referring to the percentage of IVBO students. The explanatory variables $z_1$ .. $z_4$ refer to the school culture variables. As such, both the four cultural dimensions and the cultural profiles of schools were used. For the analysis on the effect of cultural profiles, one cluster of schools was identified that had the highest or lowest score on the performance variable. Then the four remaining clusters were entered in the analysis. Based on the assumption that the effects of school culture variables are equal for each of the tracks, these are estimated jointly for the four tracks. Finally, the residual is denoted by $R$, which is estimated for each school track separately. The data were analyzed using *MlwiN* (Goldstein, Rasbash, Plewis, Draper, Browne, Yang, Woodhouse & Healy, 1998).

# Chapter 4

# Construction and Validation of the School Culture Inventory

## 4.1 Introduction

The development of a questionnaire for measuring school culture is a formative and iterative endeavor. During the construction phase, dimensions of school culture are identified, which are then operationalized into items. These dimensions and items are then examined for their relevance and compatibility, in practice, during the validation process, which may guide the reconstruction of the questionnaire. The two constituents of instrument development –construction and validation–can be seen as intertwined in a cyclical process, directed at adjusting and further refining the questionnaire.

During this process of development, the nature of the validation shifts from exploration to confirmation. During the early stages of development, the questionnaire is still subject to fundamental changes – it may even be discarded in favor of other measurement techniques. At later stages, the validation process is primarily aimed at refining the questionnaire, and testing the accuracy of decisions made at earlier stages. Due to this, the relative emphasis on the various types of validity changes during the development process. At the early stages, the primary focus is on the validity of the construct of school culture, the content validity of the questionnaire and its accuracy as measurement technique for the construct at hand. In later phases, the emphasis is less on content validity than on the construct and criterion-related validity of the questionnaire.

Reflecting this development process, several steps were taken to construct, adjust and further refine the instrument, each with a specific focus (Table 4.1). For the preliminary study a tentative version of the inventory was developed based on a review of other surveys for measuring organizational culture. During the preliminary study, reported in paragraph 4.3, the construct of school culture, on which the inventory was based, and the operationalization of school culture dimensions were tested in two qualitative studies of secondary schools. First, an in-depth study of one school was conducted aimed at identifying to what degree the operationalization of school culture was an accurate reflection of the values and norms present, and to explore if a questionnaire was suitable for describing these values and norms accurately. In the second study four schools participated and this was aimed at identifying whether the dimensions of school culture were able to discriminate between schools. Moreover, this study had to provide further information on the accuracy of the school culture construct and the feasibility of questionnaires in school culture research.

The second phase of the validation study consisted of a pilot-study of the inventory. Based on the preliminary findings of the first phase, the School Culture Inventory was revised (Form II). As described in paragraph 4.4, the inventory was redesigned in order to be able to distinguish between teachers' personal values and school values. In the pilot-study, reported in paragraph 4.5, this revised inventory was tested for its reliability and validity in five secondary schools. In this respect, major research questions were whether the dimensions of school culture were substantiated by empirical data on values in secondary education, and whether the dimensions of school culture were suitable to discriminate between schools. For this purpose, a principal component and a variance component analysis were conducted.

This version of the inventory was then examined for its reliability and validity in a confirmatory study, which formed the last phase in the validation process (paragraph 4.6). By means of a confirmatory factor analysis, and using a larger sample of schools, it was determined whether the dimensions from the explorative factor analysis were confirmed.

## 4.2 Construction of the School Culture Inventory (Form I)

Prior to constructing the *School Culture Inventory*, a search was conducted on quantitative assessments of culture, in order to identify whether inventories were developed that could be used in our study.

*Table 4.1 Outline of the validation process of the School Culture Inventory*

| Phase | | Main Research Questions | Validation Focus | Number of Schools (Number of Locations) | Inventory Form Used |
|---|---|---|---|---|---|
| Preliminary study | Stage I | 1. Is the operationalization of school culture (based on the competing values framework) an accurate reflection of the values in secondary education?<br>2. Is an inventory an adequate research method to identify values in school organizations? | Exploration of the construct and content validity of the school culture inventory; exploration of the instrumental validity | 1 (1) | Form I-A |
| | Stage II | 1. Is the operationalization of school culture (based on the competing values framework) an accurate reflection of the values in secondary education?<br>2. Is the operationalization of school culture suitable for discriminating between schools?<br>3. Is an inventory an adequate research method to identify values in school organizations? | Exploration of the construct validity (discriminant validity) and content validity of the school culture inventory; exploration of the instrument validity; exploration of the reliability of the school culture inventory | 4 * (6) | Form I-B |
| Pilot study | | 1. Are the dimensions of school culture substantiated by empirical data on values in secondary education?<br>2. Are the dimensions of school culture suitable for discriminating between schools? | Exploration of the construct validity (discriminant validity) and content validity of the school culture inventory; exploration of the reliability of the school culture inventory | 5 (12) | Form II |
| Confirmatory study | | 1. Is the classification of school culture by means of the dimensions and items confirmed in a larger sample of secondary schools? | Testing of the construct and content validity of the school culture inventory; determination of the reliability of the school culture inventory | 40 (68) | Form II |

* During the second stage of the preliminary study, four schools were studied, consisting of 6 locations. However, the questionnaire data are based on only two schools (see Chapter 3).

Instruments were reviewed that measured beliefs, values or norms in school organizations and selected on the basis of five criteria:

1. The instrument had to be aimed at measuring culture, i.e. the basic assumptions, values, norms or cultural artifacts shared by the members of a school. Questionnaires directed at measuring organizational climate, like Halpin and Croft's (1963) or Hoy and Clover's (1986) *Organizational Climate Description Questionnaire*, or instruments for measuring well being or commitment were excluded. Similarly, instruments directed at measuring cultural artifacts, like Steinhoff and Owens' (1989) *Organizational Cultural Assessment Inventory* or Grady, Fisher and Fraser's (1996) *Images of School through Metaphor* questionnaire, were not taken into consideration. An exception was made for Hoy and Feldman's (1987) *Organizational Health Inventory*, because of its reliance on the theoretical foundations of Parsons.
2. The instrument had to measure different aspects or dimensions of school culture. One dimensional culture instruments, like Cheng's (1993, 1996) *Organizational Ideology Questionnaire*, Shaw and Reyes' (1992) *Organizational Value Orientation Questionnaire*, and Smart and St John's (1996) instrument for assessing organizational culture in higher education, were therefore not included.
3. The instrument had to be directed at schools. More general instruments for measuring organizational culture listed in Broadfoot and Ashkanasy (1994), Maslowski (1996) and Rousseau (1990), were excluded, even when they, like Cooke and Lafferty's (1986) *Organizational Culture Inventory*, were used incidentally in school organizations as well (Cocchiola, 1990; Mooijman, 1994; Rzoska, 2000).
4. The instrument had to be directed at organizational processes in schools, and therefore had to be addressed to teachers and school management. Thus instruments primarily aimed at measuring culture in terms of normative expectations in classrooms or values teachers show in their relationship to students, like Maehr and Fyans' *School Culture Survey* (Fyans & Maehr, 1990; Maehr & Fyans, 1989) and Higgins' *School Culture Scale* (Higgins, 1995; Higgins-D'Alessandro & Sadh, 1997), were excluded.
5. The instrument had to be validated. Questionnaires which were not validated, like Handy and Aitkin's (1986) *Questionnaire on the Cultures of Organisations,* or for which these data were not available, like Jones's (1996) *School Culture Inventory* or Sashkin's *School Culture Assessment Questionnaire* (Sashkin, 1990a) and *School Culture District Assessment Questionnaire* (Sashkin, 1990b) were not taken into consideration.

According to the above criteria six questionnaires were identified: the *School Culture Survey* (Edwards, Green & Lyons, 1996; Saphier & King, 1985; Schweiker-Marra, 1995), the *School Work Culture Profile* (Snyder, 1988), the *Professional Culture Questionnaire for Primary Schools* (Staessens, 1990, 1991), a questionnaire for measuring organizational culture in

primary schools (Houtveen, Voogt, Van der Vegt & Van de Grift, 1996), the *School Values Inventory* (Pang, 1996) and the *School Cultural Elements Questionnaire* (Cavanagh & Dellar, 1996). These instruments are characterized in Table 4.2 by means of their scales, the level and format of the measures, and the instrument's reliability and validity. A more detailed description of these questionnaires, including the underlying conceptualization of school culture and item examples for each of the scales can be found in *Appendix III*.

An analysis of these instruments revealed that the *School Culture Survey* of Edwards, Green and Lyons (1996) and Staessens' (1991) *Professional Culture Questionnaire for Primary Schools* were not suited for our purpose. The *School Culture Survey* chiefly focused on perceptions of individual teachers instead of shared values and norms within the school. Where more general features are concerned, these were either directed at cultural manifestations in schools, like events and ceremonies, or concerned with issues that were generally difficult to relate to any of the dimensions of the Competing Values Framework. Staessens' questionnaire, on the other hand, mainly focused on process factors that enhance a professional culture in school, like the role of the principal and the existence of a professional network in school.

Snyder's (1988) *School Work Culture Profile* contained scales related to certain dimensions discerned in the Competing Values Framework. Each of these scales, however, only captures a small part of Quinn's human relations, internal process, and rational goal models. The same applies to the *School Values Inventory* (Pang, 1996), and the *School Cultural Elements Questionnaire* (Cavanagh & Dellar, 1996). Both questionnaires include several aspects of the four dimensions of the Competing Values Framework, but are rather limited in their operationalization of these dimensions.

The questionnaire for measuring organizational culture in primary schools of Houtveen and her colleagues (1996), on the other hand, was based on the Competing Values Framework. The questionnaire consisted of fifteen scales, containing 123 items reflecting primary school practices. Because of the specific nature of the items, many needed to be reformulated for a secondary education survey. Furthermore, because of the extensive number of scales and items, it was decided to develop a new inventory with a different composition of scales. Items of the questionnaires that were identified above, were used –where appropriate– for the scales of the preliminary version of the new inventory.

### *The School Culture Inventory* (Form I)

Form I of the *School Culture Inventory* was based on the main themes of the four models in the Competing Values Framework. The Human Relations model is represented by the

scales 'professionalization orientation' and 'participation orientation'; the Open Systems model by 'adaptation and innovation orientation' and 'external support and facilities orientation'; the Rational Goal model by 'productivity and accomplishment orientation' and 'ends-means orientation'; and the Internal Process model by 'stability and control orientation' and 'efficiency orientation'. Items for each of the scales were partly based on existing items of each of the aforementioned questionnaires. A number of new items were also formulated. The inventory consisted of eight scales with a total of 52 items:

1. *Professionalization orientation* (6 items). This scale reflects to what extent the qualities and capabilities of staff members are valued by other school members, and to what extent these qualities and capabilities are further developed by means of training. Item examples: "At our school novices as well as experienced teachers are expected to educate themselves further" and "At our school teachers constantly try to improve themselves".
2. *Participation orientation* (6 items). This scale reflects to what extent teachers participate in the decision-making process at school, and are responsible for their actions. Item examples: "At our school everyone is willing to take responsibility" and "At our school participation is considered important ".
3. *Adaptation and innovation orientation* (6 items). This scale reflects to what extent school members adapt themselves to change, and have an open attitude towards educational innovations. Item examples: "At our school we try to be aware of developments within society" and "At our school teachers have a positive attitude towards educational innovations".
4. *External support and facilities orientation* (7 items). This scale reflects to what extent school members are oriented towards achieving public support for the school. Item examples: "Teachers at our school are expected to be receptive to parents' criticism" and "At our school we think it is important to keep in touch with primary schools in the region".
5. *Productivity and accomplishment orientation* (6 items). This scale reflects to what extent school members are focussed on reaching the school's objectives. Item examples: "Our school is very achievement oriented" and "Teachers at our school are expected to take extra care over students who perform below their ability".
6. *Ends-means orientation* (6 items). This scale refers to the approach taken by school members towards reaching the school's goals. Item examples: "At our school we are used to determining which specific actions have to be taken to reach our goals" and "At our school we think it is important to evaluate and, if necessary, regularly adjust our school policy".

7. *Stability and control orientation* (8 items). This scale reflects to what extent school processes are formalized in rules and procedures. Item examples: "At our school risks are excluded as far as possible" and "At our school every teacher is expected to conform to the school rules".
8. *Efficiency orientation* (7 items). This scale reflects to what extent school members focus on the efficiency of their own functioning and the functioning of their school as a whole. Item examples: "At our school we develop time-saving procedures" and "At our school we try to arrange meetings in a way that they do not take up more time than is strictly necessary".

School members were asked to indicate the extent to which each statement characterized their school according to a five-point Likert scale, ranging from "strongly disagree" to "strongly agree".

## 4.3 Preliminary study

The preliminary study was performed to examine the relevance of the framework chosen for research into organizational culture in secondary schools, and to explore the feasibility of a questionnaire for school culture research. First, the study had to explore the manifestation of culture in secondary schools, identify whether the chosen framework contains relevant issues for diagnosing school culture, and whether it constitutes a considerable part of each school's culture. Finally, the preliminary study had to identify whether the methodology chosen, i.e. a questionnaire to diagnose school culture, was valid compared to other methodologies.

To address these various aspects, it was decided to perform two separate studies. The first consisted of an in-depth study of one school aimed at identifying what makes up a culture of a school. Is there such a thing as culture, or is it a hypothetical construct that has no meaning for secondary schools? It further had to identify whether our view of culture, consisting of the competing values model, holds some relevance for schools. For this purpose, various school members were interviewed and teachers' lessons observed. To address the question of the feasibility of questionnaires, Form I of the *School Culture Inventory* was distributed among all teachers and school administrators. The questionnaire was analyzed after a description of the school profile had been given, based on the qualitative research techniques. Subsequently, the results of the qualitative analyses were compared to those of the questionnaire.

*Table 4.2 School culture questionnaires*

| Instruments (Authors) | Scales | No. of items | Level of analysis | Format | Reliability | Construct validity | Criterion-related validity | Settings (*n* = number of respondents/ number of schools) |
|---|---|---|---|---|---|---|---|---|
| School Culture Survey (Saphier & King, 1985/ Edwards, Green & Lyons, 1996) | Teacher Professionalism and Goal Setting<br>Professional Treatment by Administration<br>Teacher Collaboration | 24 | Individ-ual and school level | Likert-scales: 1 (almost never) to 5 (almost always) | Cronbach's alpha (ranging from .81 to .91) | Intercorrel-ations between factors/ correlations with individual characteristics | scales have low correlations with teacher efficacy and empowerment | Primary schools USA (*n* = 425/not reported) |
| School Work Culture Profile (Snyder, 1988) | Schoolwide planning<br>Professional Development<br>Program Development<br>School Assessment | 60 | School level | Likert-scales: 1 (strongly disagree) through 3 (undecided) to 5 (strongly agree) | Cronbach's alpha (ranging from .95 to .97) / test-retest (two week interval) (.78) | Not reported | Not reported | Primary schools USA (Florida) (*n* = 416/100) |
| Professional Culture Questionnaire for Primary Schools (Staessens, 1991) | Principal as builder and carrier of the culture<br>Degree of goal consensus<br>Professional Relationships among teachers<br>Lack of an internal network of professional support | 28 | School level | Likert-scales: 1 (doesn't fit at all) to 6 (fits to a large degree) | Cronbach's alpha (ranging from .89 to .95) | Intercorrel-ations between factors/ comparisons of intra-school and inter-school variances/ confirmation conceptual structure | 1st and 4th scale are significantly correlated with school leader's style of supervision | Primary schools Belgium (Flanders) (*n* = 1202/90) |

*Table 4.2 School culture questionnaires (continued)*

| Instruments (Authors) | Scales | No. of items | Level of analysis | Format | Reliability | Construct validity | Criterion-related validity | Settings (*n* = number of respondents/ number of schools) |
|---|---|---|---|---|---|---|---|---|
| Organizational Culture in Primary Schools (Houtveen, Voogt, Van der Vegt & Van de Grift, 1996) | Unanimousness of school team<br>Responsibility for instructional processes<br>Appreciation of quality and capacities<br>Emphasis on teacher development<br>Flexibility<br>Emphasis on school growth<br>Emphasis on public relations<br>Ability to innovate<br>Formality of sharing information<br>Communication on educational matters<br>Stability<br>Emphasis on achievement<br>Emphasis on reaching school objectives<br>Efficiency<br>Trust in own effectiveness | 123 | School level | Likert-scales: 1 (completely false) to 6 (completely true) | Cronbach's alpha (ranging from .70 to .89) / test-retest (four week interval) (.89 to 1.00) | Correlations between school management scores and teacher scores/ comparisons of intra-school and inter-school variances/ confirmation conceptual structure | Scales differentiate between schools | Primary schools The Netherlands (*n* = 882/465) |
| School Values Inventory (Pang, 1996) | Formality and control<br>Bureaucratic rationality<br>Achievement orientation<br>Participation and collaboration<br>Collegiality | 38 | School level | Likert scales: 1 to 7 | Cronbach's alpha (ranging from .77 to .88) | | | Secondary schools Hong Kong (*n* = 101/14) |

*Table 4.2 School culture questionnaires (continued)*

| Instruments (Authors) | Scales | No. of items | Level of analysis | Format | Reliability | Construct validity | Criterion-related validity | Settings (*n* = number of respondents/ number of schools) |
|---|---|---|---|---|---|---|---|---|
| School Cultural Elements Questionnaire (Cavanagh & Dellar, 1996) | Teacher Efficacy<br>Emphasis on Learning<br>Collegiality<br>Collaboration<br>Shared Planning<br>Transformational Leadership | 42 | Individ-ual and school level | Likert-scales: 1 (strongly agree) to 5 (strongly disagree) | Cronbach's alpha (ranging from .70 to .81) | Intercorrel-ations between factors | Not reported | Schools Australia (*n* = 422/not reported) |

The second study was carried out in four schools, selected according to their denomination and school size in order to study schools that were likely to have different cultures. This study aimed to explore the same questions as the first study, but on a less detailed level. For this reason, for the four case studies of the second phase no observations were used and only the principal of the school was interviewed. Because four schools were taken into account, however, it was possible to identify whether differences between schools existed in their cultures, and to what degree this was reflected in the questionnaire scores. Unfortunately this latter aspect could only be investigated in two schools, for one school decided not to distribute the questionnaire and in another the response was too low to make such a comparison meaningful.

### *4.3.1 Preliminary Study Phase I*

The results of the qualitative analysis are presented below in a profile of the school. This profile consists of background information on the context of the school, and a description of the main features of the culture, as they emerged from interviews, document analyses and observations. Based on these data, paragraph 4.3.1.2 answers the question whether there appears to be evidence that cultural elements can be found in these schools, and whether the competing values model offers possibilities to accurately and proficiently classify these cultural elements. Furthermore, the questionnaire data are examined in relation to the qualitative data, in order to answer the question whether a questionnaire appears to encompass a school culture –as emerged from the qualitative analyses– sufficiently.

#### *4.3.1.1 Results from the qualitative analysis*

#### THE OULDERLAKE HIGH SCHOOL

The relatively young *Oulderlake High School*[1] is a Protestant comprehensive school for MAVO, HAVO and VWO streams, and is located in the suburbs of central Netherlands. The idea for a school dates back to 1969, when a new area was developed outside the local old town. As a consequence, the area rapidly expanded within a few years, and due to this demographic development, the founding of a Protestant comprehensive school became a feasible option. On 1 August 1975, the Christian School for Upper Secondary General Education opened with three first grade classes at HAVO level. Since 1978 the school has had an Athenaeum department and two years later the school was renamed *Oulderlake High School*, referring to the former lake in the neighborhood of the school. In

1991, the school merged with a lower general secondary school (MAVO), with whom it had been cooperating for some years.

The school has 87 staff, of which 75 are teachers or members of the school management team. The number of students has steadily grown over the last few years to more than 1150. By national standards the school is medium sized, but it is one of the largest in the region, largely due to it having more than two tracks unlike most schools in the region. This is considered to be an advantage since students can switch tracks without having to change to another school. This appears to appeal to MAVO and HAVO students because they have the possibility of upward mobility rather than students at the upper VWO level. At school the number of students in the VWO track appears to be below the target figures, whereas the number of MAVO and HAVO students are above the target figures for most school years. The perception of the school members is that a number of parents associate the size of the school, and the inclusion of lower streams, with the idea of lesser quality of the VWO track. Another advantage of other schools, that incorporate a VWO track, is that it offers education on both the Athenaeum and Gymnasium level. Until recently, the *Oulderlake High School* was only entitled to educate Athenaeum students. From the start of the school year 1996-1997 the school is also entitled to offer Gymnasium education, and it hopes to attract more VWO-students this way.

The school comprises the school board, school administration, teachers and support staff. The school board of the *Oulderlake High School* is operationalizing and controlling the framework for school policy. The school board functions at a distance from the school. The identity of the school is one of the main aspects of the tasks the school board is fulfilling. The school is run by the school principal and four department heads. The department heads are mainly involved in administrative tasks and specific tasks within the management team, although they do a small amount of teaching as well.

As a Protestant school, *Oulderlake's* mission is to "make students aware of their vocation to serve God and to love one's neighbor, and to feel responsible for society and Creation". Its responsibility is "to develop students and give them the necessary knowledge and skills so that they are capable and willing to give form to serving society and Creation". Its Protestant denomination is evident during morning prayers at school when students are asked to think about certain choices they have to make, or about their relationship to others. Then there are the various special religious services and a minister is regularly invited to make teachers think about the way in which they deal with their religious belief and the way in which this reveals itself in their teaching.

Although a number of activities emphasize the school's Protestant identity, is the school not marked very strongly by this. While teachers and students are expected to support the school's Protestant principles, no strong norms exist with respect to how far

teachers and students are to endorse these actively. Some teachers, for example, give considerable follow-ups to the Morning Prayer, while others just read the Morning Prayer, and then start their lesson.

This does not imply, however, that the school's identity does not play a major role. Most school members associate it with less visible aspects, like respect for others, a helping attitude, solidarity and a sense of responsibility. As one of the interviewees noted, these characteristics are associated with the Christian belief for those working at school, although they may be more general in nature:

> "[In our school] issues like solidarity and sense of responsibility are important. Personally, I think it's risky to designate these values as being 'Protestant'. Other schools, public as well as Catholic schools, will probably propagate more or less the same values. But still, to us our deep concern for solidarity and responsibility is closely related to our religious beliefs. To us it's a meaningful realization of our Christian values. Once again, without claiming the exclusive right on these values.
> Although our central values are not unique for our school or for Protestant schools in general, I do think that differences between schools exist. Taking my own experiences into account, I know that Protestant schools often have 'a similar feel', that differs from Catholic schools. It's not as much a matter of emphasizing totally different values, but rather what lies behind those values. In my view, this has to do with the people's mentality or, putting it differently, with the tradition in which they were raised. The teachers who work here –generally speaking– have a background that is different from the teachers' background in a Catholic school"

Next to the humanitarian values, the school emphasizes its orderly climate. Within the school clear rules exist, which are legitimized by the principle of equality. Nearly all teachers interviewed associate the school's 'strictness' and 'solidity' with its denomination.

> "However, a certain strictness and solidity, that is often associated with Protestant schools, can certainly be found in this school"

This 'strictness' and 'solidity' also has some drawbacks. It sometimes results in stuffiness and primness. As one teacher argued: "What's lacking in this school is some kind of spontaneity. There are hardly any opportunities for students and teachers, to go on a spree ... Everything at this school, it seems, is carefully directed". Teachers complained about the uniformity emanating from this carefully maintained orderliness and harmony.

On the other hand, to most school members the school's identity represents the value of respect for other people.

> "At our school no detached relationship between the management and the teachers exists. Teachers who want to step into the principal's office to tell him what's on their minds experience hardly any barriers. The same goes for the relationships between teachers. Characteristic for our school is a friendly atmosphere; the contacts between teachers are very warm-hearted"

Another teacher noted:

> "In a class with a brooding atmosphere –because students were bullying each other– I decided to raise this issue. Students had to write down the ten most important characteristics of an ideal student. As I expected, everyone came up with several cognitive themes, like 'intelligence', 'paying attention to the teacher' and the like. Although these characteristics were generally considered to be the most important features of the ideal student, nearly all students also mentioned a number of social characteristics, like 'a friendly attitude' and 'helping other students'. In our subsequent discussion, I told them that these latter characteristics are more important to me than 'ability' or 'intelligence' – that students cling together and offer a helping hand to others"

At the *Oulderlake High School* much attention is paid to the student guidance system. The underlying assumption of student guidance is that a student's well being is a necessary precondition for learning. Students who feel at ease will not show deviant behavior towards other students. This will prevent problems from arising, as the vice-principal of the school argued:

> "On the one hand teachers are able to teach well for they aren't forced to spend a major part of their time on keeping order in the classroom. They are able to direct their attention fully to their real task – presenting and transmitting knowledge to students. On the other hand, students are likely to show a better performance as well, because they won't be distracted from their work, and therefore, will be able to concentrate on the subject at hand. This means that student guidance pays itself back – either by preventing problems to occur or in a more curative sense by ensuring that problems do not get out of hand, or even by solving these problems at an early stage. In our view, therefore, a well organized student guidance system is absolutely necessary, especially when one takes into account the problems schools are confronted with these days"

The school principal seconded this view. He acknowledged that the guidance system primarily focuses on lower achieving students. "To a large extent, teachers feel compassion for the weaker students, and are willing to help them as much as they can." He further argued that "judging by the relatively high success rates at our school, one might argue that we succeed in providing these students with the little extra's they need to pass the finishing line."

Student guidance at *Oulderlake* is organized around the idea that as many students as possible will pass their final examinations. This was defined by many of the interviewees as the 'achievement orientation' or 'results orientation' of the school. As one teacher noted:

> "Our school is results oriented. Our aim is to have students who leave this school with a diploma. That should be the primary objective of every school, for parents expect that as they send their children to school"

One teacher noted that this objective was well on target with "about 98% of MAVO-students passing their final examinations". In addition to this, teachers a put considerable effort into developing their students' personalities. "I try to make sure that all children feel at home in class. If a student is bullied, I immediately take action." Three teachers interviewed stressed the fact that an emphasis on achievement should not result in an unhealthy climate for students. Students need to feel "at home" in school.

> "We accentuate that students have to learn, but we take care that this never results in a competitive atmosphere, as this might easily lead to a situation in which students are reluctant to come to class. The purpose of schooling is learning, but this will only take place if students are motivated to learn"

#### *4.3.1.2 Discussion and implications*

In this section we turn to the research questions mentioned in the introduction to this section. The first question concerned the construct validity of the eight dimensions of the *School Culture Inventory*. To answer this, the values and norms that revealed from the qualitative analysis were examined for their fit with each of the dimensions. One of the most striking features of *Oulderlake* is its emphasis on human relations. This is concerned with values like 'respect', 'solidarity', 'a helping attitude', 'warm-hearted' and 'tolerance' Furthermore, the school wishes to offer 'a safe environment' and 'a healthy climate' for students and teachers. These values and norms partly reflect values and norms of the professionalization orientation. However, a related dimension, concerned with commitment and support, would better reflect these humanitarian values. Furthermore, information on the other scale of the human relations model, the participation orientation, hardly emerged in the study. During his interview, the principal indicated this issue briefly, when he stated that "large differences exist among teachers with regard to their expectations: some teachers complain that they are not allowed to have a say in the process of decision-making, other teachers express that they feel no need to be involved

in decisions which are not directly related to their work in the classroom". Teachers, however, never mentioned this issue during the interviews.

Characteristic for the school is a certain rule orientation, exemplified in the 'strictness', 'orderliness' and 'solidity' of the school. These values clearly represent an emphasis on the stability and control orientation. 'Control', although not mentioned in these terms, is a central theme in many aspects mentioned by the interviewees. It is exemplified by the many school rules in order to promote an environment in which all students feel safe. It further reveals itself in the elaborate guidance system aimed at preventing disturbances which are difficult to deal with. Underlying the student guidance system, it seems, is some necessity for predictability. Efficiency oriented aspects were not mentioned in the interviews or in the documents analyzed.

The productivity and accomplishment orientation was clearly represented by what was denoted as the school's results and achievement orientation. Information on a clear rational way of proceeding towards these goals, however, was not found at *Oulderlake*. Furthermore, the results hardly revealed any indications of an adaptation and innovation orientation, or an external support and facilities orientation by the school. Only indirectly, through the valued 'harmony with the environment' mentioned by one of the teachers, and the building of a gymnasium to attract students, did the school show signs of external support and an open attitude towards the school environment.

In summary, representative values were found for a number of scales, but for others none or hardly any were observed in school. As this may actually be related to the specific profile of the *Oulderlake High School* –and therefore not representative for other schools–, no improvement suggestions were derived from this finding. Furthermore, no organizational values were found that could not be related to any of the dimensions. The classification, therefore, seems to be encompassing. It should be noted, however, that the qualitative analysis was by no means comprehensive, relying on a limited number of observations and interviews during a short period of time. A more extensive, ethnographic study into the elusiveness of a school's culture is likely to reveal a larger number of values and norms on a more detailed level. This might reveal values and norms, which are not covered by the dimensions of the competing values framework. Furthermore, the congruence between the values of *Oulderlake* and the eight culture dimensions is threatened by the fact that both the qualitative and quantitative analyses relied on the same implicit conceptualization of culture. Especially for the qualitative analysis, this is a serious problem because elusive elements of the school's culture that were not related to the Competing Values framework may have gone unnoticed.

To address the second research question on the operationalization of the dimensions, the values that emerged from the qualitative analysis were identified. As noted

before, human relations in the school emphasized 'respect towards others', 'a helping attitude', and 'loyalty'. These themes, aside from loyalty, are represented in the items of the inventory. For the stability and control orientation, values like 'strictness', 'solidity' and 'traditional' were mentioned. These were only incorporated into the questionnaire items in an indirect way.

Furthermore, the reliability of the items within the eight dimensions was analyzed. In general, the reliability was low (see Table 4.3).

*Table 4.3 Reliability of the scales of the School Culture Inventory (Form Ia) (n = 52)*

| Scale | Number of items | Reliability (Cronbach's α) |
|---|---|---|
| Professionalization orientation | 6 | 0.52 |
| Participation orientation | 6 | 0.24 |
| Adaptation and innovation orientation | 6 | 0.59 |
| External support and facilities orientation | 7 | 0.63 |
| Productivity and accomplishment orientation | 6 | 0.30 |
| Means-ends orientation | 6 | 0.67 |
| Stability and control orientation | 8 | 0.33 |
| Efficiency orientation | 7 | 0.68 |

Especially for the scales 'Participation orientation', 'Productivity and accomplishment orientation' and 'Stability and control orientation' Cronbach's alpha was extremely low. An analysis of the wording of the items revealed that for the scales 'Productivity and accomplishment orientation' and 'Stability and control orientation', this wording was rather ambiguous. This was to a large extent due to the fact that many of these items were taken or derived from other questionnaires. It was concluded that the wording of the items needed further attention. Furthermore, based on the item-rest correlation ($r_{ir}$), items were deleted which were not referring to any of the values from the qualitative analysis, and which were not worded differently than the other items within the scale.

Finally, the feasibility of a questionnaire for measuring school culture was explored by comparing the results of the questionnaire and the results from the qualitative analyses. For the questionnaire data, it was identified which items attained the highest values among respondents since these are expected to reflect the most salient values at *Oulderlake*. Table 4.4 presents the items with the highest ratings. This analysis shows that the item that reflects best the humanitarian values in school, 'respect', received the highest rating of the respondents. This is in accordance with the findings from the qualitative analyses. Furthermore, other values regarding the professional dimension of

the school, focusing on teachers' responsibility for their professional development, were also rated highly by school members. This aspect, however, was not found in the qualitative analyses. The same applies to the importance of keeping in touch with primary schools in the region. On the other hand, the meaning of clear procedures and high student scores on the final examinations, again reflect some of the basic findings from the qualitative study.

*Table 4.4 Items with the highest values in the Oulderlake High School*

| Items | | Mean |
|---|---|---|
| 2. | At our school we respect each other (*Professionalization orientation*) | 4.62 |
| 20. | At our school we think it is important to keep in touch with primary schools in the region (*External support and facilities orientation*) | 4.35 |
| 40. | At our school clear procedures are thought of as very important (*Stability and control orientation*) | 4.34 |
| 57. | At our school a large number of students passing the final exams are highly valued by teachers (*Productivity and accomplishment orientation*) | 4.26 |
| 34. | At our school new teachers as well as experienced teachers are expected to educate themselves further (*Professionalization orientation*) | 4.22 |
| 12. | At our school taking refresher courses and in-service training are considered to be important (*Professionalization orientation*) | 4.14 |

Interestingly, the items concerning the 'External support and facilities orientation' and the 'Productivity and accomplishment orientation' are relatively more valued than the other items in these scales. This may show that these items reflect a certain school practice which to some degree is situation dependent, meaning that these practices are not clearly rooted in the values represented. In the case of the percentage of students who pass their exams successfully, a possible explanation can be found in the interview data that indicates situation dependency. Nearly all teachers state that large numbers of students graduating is highly valued. It seems, however, that this is infused by the pursuit of equality, instead of a concise stimulation of high achievement for all students. On the contrary, a narrow focus on achievement is abandoned since it may conflict with the school's humanitarian values.

Based on these findings, Form I of the *School Culture Inventory* was adapted. The Professionalization orientation scale was split into two aspects: professional development (Professionalization orientation) and loyalty and support among school members (commitment and support orientation). The participation orientation scale was removed from the inventory. The wording of a number of items was also changed, and some items

replaced by others. For some of the scales, additional items were formulated. The revised questionnaire (Form Ib) is reprinted in *Appendix IV*.

### *4.3.2 Preliminary Study Phase II*

The second preliminary study was carried out at four schools and further explored the research questions considered in the first phase. It was also aimed at identifying whether differences between schools existed in their cultures, and to what degree these differences were reflected in the questionnaire scores. Each of the schools is characterized briefly in paragraph 4.3.2.1, on the basis of the interviews and document analyses. In paragraph 4.3.2.2, these findings are discussed in relation to the research questions.

#### *4.3.2.1 Results of the qualitative analyses*

#### THE MERTHYBURGH CS

The *Merthyburgh* is a public comprehensive school for VBO, MAVO, HAVO and VWO education in the eastern part of the Netherlands. It is a relatively large school, which has grown substantially in the recent past due to various mergers. In 1991, the school, which was rather small at that time, merged with a small school for junior vocational education in the same town. Three years later it merged with the *Thomas Ainsworth High School* in a town that is located five miles outside the site of the main school building. Due to these mergers the school holds a strong position in the region, which is still rural to a large extent. The school has sites in two local towns in order to be able to educate students close to home.

*Merthyburgh* has 164 staff, of which 127 teach and 8 are members of the school management team. The number of students at the school has been steadily grown over the last few years to more than 1800 students. The school presents itself as "one that gives attention to students' needs", i.e. directs students to a stream best suited to them. To achieve this the school established so-called "tile" classes[2] in the first and second grade. Through these classes some form of differentiation is achieved, although students have not been directed towards one of the streams, therefore maintaining the relatively simple transfer to a higher or lower stream. To be able to coordinate this efficiently and to address the objective of student-tailored differentiation the school developed an elaborate system enabling teachers to keep track of the social well being and the performance of all students. Besides a central student information system, each student has a guidance and an achievement record.

This is characteristic of *Merthyburgh* where procedures are highly formalized in order to be able to manage the school. At school not only are students monitored by teachers and student advisers, but the same applies to the teachers. A system of personnel management was developed, directed at the professional development of teachers. For this purpose, teachers use a system of intervision. These activities are directed at improving the quality of education at school, and promoting student achievement. The school also regularly invites parents to talk to them on their children's progress.

To sum up, the school can be characterized as one in which many procedures are formalized, where actions are directed towards the smooth and efficient course of the educational process, where professional development is highly valued, and where parents are given serious attention. These actions seem to be aimed at monitoring students, improving the quality of education and enhancing student achievement.

## ST IGNATIUS HIGH SCHOOL

*St Ignatius High School* is a Catholic comprehensive school for lower and higher general education (MAVO and HAVO) and pre-university education (VWO) located in western Netherlands. *St Ignatius* has 86 staff of which 67 teach. It is a school with a rich tradition, which can be traced back to 1831 when a Catholic priest founded the *St Willibrord Gymnasium* in a small village near the sea. At that time it was the only pre-university school for Catholic boys outside of the 'Catholic' south of the Netherlands. The school rapidly grew in the years following its foundation. Due to this growth, the school encountered serious difficulties in taking on secular priests to meet the increase of students. For that reason, the school was taken over by the Jesuits five years after its founding.

At the end of the 19th century, other Jesuit colleges were founded in large cities in the northern part of the Netherlands. As a response to this, the Jesuits considered moving the school to a larger city, which would secure the input of large numbers of students. In 1917, the school moved to the neighboring city, and its name was changed to the *St Ignatius High School*. In those days the school was a *HBS/Gymnasium* for boys and they were only taught by Jesuits. The rapid changes in society during the 1960s lead to a drastic change at the school when, in 1968, the first 'lay' principal was appointed. The school was promoted increasingly for Catholics. In the early seventies, the school began taking for girls. Around the same time, an intensive collaboration started with the *Cordi Sacratissimo MAVO*, which resulted in a merger between the two schools in 1973.

The following expectations of teachers –or as the principal put it, the 'Ten Commandments' – were formulated during one of the school's yearly "reflection days":

1. The behavior of teachers at the *St Ignatius High School* is characterized by respect for all people involved in the school;
2. The relationship with colleagues is characterized by the pursuit of mutual trust and collaboration;
3. Each teacher is expected to contribute to the creation of a positive atmosphere, which is characterized by sincerity;
4. The relationship with students is characterized by sustained care and the sense that upbringing is more than just education;
5. Good quality teaching. This includes a readiness for teachers to examine their own work, including their contribution to the subject department and the school team, in a critical manner, as well as the willingness to take subject specific or didactic refresher courses;
6. Caring for students manifests itself in the permanent readiness of teachers to discuss the progress, shortcomings and students' approach of their study with students and parents;
7. Teachers are expected to contribute to activities that take place within the scope of the identity of the school and extracurricular education;
8. *Teachers are expected to be willing to think along with, and take part in, changes within the school system.*

Strikingly, nearly all expectations focus on the interpersonal relationship between teachers and students, emphasizing trust, respect, collaboration and an open and friendly atmosphere.

At the same time, the school offers, in its own words, a 'broad education', which can be traced back to the school's history. More specifically, this approach is one of the vestiges of the Jesuit's involvement in the school. The Jesuit's aim was to "educate the students to become true believers". They were convinced that this was most likely to occur when deviant influences would be minimized. For this reason, the school tried to influence students' free time, offering various subjects in an educational program, but also with the emphatic intention of having a say in the upbringing of the children in their charge. The underlying assumption of the Jesuits was that they were "better suited to raise these children than their parents possibly could". While the original intention behind these extra learning programmes no longer fits modern societal values, the extracurricular activities still exist in the school. Moreover, these activities have become part of the school's identity.

To sum up, the school has an historical leaning towards control, which is reflected in values concerning preparing students to have successful careers, and in the rules and

regulations established by the Jesuits. From this traditional basis, there are activities that are directed at the academic and non-academic development of students, which are commonly found in progressive student-oriented schools. Similarly, the school has formulated a number of principles based on interpersonal relations that are seemingly in conflict with its more traditional stance. Therefore, the culture of the school can at best be characterized as paradoxical, or in transition.

## SRI AUROBINDO HIGH SCHOOL

*Sri Aurobindo High School* is a Catholic comprehensive school for junior vocational education (VBO), lower and higher general education (MAVO and HAVO) and pre-university education (VWO) in the western Netherlands. The school started in 1929 as the *Bonifacius ULO*, a precursor of the later *Bonifacius MAVO*. In the early 1970s, a HAVO department was added and the school given its present name. It is a relatively large school with two sites, each in a different town. The school has 196 staff, of which 135 as a teacher, and over 1,700 students.

The school uses the words 'progressive', 'personal', 'creative' and 'solid' to communicate its core values to students, parents and new teachers. In 1996, the terms 'inspiring' and 'united' replaced the terms 'progressive' and 'solid'. The principal of the school notes, looking back on the discussion within the school:

> "We tried to work out for ourselves what these four keywords essentially meant for us. During that exercise we found out that 'progressive' evoked rather different associations. It expresses that we are far from a traditional school, but with respect to content it bears hardly any leads. It does not specify on which aspects our school differs from traditional schools. At the same time 'solid' became subject to discussion. 'Solid' was, so to speak, the antipode of 'progressive' in the four keywords. It was included to direct the parents' attention to the fact that the teaching at the *Sri Aurobindo High School* is of high quality, in which basic knowledge and skills receive considerable attention. 'Progressive' and 'solid' were in fact an ambiguous pair of words, which gave rise to many misunderstandings."

Since that adjustment, the tandem 'personal' and 'united' plays a key role in presenting the school. On the one hand, the school emphasizes that each human being is unique, and that this uniqueness forms the starting point for the teaching. On the other, the school emphasizes that people live together, that they belong to a community, and that respect for others is considered central to life at school. In between these two keywords, 'creative' and 'inspiring' are placed, or as the principal denoted, "the keywords 'creative' and 'inspiring' are embraced by 'personal' and 'united'".

Teachers are strongly committed to the school and its philosophy and are strongly 'student oriented'. The school is known for its comprehensive guidance system. Numerous extracurricular activities are offered to students and creating a safe and inspiring climate for students is one of the school's core objectives. The school climate, as the principal puts it, is "directed at the personal development of individual students". Several internal workgroups work on improving the teaching process as well as organizational matters like internal communications. External innovations sometimes conflict with these internal changes, and are, therefore, sometimes received with skepticism.

To sum up, the *Sri Aurobindo* can be characterized by progressive values, in which the personal interests of teachers and students are highly valued. Its most characteristic cultural feature is the emphasis on interpersonal relations and the responsibility of each individual. This not only applies to relationships between teachers, but to those between teachers and students as well. The school is also innovation oriented. It should be noted, however, that this is chiefly an internal affair. Improvements are suggested by internal workgroups.

## CHRISTIAN GYMNASIUM

The *Chistian Gymnasium* is a Protestant high school for pre-university education (VWO), located in the north of the Netherlands. At the *Chistian Gymnasium* there are 40 staff, of which 35 are teachers. The school was founded in 1921 as a Gymnasium for Dutch Reformed students. In 1968 the school merged with a Protestant one and was given its present name. The merger of the school boards did not affect the status of the school. It remained its autonomy, even after a merger of the Gymnasium's 'twin school' with a number of other Protestant schools in 1990.

The school has 430 students and more than half the students come from towns outside the city in which it is located. The school can be characterized as a closed community. Teachers know each of the students by name. In some families, it is a tradition to send their children to the *Christian Gymnasium*. A large number of students, therefore, have a brother or sister at school, or have parents that attended the *Christian Gymnasium*. As a result, most of the parents are strongly committed to the school. It has a benefit fund which parents voluntary support. This is used to keep school facilities up to date.

The school is highly achievement oriented. Although the school advertises with the slogan "You don't need to be Einstein to study at our school", students are warned that the pace is high. While the school has a student guidance system, this is mainly

oriented towards teaching students meta-cognitive strategies so they are able to structure their own learning process, and do their homework more effectively. The adage of many of its teachers, including the principal's, is "If students do not have the ability and perseverance to be successful, they probably are better off at another school". The principal further argued, "a number of teachers hold the view that students who lack the ability to pass their exams will probably not benefit from guidance, and students who aren't willing to put in great efforts to pass their exams do not deserve any guidance".

Teachers hold relatively autonomous positions since most subjects are taught by only one or two teachers. As a consequence, innovation at the *Christian Gymnasium* is highly dependent on individual teachers. A number of (for the most part recently appointed) teachers are positive on the educational changes planned because of the emphasis on students' self-motivation and responsibility, whereas others are more critical and see the school's academic emphasis becoming eroded.

To sum up, the *Christian Gymnasium* is a strict, traditional school. Students are expected to adapt to the school. Its most characteristic feature is the emphasis on achievement. Each student is expected to put in great effort. Due to the autonomous position teachers hold in school, there is little room for collaboration. As such, the school shows an interesting paradox. With regard to students, the school exerts a great deal of social control, whereas the teachers themselves are responsible for their own subject, and are eager not to affect the academic discretion of other teachers.

#### *4.3.2.2 Discussion and implications*

The second phase of the preliminary studies focused on the research questions whether the eight dimensions of culture were able to discriminate between schools, and whether the *School Culture Inventory* was able to detect these differences. In order to answer the first question, the characteristic features of each of the schools, as they emerged from the qualitative analysis, were compared to each other. In our description of the schools, we concentrated on some of their most characteristic features.

The description of *Merthyburgh Comprehensive School* revealed a close relationship with parents, while the monitoring of students was also emphasized. To achieve these objectives, parents were regularly informed about their child's progress. Furthermore, an elaborate student guidance system was used to keep track of each student, and a number of activities were aimed at teachers' professional development. This indicates that the school strongly emphasizes values from various culture dimensions. Obvious dimensions in this respect are the 'professionalization orientation', the 'external support and facilities orientation', the 'productivity and accomplishment orientation' and the 'stability and control orientation'.

Our review of *St Ignatius High School* indicated that this school intends to focus more on teachers' professional development, on collaboration among teachers and on mutual trust, a healthy atmosphere, and a reflective attitude among teachers. In practice, however, the school is characterized by a relatively large autonomy of teachers. Extracurricular activities are highly influenced by the school's history. Therefore, a strong focus on the 'stability and control orientation' is present in this school. As noticed, the 'mission' expresses values that belong to the 'professionalization orientation' and the 'commitment and support orientation'.

*Table 4.5 Analysis of Variance Between and Within Schools in the Preliminary Study (Phase II)**

| Scale | | Sum of Squares | d.f. | Mean Square | F | Significance |
|---|---|---|---|---|---|---|
| Professionalization orientation | Between groups | 1.17 | 2 | .59 | 1.67 | .20 |
| | Within groups | 28.81 | 82 | .35 | | |
| | Total | 29.98 | 84 | | | |
| Commitment and support orientation | Between groups | 2.78 | 2 | 1.39 | 2.83 | .07 |
| | Within groups | 40.28 | 82 | .49 | | |
| | Total | 43.06 | 84 | | | |
| Adaptation and innovation orientation | Between groups | 5.65 | 2 | 2.82 | 11.25 | .00 |
| | Within groups | 20.58 | 82 | .25 | | |
| | Total | 26.23 | 84 | | | |
| External support and facilities orientation | Between groups | 5.57 | 2 | 2.79 | 10.81 | .00 |
| | Within groups | 21.14 | 82 | .26 | | |
| | Total | 26.71 | 84 | | | |
| Productivity and accomplishment orientation | Between groups | .30 | 2 | .15 | .52 | .60 |
| | Within groups | 23.84 | 82 | .29 | | |
| | Total | 24.14 | 84 | | | |
| Means-ends orientation | Between groups | 3.84 | 2 | 1.92 | 6.06 | .00 |
| | Within groups | 25.95 | 82 | .32 | | |
| | Total | 29.78 | 84 | | | |
| Stability and control orientation | Between groups | 3.40 | 2 | 1.70 | 6.71 | .00 |
| | Within groups | 20.77 | 82 | .25 | | |
| | Total | 24.17 | 84 | | | |
| Efficiency orientation | Between groups | 3.72 | 2 | 1.86 | 4.88 | .01 |
| | Within groups | 31.24 | 82 | .38 | | |
| | Total | 34.95 | 84 | | | |

* This ANOVA was based on teachers from three schools (including the school with only 11% respondents) ($n = 86$)

*Sri Aurobindo High School* was characterized as a school that promotes itself as being progressive and having a community atmosphere, with a high emphasis on interpersonal

relationships in school for both teachers and students. Numerous initiatives were taken to improve educational and organizational aspects of the school. The school can therefore be characterized by an orientation towards 'support and commitment' and 'innovation'.

The description of the Christian Gymnasium revealed a strict, traditional school with students expected to adapt. Due to the autonomous position teachers held in school, there was little room for collaboration. Whereas the school exerted a great deal of social control towards students, teachers gave each other academic discretion. To conclude, these four summaries show there is sufficient reason to assume that schools differ with regard to the dimensions of culture.

Our second research question concerned whether the questionnaire was able to detect the differences found in the qualitative analyses. To answer this question, two analyses were performed. The first analysis was concerned with differences found between the schools, compared to differences within the schools. An analysis of variance was used to analyze this and the results are shown in Table 4.5. As the table reveals, the differences between individual school members were much larger than those between schools. Despite the small number of schools and respondents, the analysis also revealed significant differences between schools for five of the eight scales (see also Maslowski, 1998a).

An analysis was carried out to test whether the questionnaire accurately reflected the differences in culture between the schools. This analysis consisted of comparing the mean scores on each of the scales with the cultural profile derived from the qualitative analyses. Similarly, the items that had the highest scores were assumed to reflect certain strongly-valued issues. These were also compared to the results of the qualitative analysis. The Tables in which these results are presented can be found in *Appendix V*.

These analyses revealed that the questionnaire was able to identify the cultural profiles of both schools. For *Merthyburgh CS*, three of the four scales that were identified as characteristic for the school, gained the highest ratings by the school staff. The only exception was the 'professionalization orientation', which was rated less than two other cultural dimensions. Furthermore, an examination of the items rated highly revealed a similar pattern. One of the school's characteristic features was its strong emphasis on ensuring external support for the school, especially from parents. This item, as well as others that express the school's external support orientation, is among the items rated highest. Similarly, the monitoring of students and the emphasis on clear procedures is reflected in the items that were rated high by the staff of *Merthyburgh CS*. With regard to *St Ignatius High School*, we concluded that this school had a less clear cultural profile than *Merthyburgh*. The analysis of the inventory reveals the same picture. For each of the dimensions the ratings of *St Ignatius* are below those of *Merthyburgh*. The items rated high by the staff of *St Ignatius* reflect the traditional culture of the school – an emphasis on achievement and obedience. In

conclusion, for both schools the results of the qualitative analysis are broadly substantiated by the outcomes of the inventory. This shows that the *School Culture Inventory* is likely to reflect the most characteristic features of the culture of secondary schools.

*Table 4.6 Reliability of the scales of the School Culture Inventory (Form Ib) (n = 86)*

| Scale | *Form Ib* | | Adapted *Form Ib* | |
|---|---|---|---|---|
| | Number of items | Reliability (Cron-bach's α) | Number of items | Reliability (Cron-bach's α) |
| Professionalization orientation | 7 | 0.79 | 7 | 0.79 |
| Commitment and support orientation | 8 | 0.69 | 6 | 0.83 |
| Adaptation and innovation orientation | 8 | 0.62 | 7 | 0.73 |
| External support and facilities orientation | 9 | 0.75 | 9 | 0.75 |
| Productivity and accomplishment orientation | 8 | 0.64 | 6 | 0.69 |
| Means-ends orientation | 7 | 0.71 | 7 | 0.71 |
| Stability and control orientation | 8 | 0.63 | 7 | 0.65 |
| Efficiency orientation | 7 | 0.73 | 7 | 0.73 |

To examine the reliability of the questionnaire, Cronbach's alpha was computed for each of the scales. As appears from Table 4.6, a number of scales revealed reliabilities that were below 0.70. By eliminating items that had a low item-rest correlation ($r_{ir}$), some of the scales could be improved. As the last column of Table 4.6 shows, however, two of the scales, 'Productivity and accomplishment orientation' and 'Stability and control orientation', still showed a low alpha.

## 4.4 Revision of the School Culture Inventory

Based on the findings from the preliminary studies, it was decided to revise the *School Culture Inventory* according to the following criteria. First, the inventory had to reflect more general dimensions of culture. A number of scales of the *School Culture Inventory* Form I were found to be hardly relevant to schools. For that reason, a more concise number of dimensions was aimed for. It was decided to use the four culture orientations of the competing values framework as a basis for these. Furthermore, the formulated items were to be less situation dependent. The preliminary study revealed that the ratings of some items differed from those of other items from the same dimension because those particular items reflected certain practices within the school. Thus the items had to be more divorced from specific actions and more directly referring to underlying values. Earlier work of Rokeach (1973) on

values and Enz (1986) on organizational values was used to formulate the items. A similar approach was used by Van Muijen (1984) and Quinn & Spreitzer (1991) in their operationalizations of items from the competing values model.

One of the difficulties with the operationalization of values is that respondents tend to rate what they prefer themselves (Rokeach, 1968). Thus it was decided to ask respondents to rate their personal as well as school values. By combining these two aspects, it was assumed that respondents would provide more reliable ratings of school values.

With regard to the substance of the values, items were derived from other questionnaires based on the Competing Values Framework: Cameron's *Organizational Culture Assessment Instrument* (Cameron, 1985; Cameron & Quinn, 1999; Quinn, 1988), Denison and Mishra's (1995) *Culture Traits Questionnaire*, Quinn's instrument for measuring organizational culture (Quinn & Spreitzer, 1991) and Van Muijen's *FOCUS* (Van Muijen, 1994; Van Muijen, Koopman & De Witte, 1996). The questionnaire of Enz (1986), directed at measuring organizational values, was also examined for relevant items and the preliminary study results were used for constructing additional items.

The revised form of the inventory (Form II) consisted of four scales and 40 items:

1. *Human Relations orientation* (10 items). This scale reflects to what extent school members focus on support and understanding within the school. Item examples: "Loyalty" and "Mutual trust".
2. *Open Systems orientation* (10 items). This scale reflects to what extent school members focus on innovation and change. Item examples: "Adaptability" and "Change orientation".
3. *Rational Goal orientation* (10 items). This scale reflects to what extent school members focus on performance and effectiveness. Item examples: "Achievement orientation" and "Effectiveness".
4. *Internal Process orientation* (10 items). This scale reflects to what extent school members are oriented towards predictability and stability. Item examples: "Stability" and "Control".

All items were measured by means of five point Likert-scales. The inventory is reprinted in *Appendix VI*.

## 4.5 Pilot study

The pilot-study was aimed at determining and further refining the quality of the questionnaire. A principal component analysis with a varimax rotation was performed.

*Table 4.7 Results of Factor Analysis of Perceived School Culture*

| School Culture Inventory Item (Form II) | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---|---|---|---|---|
| Innovation orientation | **.76** | - .08 | - .09 | .26 |
| Flexibility | **.82** | - .16 | - .07 | .23 |
| Diversity | **.79** | - .08 | - .08 | .22 |
| Play along with circumstances | **.81** | - .05 | - .07 | .19 |
| Reform orientation | **.81** | - .08 | - .11 | .23 |
| Adaptability | **.83** | - .05 | - .07 | .18 |
| Versatility | **.75** | - .14 | - .12 | .13 |
| Openness to new developments | **.80** | - .04 | - .10 | .18 |
| Change orientation | **.80** | - .04 | - .08 | .22 |
| Responsiveness | **.88** | - .14 | .07 | - .20 |
| Results orientation | - .14 | **.83** | .10 | .07 |
| Achievement orientation | - .12 | **.84** | .17 | .11 |
| Effectiveness | - .05 | **.81** | .17 | .04 |
| Efficiency | .14 | **.61** | .20 | - .09 |
| Goal orientation | - .10 | **.80** | .17 | .10 |
| Efficacy | - .11 | **.85** | .18 | .10 |
| Pursuit of success | - .07 | **.86** | .16 | .01 |
| Accomplishment | - .10 | **.83** | .18 | .03 |
| Productivity | - .09 | **.85** | .15 | .09 |
| Goal attainment | - .09 | **.78** | .22 | .07 |
| Security | - .10 | .15 | **.77** | .13 |
| Stability | - .18 | .19 | **.74** | .10 |
| Continuity | - .09 | .16 | **.76** | .08 |
| Consistency | - .15 | .08 | **.73** | .07 |
| Solidity | - .11 | .21 | **.82** | .08 |
| Formalization | - .03 | .13 | **.81** | - .06 |
| Coordination of activities | - .07 | .17 | **.80** | - .08 |
| Regulation | - .03 | .14 | **.78** | - .08 |
| Control | - .04 | .17 | **.80** | .02 |
| Constancy | - .02 | .26 | **.72** | .01 |
| Mutual Understanding | .11 | .02 | - .00 | **.77** |
| Commitment to school | .14 | .04 | .03 | **.73** |
| Helpfulness | .21 | .09 | .04 | **.73** |
| Mutual trust | .20 | .02 | .03 | **.76** |
| Collaboration | .10 | .08 | .02 | **.80** |
| Loyalty | .19 | .05 | .06 | **.76** |
| Pleasant atmosphere | .20 | .06 | .07 | **.74** |
| High morale | .25 | - .07 | - .03 | **.80** |
| Solidarity | .24 | .07 | - .06 | **.75** |
| Support of others | .29 | .08 | .05 | **.72** |

Using Kaiser's (1960) criterion, factors with an Eigenvalue greater than one were extracted. This analysis revealed four factors, explaining 66.3 % of the variance (Table 4.7). The four factors corresponded with the four scales derived from the competing values framework. The factor analysis revealed no ambiguous items, or items that failed to load at least .30 on one of the factors. For each of the four factors, a reliability analysis was performed. This analysis indicated no items that had to be removed from the questionnaire. Cronbach's alpha for each of the four scales was found to be high, ranging from .93 to .95 (Table 4.8).

*Table 4.8 Reliability of the scales of the School Culture Inventory (Form II) (N = 253)*

| Scale | Number of items | Reliability (Cronbach's α) |
|---|---|---|
| Human Relations orientation | 10 | 0.93 |
| Open Systems orientation | 10 | 0.95 |
| Rational Goal orientation | 10 | 0.95 |
| Internal Process orientation | 10 | 0.93 |

In order to determine the construct validity of the questionnaire, the relationships between the scales were examined. In Table 4.9, the correlations between the four (unrotated) culture orientations are given. Intercorrelations among the orientations indicate that the internal process and rational goal orientations are related. This finding is in accordance with earlier studies into the competing values framework (Quinn & Rohrbaugh, 1983; Van Muijen, 1994). The human relations orientation was also found to be related to the open systems orientation.

*Table 4.9 Correlations among the culture scales*

| Scales | Human Relations orientation | Open Systems orientation | Internal Process orientation | Rational Goal orientation |
|---|---|---|---|---|
| Human Relations orientation | 1.00 | | | |
| Open Systems orientation | .44 | 1.00 | | |
| Internal Process orientation | .05 | - .26 | 1.00 | |
| Rational Goal orientation | .08 | - .20 | .41 | 1.00 |

A negative correlation was found between the open systems and the internal process orientations. In earlier studies, contradictory outcomes were found for this relation. Zammuto and Krakower (1991), for instance, reported a negative correlation between the open systems and the internal process orientations, whereas Van Muijen (1994) and Boerman (1998) –in his study on effectiveness factors– reported positive correlations. For the relationship between the open systems and rational goal orientations only positive correlations were reported in earlier studies (Boerman, 1998; Van Muijen, 1994; Zammuto & Krakower, 1991), whereas a negative one was found in this study.

## 4.6 Confirmatory study

In order to test whether the conceptual structure found by exploratory factor analysis in the pilot-study is stable, a confirmatory factor analysis was performed. A measurement model was specified with four latent variables reflecting the value orientations of the competing values framework. Each of these orientations was measured by ten items, and each item was specified to relate to only one orientation, in accordance with the results from the exploratory factor analysis described in paragraph 4.5. These 40 items represented the observed variables. Each of the four value orientations was allowed to correlate with the other orientations (see Chapter 3).

A LISREL analysis was performed to test whether this model fitted the data. In Jöreskog and Sörbom's (1993) terms, a "strictly confirmatory" procedure was followed, i.e. only one single model was formulated and fitted against empirical data. To estimate the model, the method of *Unweighted Least Squares* (ULS) was used because it does not impose the assumption of normality on the observed variables (Bollen, 1989; Long, 1994). As the literature indicates, the ratings of values are often negatively skewed, due to the tendency to respond positively to values (cf. Alwin & Krosnick, 1985).

Jöreskog and Sörbom (1993) recommend first examining the parameter estimates to determine if there are any unreasonable values or other anomalies. This is done by examining the sign and size of the parameter estimates. The estimates of the observed items in relation to the respective culture orientation appeared reasonable. Each of the estimates was positive, and the size of most of them was in accordance, albeit more moderately, with the values found in the exploratory factor analysis (see Table 4.7). The correlations between the latent variables also reflected the correlations found in the exploratory factor analysis for the four culture orientations. The values are accurate for the relationship between the Open Systems orientation and the Internal Process orientation (-0.22) and Rational Goal orientation (-0.21), respectively. For the relationship

between the Internal Process orientation and the Rational Goal orientation, the estimate (0.54) was comparable to the correlation found in the exploratory factor analysis (0.41). For the Human Relations orientation, however, differences in correlations were found. The exploratory factor analysis revealed a strong correlation with the Open Systems orientation (0.44), while the correlation found in the confirmatory factor analysis was considerably lower (0.12). In the exploratory factor analysis low figures were found for the Rational Goal orientation (0.08) and the Internal Process orientation (0.05), whereas these figures were much larger in the LISREL analysis (0.19 and 0.35, respectively). Nevertheless, on the whole, the findings of both analyses[3] appear to be relatively similar.

Furthermore, the $R^2$ values were examined. As Mueller (1996) indicates, the $R^2$ values can be interpreted as descriptive reliability estimates for the observed items. As Figure 4.2 shows, in general the values of the error variances (1 - $R^2$) are of moderate to acceptable size, with a few high values for the items 'Diversity', 'Efficiency' and 'Formalization'.

Second, the model was examined for its overall fit. A large number of test statistics exist to test the fit of the model (e.g., Bollen, 1989; Kelloway, 1998). One of the frequently used test statistics is the Chi-square measure with certain degrees of freedom. However, as Long (1994) argues, the Chi-square statistic has little value as a measure of absolute fit under ULS. Therefore, a number of other fit indices were examined. A commonly used indicator for model fit is Jöreskog and Sörbom's (1981) Goodness-of-Fit Index (GFI), and the Adjusted Goodness-of-Fit Index (AFGI) in which the GFI is adjusted for the model's degrees of freedom. These indices indicate how much better the model fits compared to no model at all. Generally, a GFI of 0.90 or larger is considered to indicate satisfactory or good model fit (Kelloway, 1998). For our model, both the GFI (0.95) and AGFI (0.95) were found to be satisfactory.[4]

Another measure for overall fit is the Root Mean Squared Residual (RMR). This is the square root of the mean of the squared discrepancies between the implied and observed covariance matrices. Low values are taken to indicate good fit. As Kelloway (1998) notes, the RMR is sensitive to the scale of measurement of the model variables, which makes it difficult to determine what low means in this respect. Generally, however, values less than 0.10 indicate a reasonable fit to the data, with values less than 0.05 indicating good fit. For our model, a RMR of 0.07 was found.

As a third measure of overall fit, the Root Mean Squared Error of Approximation (RMSEA) was examined. Similar to the RMR, the RMSEA is based on the analysis of residuals, with smaller values indicating a better fit to the data. Steiger (1990) suggests that values below 0.10 indicate a good fit to the data, and values below 0.05 a very good fit. The model failed to meet this criterion, with its value of 0.13.

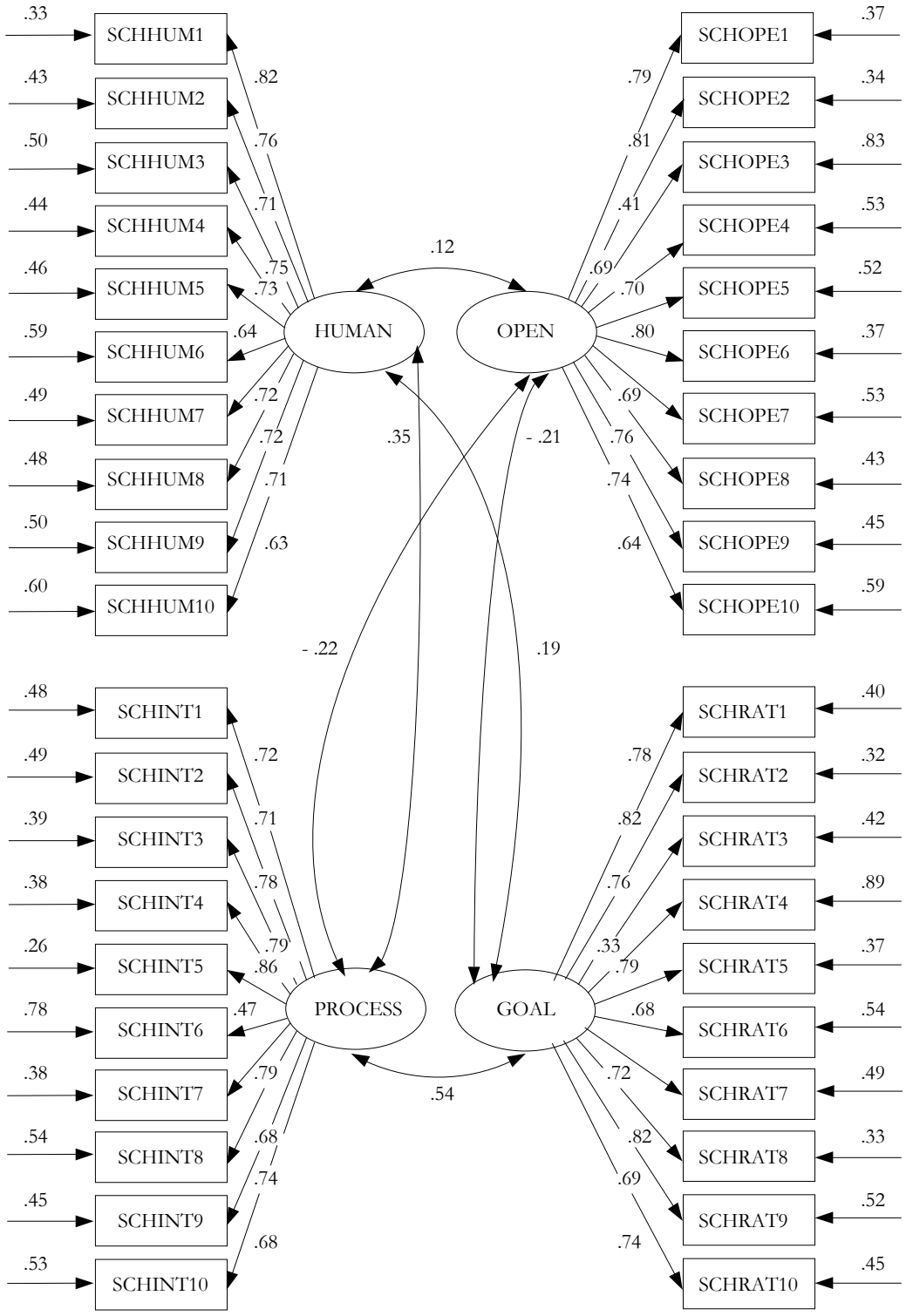


*Figure 4.1* *Constructed model for school members' perception of their school's culture*

To sum up, the evaluation of the model indicated relatively good fit. The visual inspection of the parameter estimates revealed no strong deviations from the earlier explorative factor analysis. Only a few values were low, indicating that three of the items may be less suitable. An examination of the overall fit measures indicated a good fit for the GFI and AGFI, and to a lesser degree for the RMR. Only the value that was found for the RMSEA indicated that the model did not fit the data. In general, therefore, the analysis confirmed our earlier model, thereby confirming the construct validity of the inventory.

*Table 4.10 Reliability of the scales of the School Culture Inventory (Form II) at school level*

| Scale | Number of items | School Level | |
|---|---|---|---|
| | | $n_j$ * | Reliability ($\lambda_i$) |
| Human Relations orientation | 10 | 14.55 | 0.68 |
| Open Systems orientation | 10 | 13.93 | 0.90 |
| Rational Goal orientation | 10 | 14.19 | 0.73 |
| Internal Process orientation | 10 | 13.92 | 0.79 |

* $n_j$ is the harmonic mean of the number of respondents per school

Besides the validity, the reliability of the inventory was further examined by determining the reliability of the aggregated variables at school level. This revealed satisfactory values for the rational goal and internal process orientations. The open systems orientation was found to be highly reliable (0.90). The reliability of the human relations orientation, on the other hand, was relatively low (0.68).

# Chapter 5
# The Culture of Secondary Schools

## 5.1 Introduction

The culture of schools is one of the recurring themes in educational research. Its roots can be traced back to Waller's *The Sociology of Teaching*. As early as 1932, Waller noted that schools "have a culture that is definitely their own. There are, in the school, complex rituals of personal relationships, a set of folkways, mores, and irrational sanctions, a moral code based upon them" (p. 103). Although the interest in school culture among educational scholars lay dormant for several decades after Waller's treatise, it gained renewed attention in the 1970s since it was seen as a barrier for educational change (cf. Goodlad, 1977; Sarason, 1971; Tye, 1974). During the 1980s, school culture became an important theme in school administration for both practitioners and academics (see for e.g. Kelley & Bredeson, 1987; Kottkamp, 1984; Ortiz, 1986; Owens, Steinhoff & Rosenbaum, 1989; Papalewis, 1988; Rossman, Corbett & Firestone, 1988; Willower & Smith, 1986). In these studies the concept of school culture was further explored and related to educational leadership and educational change, both of which were subject to continued research in the 1990s (cf. Prosser, 1999; Sashkin & Walberg, 1993). However, despite the growing number of publications on school cultures over the last three decades, our knowledge of cultural types of secondary schools is still rather limited.

This limited insight is primarily due to the fact that most empirical research into the culture of secondary schools has been qualitative and interpretative in nature, collecting data from a small sample of schools. Most of these studies provided ethnographic

accounts of high schools (e.g., Grant, 1988; Henry, 1993; Lightfoot, 1983; Swidler, 1979). Although these studies contributed to our understanding of the nature of culture in school organizations, they provided little information on the relevance of these characteristics for other schools. Until recently, only a few studies were expressly aimed at comparing the cultures of secondary schools (e.g. Cavanagh & Dellar, 1999; Pang, 1996). However, these studies merely focused on cultural differences between schools regarding a number of predetermined dimensions. In these studies the interrelation between these cultural dimensions and the degree of correspondence among schools on each of cultural profiles was hardly addressed. [1]

A notable exception is the study by Pang (1998) on the culture of secondary schools in Hong Kong. Pang identified a cultural profile for each of the schools in his study based on the composite scores of these schools on four variables: bureaucratic linkage, cultural linkage, tight coupling and loose coupling. His graphic representations of these cultural profiles indicate that schools differ regarding the pattern and magnitude of these profiles. Some schools are rated relatively high on one or two of the four variables, whereas other schools have profiles in which these hardly differ from each other. However, Pang did not further analyze these profiles to identify cultural types of secondary schools.

In this chapter, we attempt to explore the feasibility of a cultural typology of secondary schools in the Netherlands. For this purpose, a cluster analysis was performed. The outcomes of this analysis are presented in Section 5.3. The typology of school cultures, based on these outcomes, is outlined in Section 5.4. The relationship between this typology and the denomination and size of schools is then examined. Prior to this, Section 5.2 presents a general characterization of cultural dimensions in secondary schools.

## 5.2 Cultural features of secondary schools

As already stated, relatively little is known about what features are valued in schools. For this reason, this section gives a number of descriptive statistics for secondary schools in the Netherlands. As Table 5.1 reveals, secondary education teachers and school administrators value collegial relationships as indicated by the relatively high rating of the human relations orientation ($\bar{x} = 3.63$). Thus teachers generally ascribe to values of mutual support and collaboration. The relatively high score on the human relations orientation also indicates that teachers value an atmosphere of mutual trust and understanding in school. Furthermore, it shows that teachers and administrators consider loyalty, collegial

solidarity and commitment to the school team to be relatively important features.

Table 5.1 further reveals that secondary schools can be characterized by a strong rational goal orientation ($\bar{x}$ = 3.65), indicating that staff members generally value a high performance from their school. In other words, secondary school teachers and administrators seem to be concerned with the demands of accountability, and are inclined to realize their school's objectives. This suggests that the pursuit of high student achievement has gained acceptance among secondary school teachers.

*Table 5.1 Descriptive statistics for schools participating in the study*

| | Minimum | Maximum | Mean | Standard Deviation |
|---|---|---|---|---|
| Human Relations Orientation | 3.24 | 4.07 | 3.63 | .19 |
| Open Systems Orientation | 2.46 | 3.46 | 2.94 | .26 |
| Internal Process Orientation | 3.11 | 3.94 | 3.53 | .18 |
| Rational Goal Orientation | 3.20 | 4.06 | 3.65 | .24 |

The values for each of the four cultural orientations range from 1 (of very little importance) to 5 (of utmost importance)

Issues related to the internal process of the school, like an emphasis on stability and continuity are also valued by secondary school staff, albeit the figures for this orientation are slightly smaller than those for the human relations and rational goal orientations ($\bar{x}$ = 3.53). The results indicate that teachers and administrators consider a certain formalization of school processes, which regulates and coordinates the activities of individual staff members to be necessary. It also suggests that the characterization of schools as 'professional bureaucracies' still applies to a large extent to secondary schools.

The open systems orientation, on the other hand, seems to be less prominent in secondary schools. As Table 5.1 reveals, this orientation in which innovation and adaptability are emphasized, is only moderately valued by teachers and administrators ($\bar{x}$ = 2.94). In order words, schools are less inclined towards change and educational reform. Notwithstanding this general impression, relatively large differences were found between schools with regard to the open systems orientation. The mean scores of schools on this orientation ranged from 2.46 to 3.46, whereas the range was considerably smaller (between 0.83 and 0.86) for the three other orientations. The relatively large standard deviation found for the open systems orientation indicates that this cannot be attributed to one or two outlier schools.

Furthermore, as Table 5.1 illustrates, despite the similar mean score range for the human relations, internal process and rational goal orientations, schools appear to differ

more on values related to the latter. In order to explore the nature of these differences, the distributions of the four culture orientations were further examined. This revealed that the mean ratings of schools for the human relations and internal process orientations are close to the grand mean, and that their distributions approximate the normal curve.[2] This indicates that no large differences were found between schools with regard to the human relations and internal process orientations, and that most of the schools have scores for these orientations that are close to the means presented in Table 5.1. In other words, Dutch secondary schools are rather similar with regard to values like collaboration, commitment and stability.

An analysis of the distribution of the school scores for the rational goal and open systems orientations revealed no strong deviations from the normal distribution.[3] Nevertheless, the distribution of school scores suggests that these are less centered around the grand mean for both orientations. This indicates that schools probably differ more on the rational goal and open systems orientations than on the human relations and internal process ones. Furthermore, the results suggest that a small number of schools have more positive scores on the open systems orientation compared to the other ones.

### *5.2.1 School culture and denomination*

School cultures are often conceived as being influenced by their historical origins. In the Dutch context, the mission of schools and the background of their teachers are influenced to a large extent by the school's denomination. For this reason, the relationship between a school's culture and denomination was examined. The analysis revealed substantive differences between denominations for the four culture orientations.

The results indicate that public schools score around average on values related to human relations and internal process orientations (Table 5.2). Public schools, however, appear to give more importance to values from the open systems orientation. Therefore, on average, public schools are more inclined towards educational change than Catholic or Protestant schools. Furthermore, public schools tend to be relatively low goal and achievement oriented.

Catholic schools, on the other hand, can be characterized by a strong emphasis on the rational goal orientation. More than any of the other denominations, high performance is valued. This tendency towards achievement is accompanied by a relatively low score on the open systems orientation. Catholic schools did not differ from the three others with regard to human relations and internal process orientations.

*Table 5.2 Mean scores on culture orientations for each of the denominations*

| | | *n* | Mean | Standard deviation |
|---|---|---|---|---|
| Human Relations Model | Public | 19 | 3.68 | .11 |
| | Catholic | 23 | 3.58 | .20 |
| | Protestant | 10 | 3.60 | .25 |
| | Other denominations | 15 | 3.68 | .19 |
| | *Total* | *67* | *3.63* | *.19* |
| Open Systems Model | Public | 19 | 3.12 | .20 |
| | Catholic | 23 | 2.83 | .18 |
| | Protestant | 10 | 2.69 | .13 |
| | Other denominations | 15 | 3.05 | .28 |
| | *Total* | *67* | *2.94* | *.26* |
| Internal Process Model | Public | 19 | 3.51 | .14 |
| | Catholic | 23 | 3.51 | .20 |
| | Protestant | 10 | 3.67 | .17 |
| | Other denominations | 15 | 3.51 | .15 |
| | *Total* | *67* | *3.53* | *.18* |
| Rational Goal Model | Public | 19 | 3.52 | .11 |
| | Catholic | 23 | 3.75 | .27 |
| | Protestant | 10 | 3.60 | .22 |
| | Other denominations | 15 | 3.68 | .25 |
| | *Total* | *67* | *3.65* | *.24* |

Protestant schools are characterized by an emphasis on the internal process orientation. They tend to value stability and continuity. Furthermore, Protestant schools score relatively low on the open systems orientation. This indicates that, on average, they are more reluctant to change and implement innovation than schools of other denominations. No significant differences were found with respect to the human relations and rational goal orientations.

Schools other than public, Catholic or Protestant do not have a clear profile with regard to any of the four orientations. This may be explained by the diversity of these schools, ranging from ecumenical, and Montessori schools to mergers of schools with various denominations. Therefore, the cultural profiles of these schools are expected to differ across these diverse origins. On the other hand, only for the open systems orientation did these schools differ more than public, Catholic and Protestant schools.

### 5.2.2 School culture and school size

The formation of culture, according to Schein (1985), is related to group processes. It can be argued, for instance, from a functional perspective, that values related to the human relations orientation will be more evident in relatively small organizations, as staff members are more thrown onto each other's company.

*Table 5.3 Mean scores on culture scales based on school size*

| | | *n* | Mean | Standard deviation |
|---|---|---|---|---|
| Human Relations Model | Less than 250 students | 8 | 3.70 | .18 |
| | 250 to 500 students | 20 | 3.69 | .20 |
| | 500 to 750 students | 15 | 3.62 | .19 |
| | 750 to 1,000 students | 11 | 3.60 | .15 |
| | 1,000 to 1,250 students | 6 | 3.49 | .24 |
| | 1,250 to 1,500 students | 3 | 3.59 | .17 |
| | More than 1,500 students | 4 | 3.65 | .10 |
| | *Total* | *67* | *3.63* | *.19* |
| Open Systems Model | Less than 250 students | 8 | 2.79 | .18 |
| | 250 to 500 students | 20 | 2.88 | .25 |
| | 500 to 750 students | 15 | 3.06 | .21 |
| | 750 to 1,000 students | 11 | 3.00 | .35 |
| | 1,000 to 1,250 students | 6 | 2.88 | .13 |
| | 1,250 to 1,500 students | 3 | 2.94 | .40 |
| | More than 1,500 students | 4 | 3.11 | .08 |
| | *Total* | *67* | *2.94* | *.26* |
| Internal Process Model | Less than 250 students | 8 | 3.58 | .12 |
| | 250 to 500 students | 20 | 3.59 | .19 |
| | 500 to 750 students | 15 | 3.50 | .13 |
| | 750 to 1,000 students | 11 | 3.51 | .18 |
| | 1,000 to 1,250 students | 6 | 3.45 | .18 |
| | 1,250 to 1,500 students | 3 | 3.49 | .41 |
| | More than 1,500 students | 4 | 3.57 | .05 |
| | *Total* | *67* | *3.53* | *.18* |
| Rational Goal Model | Less than 250 students | 8 | 3.67 | .20 |
| | 250 to 500 students | 20 | 3.67 | .27 |
| | 500 to 750 students | 15 | 3.54 | .21 |
| | 750 to 1,000 students | 11 | 3.68 | .26 |
| | 1,000 to 1,250 students | 6 | 3.76 | .19 |
| | 1,250 to 1,500 students | 3 | 3.69 | .29 |
| | More than 1,500 students | 4 | 3.63 | .16 |
| | *Total* | *67* | *3.65* | *.24* |

Similarly, large organizations will have a more elaborate structure, as well as more rules and procedures to coordinate the activities of individual staff members. In these organizations, rules will be an important prerequisite for the smooth functioning of the school. Staff members, therefore, are likely to be more inclined to value these rules and procedures. In order to explore these functional imperatives, the relationship between school culture and school size was examined.

This analysis, using Spearman correlations, revealed that school size was significantly related to an emphasis on open systems values ($r = 0.27$). This indicates that large schools tend to be more change oriented. An explanation for this might be that teachers in large schools are likely to have less autonomy than their colleagues in smaller schools, and are thus used to implementing regulations or ideas from others. On the other hand, a counter argument might be that school-wide change is more difficult to implement in large schools, so teachers and school administrators are likely to have negative experiences with implementing innovations. No significant relationship with school size was found for values relating to the human relations ($r = - 0.22$), internal process ($r = - 0.22$) and rational goal orientations ($r = - 0.01$).

To determine whether a non-linear relationship was present between the four cultural orientations and school size, the latter was grouped into seven categories: less than 250 students, 250 to 500 students, 500 to 750 students, 750 to 1,000 students, 1,000 to 1,250 students, 1,250 to 1,500 students, and more than 1,500 students.

As Table 5.3 reveals, differences were found between small and large schools with regards to the open systems orientation. An inspection of the values revealed that the values first increase with size, then decrease and then increase again. This shows that this relationship is rather weak, or that a non-linear relationship between the two variables might in fact exist.

## 5.3 Cluster analysis of school cultures

In order to gain an understanding of the types of culture that are present in secondary schools a cluster analysis was performed. To depict images of schools using a cluster analysis, the extent to which the (patterns in) culture scores between schools are similar has to be identified. For this purpose, as explained in Chapter 3, an agglomerative hierarchical cluster analysis was applied using Ward's method for cluster formation.

*Table 5.4 Fusion coefficient for ten-cluster to one-cluster solutions*

| Number of Clusters (j) | Fusion coefficients ($x_j$) | Divergence between coefficients ($x_j - x_{j+1}$) | Differences of divergence measures ($x_j - x_{j+1}$) - ($x_{j+1} - x_{j+2}$) |
|---|---|---|---|
| 10 clusters | 56.085 | 5.905 | - |
| 9 clusters | 62.223 | 6.138 | .233 |
| 8 clusters | 69.239 | 7.016 | .878 |
| 7 clusters | 78.617 | 9.378 | 2.362 |
| 6 clusters | 89.717 | 11.100 | 1.722 |
| 5 clusters | 101.547 | 11.830 | .730 |
| 4 clusters | 121.976 | 20.429 | 8.599 |
| 3 clusters | 144.616 | 22.640 | 2.211 |
| 2 clusters | 189.800 | 45.184 | 22.544 |
| 1 cluster | 264.000 | 74.200 | 29.016 |

A crucial step in interpreting cluster analyses is the determination of the number of clusters. Thus a determination procedure was followed that was derived from Bosker (1990), based on comparing several cluster solutions, within a reasonable range, with regard to four criteria. First, the increase in squared distance within the selected clusters has to be relatively large. Second, the distribution of schools over clusters has to be relatively equal. Third, the clusters should be discriminative with respect to the variables on which the clusters are based, and fourth, the clusters have to be interpretable with regard to our aim of constructing cultural profiles for secondary schools. This section focuses on this procedure, and on our justification for the clusters identified.

As Table 5.4 reveals, relatively large differences in fusion coefficient were found between the five and four-cluster solutions (8.599), and between the three and two-cluster solutions (22.544). This indicates that either a five or three-cluster solution is most appropriate. Then, using discriminant analysis, it was tested whether the clusters differed significantly from each other. For that purpose, *Wilks' lambda statistic* was used (Norušis, 1988). The test revealed that both the five and the three-cluster solutions were discriminative. The distribution of schools over clusters was also compared to the predicted cluster membership based on the discriminant analysis. This revealed a high correspondence between both classifications for the selected cluster solutions (see *Appendix VII*).

Bosker's third criterium is concerned with the distribution of schools over clusters. For the three-cluster solution schools were found to be more or less equally distributed over the clusters. The five-cluster solution, in contrast, shows a less equal distribution over clusters, ranging from 5 to 22. On the other hand, the five-cluster solution

has the advantage that it provides a more detailed description of cultural profiles of schools. This presumes that the five factors are interpretable. A further examination of the composition of the clusters revealed meaningful differences in cultural profiles for these clusters. For that reason, five clusters were identified.

## 5.4 Typology of school cultures

The school culture profiles, based on the cluster analysis, have different scores on the four cultural orientations, as illustrated in Figure 5.1, which contains a bar diagram of the mean z-scores on the human relations, open systems, internal process and rational goal orientations for each cluster. As can be observed from this Figure, each cluster has a different composition of positive and negative derivations from the overall means on the four scales, while the positive and negative scores also differ in magnitude. In order to determine which of these elements are characteristic for each cluster, the mean scores on each of the culture scale were examined for their significance. The absolute scores, as well as the standardized scores on the culture scales for each of the clusters, are presented in Table 5.6.

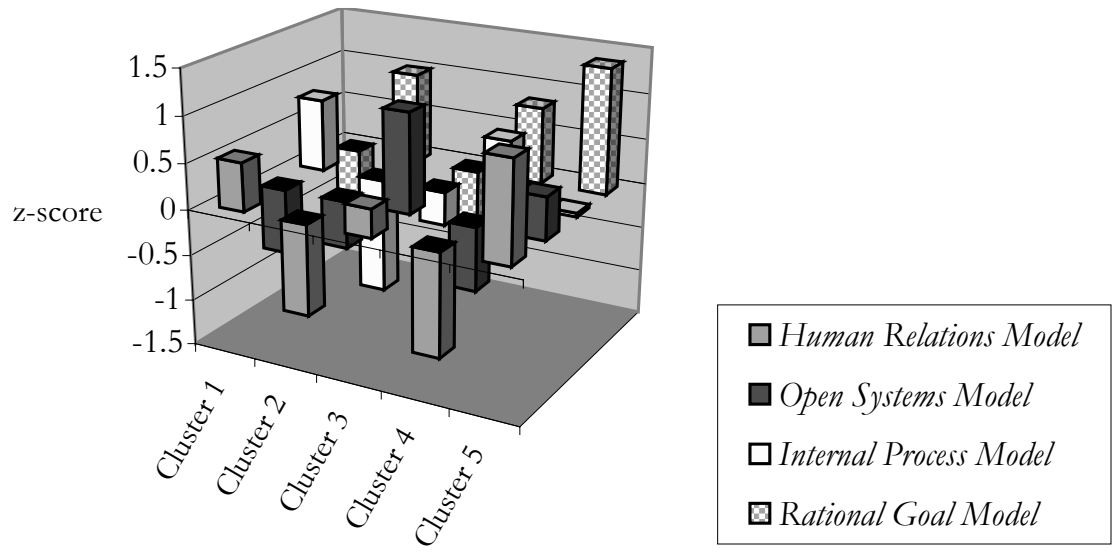


*Figure 5.1 Bar diagram of mean scores on four cultural scales for each cluster*

The first cluster consists of 19 schools, which can be characterized as leaning towards the internal organization. Schools from this cluster emphasize values that reflect a human relations orientation and an internal process orientation. On the one hand, therefore,

values like collaboration and mutual support are valued by teachers and administrators; on the other, stability and continuity is emphasized. Schools from this cluster are likely to have a closed climate. The image that emerges reveals a school with a 'cohesive' staff, in which formal and informal norms regulate the activities of each individual staff member. This image of schools in this cluster is strengthened by the relatively low emphasis on the 'external' open systems and rational goal orientation.

*Table 5.6 Mean scores of clusters on the culture scales*

| Scale | Cluster | *n* | Absolute scores | | Standardized scores | |
|---|---|---|---|---|---|---|
| | | | Mean | Standard Deviation | Mean | Standard Deviation |
| Cluster 1 | Human Relations | 19 | 3.73 | .14 | *.53* | .74 |
| | Open Systems | | 2.76 | .17 | *-.71* | .65 |
| | Internal Process | | 3.67 | .12 | *.79* | .70 |
| | Rational Goal | | 3.52 | .13 | *-. 50* | .56 |
| Cluster 2 | Human Relations | 11 | 3.45 | .13 | *-.99* | .68 |
| | Open Systems | | 2.81 | .18 | *-.52* | .70 |
| | Internal Process | | 3.31 | .11 | *-1.27* | .63 |
| | Rational Goal | | 3.89 | .08 | *.99* | .35 |
| Cluster 3 | Human Relations | 22 | 3.69 | .13 | *.31* | .67 |
| | Open Systems | | 3.22 | .14 | *1.08* | .55 |
| | Internal Process | | 3.47 | .13 | *-.37* | .76 |
| | Rational Goal | | 3.47 | .18 | *-.75* | .76 |
| Cluster 4 | Human Relations | 10 | 3.42 | .11 | *-1.12* | .61 |
| | Open Systems | | 2.77 | .10 | *-.69* | .38 |
| | Internal Process | | 3.65 | .10 | *.69* | .54 |
| | Rational Goal | | 3.85 | .11 | *.83* | .46 |
| Cluster 5 | Human Relations | 5 | 3.84 | .14 | *1.07* | .76 |
| | Open Systems | | 3.06 | .17 | .46 | .67 |
| | Internal Process | | 3.54 | .09 | .04 | .50 |
| | Rational Goal | | 3.97 | .09 | *1.37* | .36 |

*Italic z-scores significantly differ from 0 (5% two-sided)*

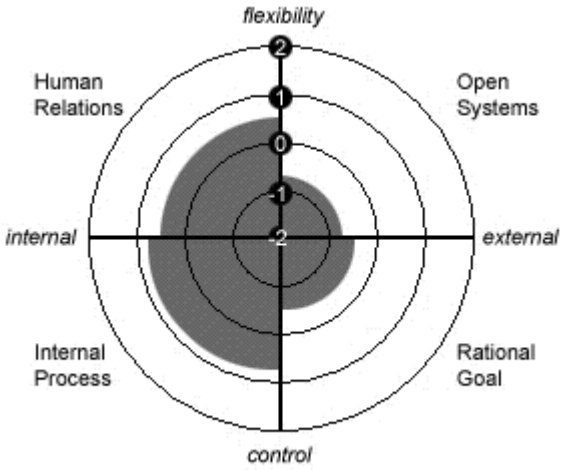


*Figure 5.2a Cultural Profile of Cluster 1*

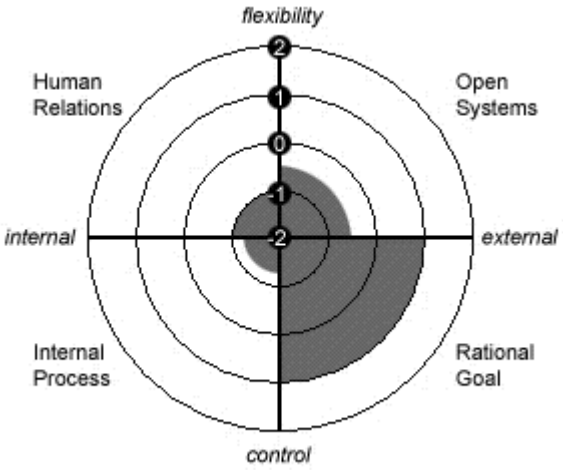


*Figure 5.2b Cultural Profile of Cluster 2*

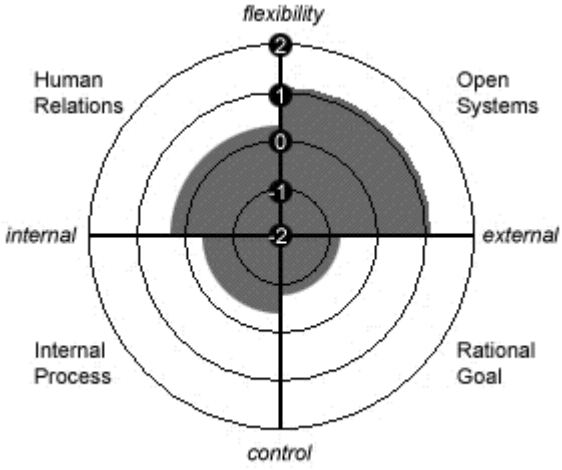


*Figure 5.2c Cultural Profile of Cluster 3*

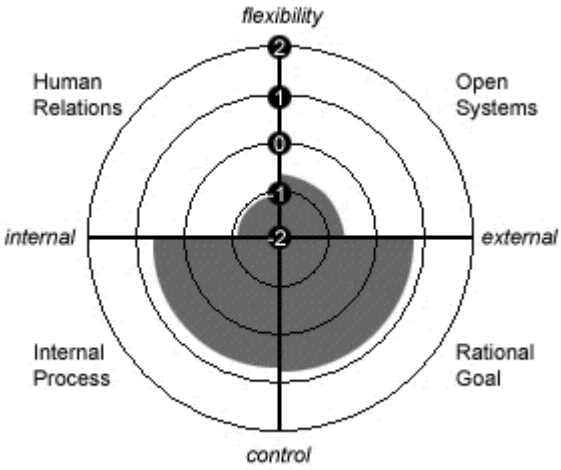


*Figure 5.2d Cultural Profile of Cluster 4*

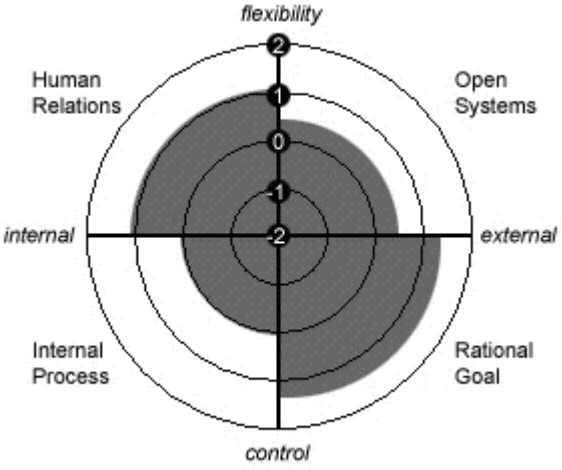


*Figure 5.2e*
*Cultural Profile of Cluster 5*

*Note:*
*Due to the manual shading of the four scales some small deviances from the absolute values in Table 5.6 may occur.*

The second cluster consists of 11 schools. The schools in this cluster, unlike the preceding cluster, can be characterized by relatively little emphasis on rules, stability and predictability. These schools also exhibit a strong goal orientation, and value performance and achievement. Relatively little attention is given in these schools to human relations issues and innovation and adaptation to the environment. The image that emerges reveals a school in which student achievement is highly valued. Teachers and administrators' efforts seem to be directed at stimulating student learning. This is the prime responsibility of each staff member, and crucial in this respect is the relationship between teacher and student.

The third cluster contains 22 schools with a clear focus on innovation and adaptation. This emphasis on the open systems orientation distinguishes these schools from those in the other clusters. Teachers and administrators in these schools have a positive attitude towards change. Collaboration between staff members and mutual support is valued. The image that emerges depicts a school that is willing to adopt reforms, and meets the cultural conditions needed to implement these changes effectively. Furthermore, these schools are averse to values that belong to the internal process orientation. However, schools in this cluster also show a relatively low score on the rational goal orientation, which suggests that the primary purpose of educational change is not directly related to enhancing student achievement.

The fourth cluster consists of 10 schools which are oriented towards control. Schools from this cluster reveal relatively high scores on the internal process and rational goal orientations. On the other hand, the human relations and open systems orientations are relatively less valued. The image that emerges from these findings is a school in which stability and predictability, as well as performance is valued. As such, this cluster can be considered to be the antipode to the third cluster with its flexible orientation.

The fifth cluster consists of five schools characterized by a strong emphasis on values that reflect the human relations and rational goal orientations. Schools from this cluster value a helping attitude of staff members in combination with a strong emphasis on performance. Strikingly, this cluster shows positive values for mean scores on each of the clusters, although this value is close to zero for the internal process model. It, nevertheless, indicates that organizational values from each of the four orientations are in general considered more important than in other clusters.

### *5.4.1 Cultural profiles of schools and denomination*

A Chi-square analysis revealed that a close relationship between denomination and cluster membership exists ($\chi^2 = 37.93$, d.f. = 12, $p = 0.00$). A further analysis of the distribution

of denominations over the five clusters indicated diverse patterns for each of the denominations (Table 5.7). Public schools are found in the first and third cluster, although they are clearly overrepresented in the third. Similarly, Protestant schools are mainly found in the first cluster, with a few schools in the second and fourth cluster.

*Table 5.7 Relationship between cultural profiles and denomination of schools*

| | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 |
|---|---|---|---|---|---|
| Public | 6 | - | 13 | - | - |
| Catholic | 4 | 8 | 3 | 5 | 3 |
| Protestant | 7 | 1 | - | 2 | - |
| Other denominations | 2 | 2 | 6 | 3 | 2 |
| *Total* | *19* | *11* | *22* | *10* | *5* |

Catholic schools, on the other hand, are spread over all clusters, with a relative peak in the second one. The same applies to schools with other denominations, which are also spread over the diverse clusters. The dispersion of these over the five clusters was more or less expected, as these schools have a diversity of backgrounds. For Catholic schools, however, this finding is less obvious. It indicates that the profile of these schools is much more diverse, and probably less influenced by its denominational status, than that of public and Protestant schools.

### *5.4.2 Cultural profiles of schools and school size*

In order to test whether the clusters were related to school size, a Chi-square analysis was performed.

*Table 5.8 Relationship between cultural profiles and school size*

| | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 |
|---|---|---|---|---|---|
| Less than 250 students | 5 | 3 | - | - | - |
| 250 to 500 students | 6 | 3 | 4 | 4 | 3 |
| 500 to 750 students | 3 | 1 | 9 | 2 | - |
| 750 to 1,000 students | 2 | 1 | 5 | 2 | 1 |
| 1,000 to 1,250 students | 2 | 2 | - | 2 | - |
| 1,250 to 1,500 students | 1 | 1 | 1 | - | - |
| More than 1,500 students | - | - | 3 | - | 1 |
| *Total* | *19* | *11* | *22* | *10* | *5* |

This analysis revealed no significant relationship between denomination and cluster membership ($\chi^2 = 32.25$, d.f. = 24, $p = 0.12$). As Table 5.8 reveals, each of the clusters consists of schools of different size.

## 5.5 Discussion and conclusions

Our analysis of the cultural orientation of Dutch secondary schools revealed relatively high scores for the human relations, rational goal and, to a lesser degree, internal process orientations. The values associated with the open systems orientation were valued less by teachers and school administrators in secondary education.

It is, however, difficult to interpret these results from a comparative point of view. For instance, these results do not mean that schools are more people oriented than innovation oriented. After all, other types of organizations may score even higher on the human relations orientation and even lower on the open systems orientation. In order to interpret the mean scores of secondary schools on these four orientations, comparative research in other organizations is needed, using the same instrument. This may result in benchmark measures against which the outcomes of this study can be judged.

Bearing this caution in mind, a comparison with other studies of educational organizations, which used the same framework to diagnose culture, may, nevertheless, indicate some characteristic cultural features of secondary schools. Zammuto and Krakower (1991) report a study of 332 four-year colleges and universities in the United States (see also, e.g., Smart & St. John, 1996). They report figures for each of the culture orientations, further specified according to the denomination of the institutions, i.e. public, independent or religious. They found that public institutions were characterized by high scores on either the human relations or the internal process orientation. Independent and religious institutions, on the other hand, were best characterized by a strong human relations orientation. Compared to these findings, our study reports a similar emphasis on both the human relations and internal process orientation for the participating schools. In contrast to the findings in higher education, however, our study revealed stronger values for the rational goal orientation.

Houtveen *et al.* (1996) studied the organizational culture of primary schools in the Netherlands. They classified schools as team oriented, growth oriented, achievement oriented or a combination of these orientations.[4] They found that about one third of the primary schools relied strongly on only one of the three culture orientations. Of these schools, a majority exhibited a team orientation. To a lesser degree, a growth orientation was found to be representative for schools. An achievement orientation, which reflected

both the rational goal and internal process orientation in Houtveen's study, was found to be less influential. About ten percent of the primary schools were identified as reflecting a 'pure' achievement orientation. The classification of the 'combined orientations' revealed similar outcomes. About 20 percent of the schools were characterized by combined team and growth orientation; only 5 percent for a combined team and achievement orientation, while about 7 percent were characterized by a growth and achievement orientation. These results suggest that primary schools are more oriented towards open systems values than secondary schools. Furthermore, secondary schools seem to give more attention to performance and continuity than primary schools in the Netherlands.

Comparing these studies with primary and higher education, suggests that secondary schools may be more directed towards the rational goal orientation, emphasizing performance, the pursuit of the school's objectives and efficacy. When compared with Houtveen's study, the results also suggest that secondary schools may be less susceptible to change and innovation than primary schools.

The study of Zammuto and Krakower (1991) indicates that cultural differences may be related to the denomination of an organization. Our study confirms this for secondary education. It should be noted, however, that with regard to the character of public and private schools large differences between the US and the Netherlands exist. Therefore, no substantial conclusions are to be drawn from this comparison. Nevertheless, it indicates that denomination probably has an impact on the culture of schools, and seems to be a characteristic that should be further examined in future research, in relation to cultural orientations of schools as well as in relation to cultural profiles.

In our study, we identified five profiles of school cultures. As is clear from Table 5.6, the absolute ratings on each of dimensions revealed no large differences between the clusters. This finding is in contrast with the findings of Zammuto and Krakower (1991), who identified 11 cultural profiles, which differ considerably with respect to the four dimensions. Similarly, Van Muijen, Koopman and De Witte (1996) found several cultural profiles of business organizations, of which four were prominent. Two of these profiles simultaneously emphasize an innovation and a rule orientation, or a support and a goal orientation, one profile is innovation oriented, and one profile emphasizes the four culture dimensions more or less equally. As business organizations are certainly more diverse than secondary schools, these differences in profiles may come as no surprise. The different profiles found by Zammuto and Krakower, on the other hand, indicate either that higher education institutions in the US are much more diverse than Dutch secondary schools, or that the questionnaire used by Zammuto and Krakower was more sensitive to small differences between institutions.

In order to determine the differences in cultural profiles, the relative ratings of

each cluster on the four orientations were used. These relative ratings indicated that each of the clusters has some distinctive cultural features. In his study of organizational cultures of secondary schools in Hong Kong, Pang (1998) used a similar approach to classify each of the schools in his study. Although Pang did not group these schools into profiles, his graphical representation of these schools indicates that such an endeavor would be worthwhile, as a number of schools show similar patterns on the four variables he studied. Our study revealed that a cluster analysis, in order to group schools according to their cultural profiles, certainly generates promising results. Further research into school cultures should pay more attention to this issue.

# Chapter 6
# School Culture and School Performance

## 6.1 Introduction

The organizational culture of a school is often associated with its performance. Deal and Kennedy (1983) argue, for example, appealing to school that a strong culture is essential for enhancing student achievement. Principals, in their view, need to become symbolic leaders who are sensitive to the culture of the school. This popular contention concerning the effect of culture is supported, to some degree, by a number of empirical studies. The research on effective schools, for instance, has identified several effectiveness enhancing factors, which can easily be interpreted in terms of a school's organizational culture (cf., Reynolds & Teddlie, 2000; Scheerens & Bosker, 1997). High expectations of achievement and frequent monitoring of student progress are pervaded with values of performance and productivity. An orderly school climate, on the other hand, refers to the importance of stability, continuity and consistency. An emphasis on rules prevents disruptions in school processes from taking place, thereby satisfying the necessary prerequisites for an orderly learning environment (e.g. Rutter, Maughan, Mortimore, Ouston & Smith, 1979).

From the school improvement tradition, a sense of community is claimed to enhance the effectiveness of schools. Hopkins, Ainscow and West (1994) assert that the culture of a school influences the collegial and collaborative activities, which foster better communication and problem-solving practices. In school cultures valuing collegiality and collaboration, it is argued, teachers will engage in an exchange of ideas, thereby enhancing

the diffusion of effective practices among other school members, and helping colleagues to solve the professional problems they face. School cultures may also enhance or interfere with successful change and improvement efforts (e.g. Leithwood, Jantzi & Fernandez, 1994; Sarason, 1982). Furthermore, schools may differ in their orientation towards change and innovation. A culture in which continuous improvement is valued will be more conducive to implementing improvements. Schools, therefore, will be better suited to adapt to the changing requirements of society.

In this chapter, the relationship between culture and performance is put to the test. For this purpose, two performance indicators of schools are taken into account, namely the mean examination scores of students and the mean promotion rates in upper secondary school. These performance measures are related to the dimensions of culture and the cultural profiles of schools. In Section 6.3, the relationship between these cultural features and student achievement is examined. Subsequently, in Section 6.4, school culture is related to the promotion rates of schools. The results of these analyses are preceded by an analysis of the stability and consistency of the performance measures, and a discussion of the type of analysis employed for examining the relationship between culture and performance. The chapter concludes with a discussion of the outcomes.

## 6.2 Composition of the Performance Measures

In this study, mean examination scores of students and mean promotion rates in upper secondary school were used as measures of school performance. These measures were taken from the performance data made available by the Dutch Inspectorate of Education for all secondary schools in the Netherlands.

The measure of *student achievement* is based on students' national examination results. These consist of subject specific standardized tests for the VBO, MAVO, HAVO and VWO school tracks. The student achievement measure includes all subjects examined. For each school, student participation in the national examinations varies across subjects. Some subjects are chosen by large numbers of students, whereas other subjects are chosen by just a few. To avoid an unfair comparison between schools (and school locations), a weighted mean score for all subjects based on the number of students was computed.

The *promotion rate* in upper secondary school is an estimate of the probability that students will be promoted to the next grade. This probability is computed by averaging the actual promotion rates in the upper grades for each school.

Both mean student achievement and mean promotion rates in upper secondary

school are determined for each school and track separately. For the analyses, the performance measures were averaged over three subsequent years (1997 to 1999). The descriptive statistics of the separate scores for each of the years and the composite scores over these three years are shown in Table 6.1 and 6.2.

*Table 6.1 Descriptive statistics of the 'gross' examination scores for each of the school tracks*

| | | *n* | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|
| VBO | 1997 | - | - | - | - | - |
| | 1998 | 27 | 6.25 | .33 | 5.48 | 6.87 |
| | 1999 | 23 | 6.38 | .30 | 5.84 | 6.95 |
| | Mean 1997-1999 | 27 | 6.31 | .29 | 5.68 | 6.86 |
| MAVO | 1997 | 44 | 6.61 | .23 | 6.10 | 7.01 |
| | 1998 | 44 | 6.41 | .27 | 5.82 | 7.19 |
| | 1999 | 43 | 6.43 | .32 | 5.89 | 7.39 |
| | Mean 1997-1999 | 45 | 6.49 | .25 | 5.95 | 7.02 |
| HAVO | 1997 | 27 | 6.37 | .17 | 6.01 | 6.78 |
| | 1998 | 28 | 6.19 | .17 | 5.73 | 6.46 |
| | 1999 | 28 | 6.33 | .18 | 5.97 | 6.65 |
| | Mean 1997-1999 | 28 | 6.29 | .15 | 6.00 | 6.55 |
| VWO | 1997 | 28 | 6.46 | .19 | 6.03 | 6.74 |
| | 1998 | 28 | 6.43 | .20 | 6.04 | 6.95 |
| | 1999 | 28 | 6.45 | .19 | 5.91 | 6.81 |
| | Mean 1997-1999 | 29 | 6.43 | .18 | 5.91 | 6.80 |

These mean scores were controlled for the student population. For this purpose, the percentage of ethnic minority students and students receiving grants for their schooling costs were used as covariates. For the VBO track, the number of IVBO students was also used as a covariate. IVBO represents a further differentiation within the VBO track, which is more practically oriented. In the IVBO track students work in small groups, so that teachers are able to pay more attention to the needs of individual students. Furthermore, in the first and second grade, additional remedial help is offered to the students who have difficulties in reading and arithmetic.

A further analysis of the covariates showed that the percentage of students receiving grants for their schooling (an indicator for low socio-economic status) had little explanatory power in combination with the percentage of ethnic minority students.[1] For this reason, these students were removed as covariate from the analyses.

*Table 6.2 Descriptive statistics of the promotion rates for each of the school tracks*

| | | N | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|
| VBO | 1997 | 24 | 91.90 | 5.14 | 78.51 | 100.00 |
| | 1998 | 26 | 92.19 | 5.05 | 78.29 | 100.00 |
| | 1999 | 24 | 92.44 | 5.96 | 76.88 | 100.00 |
| | Mean 1997-1999 | 27 | 91.75 | 5.51 | 76.88 | 99.80 |
| MAVO | 1997 | 44 | 92.04 | 5.13 | 69.55 | 98.06 |
| | 1998 | 44 | 91.10 | 6.37 | 60.92 | 99.43 |
| | 1999 | 43 | 92.08 | 5.54 | 76.46 | 100.00 |
| | Mean 1997-1999 | 46 | 91.82 | 4.30 | 75.24 | 98.40 |
| HAVO | 1997 | 27 | 81.80 | 4.48 | 73.61 | 89.46 |
| | 1998 | 28 | 81.77 | 4.31 | 68.97 | 89.35 |
| | 1999 | 28 | 82.74 | 4.58 | 72.15 | 92.17 |
| | Mean 1997-1999 | 28 | 82.08 | 3.53 | 75.73 | 87.38 |
| VWO | 1997 | 28 | 86.15 | 4.52 | 74.91 | 94.86 |
| | 1998 | 27 | 87.26 | 4.00 | 78.87 | 94.47 |
| | 1999 | 28 | 87.95 | 4.61 | 73.74 | 94.83 |
| | Mean 1997-1999 | 29 | 87.04 | 3.46 | 78.99 | 94.47 |

Rekers-Mombarg, Lodewick and Bosker (2000) explored the accuracy of controlling performance measures for the percentage of ethnic minority students at school level. Their analysis for HAVO students revealed that of the four covariates taken into account, the percentage of ethnic minorities appeared to be the only significant factor. Furthermore, the effect of the percentage of cultural minorities surpassed the effect of the other covariates by far.[2] Rekers-Mombarg *et al.* (2000) further examined the compatibility of this type of school level analysis with a multilevel analysis based on data from individual students. This revealed that the outcomes of both analyses were highly correlated.[3]

The estimates for the 'percentage of ethnic minorities' are shown for each of the school tracks in Table 6.3, regarding their effects on the mean examination scores, and in Table 6.4, regarding their effects on the mean promotion rates of schools. As Table 6.3 indicates, the percentage of ethnic minority students was related to student achievement for MAVO, HAVO and VWO. For VBO no relationship between ethnic minority and achievement was found. The negative sign for each of the values indicates that a higher percentage of ethnic minorities will result in lower mean examination scores. For instance, a school with ten per cent of cultural minority HAVO students is expected to exhibit a mean examination score that is 0.57 beneath the mean examination score of a school

with no ethnic minority students.

No relationship was found between the percentage of IVBO students and the mean examination scores of VBO schools.

*Table 6.3 Multivariate analysis of student achievement controlled for student intake (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 6.242 (.087) | 6.557 (.037) | 6.430 (.029) | 6.531 (.046) |
| Percentage of Cultural Minority students | - .002 (.007) | - .012 (.004) | - .057 (.009) | - .046 (.019) |
| Percentage IVBO students | .003 (.003) | - | - | - |
| Residual variance | .089 (.022) | .048 (.010) | .011 (.003) | 0.031 (.008) |

The standard error (SE) for each of the estimates is specified between brackets.

As Table 6.4 shows, an effect from the percentage of IVBO students on performance was found for the mean promotion rates in upper secondary school. Table 6.4 also indicates that the percentage of ethnic minority students was significantly related to promotion rates for MAVO and HAVO schools. At these schools, a higher percentage of ethnic minorities was related to lower promotion rates. This effect was of moderate size for HAVO. An increase of one percent of cultural minorities is related to a decrease in the mean promotion rate of nearly one percent. For MAVO, this effect is considerably smaller. For VBO and VWO no relationship between the percentage of ethnic minorities at school and promotion rates was found.

The figures presented in Table 6.3 and 6.4 served as the baseline model for analyzing the relationship between culture and performance, which are presented in Section 6.3 and 6.4. A multivariate model was employed to analyze the effects of the culture variables on the performance indicators for each of the school tracks simultaneously (cf., Snijders & Bosker, 1999).

To determine the reliability of the performance measures used in this study, the stability of student achievement and school promotion rates was examined. As the correlation matrix in Table 6.5 indicates, the mean examination scores of schools correlate significantly for each of the tracks with the examination scores of the previous year, ranging from 0.50 to 0.81.

*Table 6.4 Multivariate analysis for promotion rate controlled for student intake (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 88.34 (1.17) | 93.14 (.60) | 84.62 (.91) | 87.77 (.62) |
| Percentage of Cultural Minority students | .065 (.106) | - .269 (.064) | - .839 (.293) | - .041 (.231) |
| Percentage IVBO students | .106 (.027) | - | - | - |
| Residual variance | 35.28 (7.32) | 12.85 (2.67) | 8.87 (2.36) | 11.76 (2.44) |

The standard error (SE) for each of the estimates is specified between brackets.

Over a two-year interval, only moderate figures were found, ranging from 0.25 to 0.55. These findings indicate that student achievement is rather stable over a short period of time, but becomes less so when examined over several years. The findings, therefore, confirm our notion that student achievement is a reliable measure of school performance – based on the relatively high inter-year correlations. On the other hand, the findings indicate that over a longer period of time student achievement scores of schools may change, which justifies a composite measure that includes three subsequent years.

As Table 6.6 indicates, the inter-year correlations for promotion rates show a similar pattern. The mean promotion rates are relatively constant over several years, although they are of a more moderate magnitude, ranging from 0.16 to 0.88. In general, the stability over a two-year interval for mean promotion rates is smaller than the stability from year-to-year. Therefore, our conclusions with regard to the reliability of the student achievement measure also apply to the mean promotion rates in upper secondary school.

In order to explore the validity of the school performance measure, the relationship between mean student achievement scores and mean promotion rates was also analyzed for each of the school tracks.

For VBO (n = 25) no significant relationship was found between the mean examination scores of schools and their mean promotion rates ($r = 0.04$) (see Figure 6.1). This can be explained by including IVBO in these data, since this track offers students individual instruction. There are no formalized standards students have to reach by the end of their school career so they are always promoted to the next grade.

*Table 6.5* *Correlation matrix of mean examination scores for each of the school types over three subsequent years*

| | | VBO | | | MAVO | | | HAVO | | | VWO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1997[1] | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| VBO | 1997 | - | | | | | | | | | | | |
| | 1998 | - | 1.00 | | | | | | | | | | |
| | 1999 | - | .81 ** | 1.00 | | | | | | | | | |
| MAVO | 1997 | - | *.34* | *.34* | 1.00 | | | | | | | | |
| | 1998 | - | *.12* | *.34* | .67 ** | 1.00 | | | | | | | |
| | 1999 | - | *.14* | *.31* | .55 ** | .76 ** | 1.00 | | | | | | |
| HAVO | 1997 | - | *-.88 ** | *-.76* | *.28* | *.38* | *.48 ** | 1.00 | | | | | |
| | 1998 | - | *.35* | *.32* | *.34* | *.66 ** | *.74 ** | .67 ** | 1.00 | | | | |
| | 1999 | - | *.73* | *.62* | *.28* | *.46 ** | *.55 ** | .25 | .54 ** | 1.00 | | | |
| VWO | 1997 | - | *.84 ** | *.77* | *.28* | *.39* | *.35* | *.33* | *.41 ** | *.45 ** | 1.00 | | |
| | 1998 | - | *.50* | *.32* | *.12* | *.06* | *.12* | *.17* | *.05* | *.55 ** | .50 ** | 1.00 | |
| | 1999 | - | *.04* | *.03* | *.15* | *.35* | *.45 ** | *.19* | *.32* | *.67 ** | .37 | .58 ** | 1.00 |

** Correlation is significant at the 0.01 level (2 tailed)
* Correlation is significant at the 0.05 level (2 tailed)

[1] For VBO no examination scores were available for 1997

*Table 6.6* *Correlation matrix of mean promotion rates for each of the school types over three subsequent years*

| | | VBO | | | MAVO | | | HAVO | | | VWO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 | 1997 | 1998 | 1999 |
| VBO | 1997 | 1.00 | | | | | | | | | | | |
| | 1998 | .78 ** | 1.00 | | | | | | | | | | |
| | 1999 | .84 ** | .88 ** | 1.00 | | | | | | | | | |
| MAVO | 1997 | *.17* | *.22* | *.06* | 1.00 | | | | | | | | |
| | 1998 | *.50* | *.37* | *.08* | .84 ** | 1.00 | | | | | | | |
| | 1999 | *.68* * | *.60* * | *.31* | .16 | .16 | 1.00 | | | | | | |
| HAVO | 1997 | *.64* | *.26* | *-.01* | *.06* | *.33* | *.29* | 1.00 | | | | | |
| | 1998 | *.35* | *.50* | *.29* | *.14* | *.21* | *.35* | .52 ** | 1.00 | | | | |
| | 1999 | *.21* | *.44* | *.42* | *-.03* | *.00* | *.66* ** | .39 * | .44 * | 1.00 | | | |
| VWO | 1997 | *.63* | *.35* | *.32* | *-.06* | *.30* | *.11* | *.48* * | *.12* | *.19* | 1.00 | | |
| | 1998 | *.73* | *.92* * | *.99* ** | *.07* | *.34* | *.44* | *.38* | *.42* * | *.40* * | .39 * | 1.00 | |
| | 1999 | *.84* | *.99* ** | *.97* ** | *.39* | *.52* * | *.72* ** | *.28* | *.34* | *.39* * | .34 | .66 ** | 1.00 |

** Correlation is significant at the 0.01 level (2 tailed)
* Correlation is significant at the 0.05 level (2 tailed)

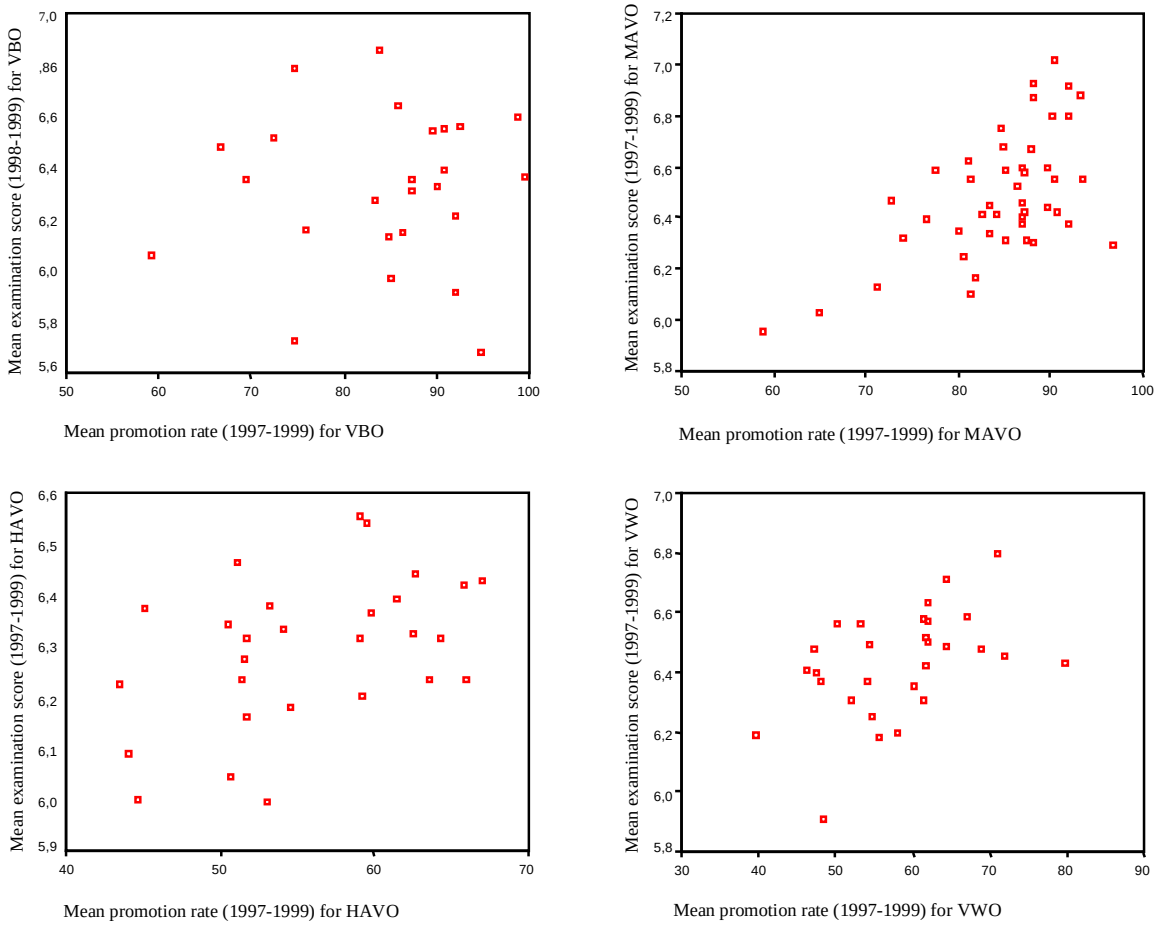


*Figure 6.1* *Relationship between mean examination scores and mean promotion rates (1997-1999) for school tracks*

For MAVO ($n$ = 45), a significant relationship between the mean examination scores and promotion rates was found ($r$ = 0.59, $p$ < .01). The analyses for HAVO ($n$ = 28) and VWO ($n$ = 29) also revealed significant correlations between the two performance measures ($r$ = 0.46, $p$ < .05 and $r$ = 0.48, $p$ < .01, respectively).

These findings indicate that student achievement and promotion rates are positively related, thereby confirming the validity of school performance as a construct. On the other hand, the correlation between these two indicators is not as large as to justify only one performance measure. Therefore, the correlations show that we dealing with a meaningful concept with several dimensions or aspects that need to be addressed. Conceptually, student achievement scores refer to school effectiveness, whereas promotion rates are considered a measure of school efficiency.

## 6.3 Relationship between school culture and student achievement

As noted before, schools' cultural features are often associated with student achievement. Based on the findings of earlier studies, a number of hypotheses were formulated that reflect the nature of this relationship (see Chapter 1). These hypotheses express that each of the cultural dimensions is positively related to student achievement. To test these hypotheses, the four cultural dimensions were entered in our model. This enlarged model did not appear to fit the data better than the baseline model, in which only the intercepts, the percentage of ethnic minority students and the percentage of IVBO students were estimated ($\chi^2 = 3.22$, d.f. = 4, p = 0.52).

*Table 6.7 Multivariate analysis for student achievement and cultural dimensions of secondary schools (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 6.777 (.812) | 7.089 (.805) | 6.968 (.805) | 7.068 (.803) |
| Percentage of Cultural Minority students | - .002 (.007) | - .012 (.004) | - .055 (.010) | - .043 (.020) |
| Percentage IVBO students | .003 (.003) | - | - | - |
| Human Relations model | | - .026 (.120) | | |
| Open Systems model | | - .108 (.083) | | |
| Internal Process model | | .009 (.132) | | |
| Rational Goal model | | - .042 (.087) | | |
| Residual variance | .088 (.022) | .049 (.010) | .011 (.003) | 0.032 (.008) |
| Variance accounted for by culture variables | 1 % | 0 % | 0 % | 0 % |

The generated values refer to the parameter estimates for the subsequent variables in the multivariate model. The standard error (SE) of each parameter estimate is specified between brackets. Because the effect of the school clusters as an explanatory variable for the promotion rate is estimated for all school types simultaneously, only one parameter estimate (and its standard error) is specified.

Residual correlations between the school types: VBO-MAVO (.24), VBO-HAVO (- .08), VBO-VWO (.80), MAVO-HAVO (.58), MAVO-VWO (.39) and HAVO-VWO (.30).

A closer examination of the results revealed no significant relationship between any of

the four cultural dimensions and student achievement (see Table 6.7). Based on these findings, the hypotheses were rejected which stated that more emphasis on values linked to the rational goal, internal process, human relations and open systems orientation is related to higher student achievement.

In Chapter 2, following Quinn's (1988) theory, we argued that certain cultural profiles might be related to student achievement. In order to explore this suggestion, the five cultural clusters of schools identified in Chapter 5 were entered in our model. This enlarged model, however, did not better fit the data than the baseline model ($\chi^2 = 4.70$, d.f. = 4, $p = 0.32$). Despite this lack of fit, the effect of the clusters on student achievement was further examined for each of the tracks. For this purpose, the mean student achievement scores were analyzed for each of the clusters. This revealed that student achievement was highest for schools in the first cluster, whereas it was the lowest in the third. Subsequently, the first cluster was chosen as our point of reference.

Compared to the first cluster, no significant differences were found for the second, fourth and fifth cluster (see Table 6.8). The mean student achievement scores of schools in the third cluster, however, were significantly lower than in schools belonging to the first cluster. As the results in Table 6.8 show, schools in the third cluster have student achievement scores that are, on average, about 0.09 below the scores of schools in the first. This is a substantive difference, as the effect sizes of 0.29 for VBO, 0.39 for MAVO, 0.83 for HAVO, and 0.52 for VWO indicate.

In search for an explanation, the cultural profiles of the first and third cluster were examined. Schools from the first cluster can be characterized as quite internally oriented. On average, these schools score high on values belonging to the human relations and internal process model. On the other hand, the scores of these schools are relatively low on the two dimensions concerned with the school's external aspects. Schools of the third cluster can be characterized by their orientation towards flexibility. In contrast with schools from the other four clusters, schools from the third cluster emphasize values like adaptability and innovation. Much emphasis is also placed on values belonging to the human relations model, whereas relatively low scores were found for values from the internal process and rational goal models.

A further analysis revealed that no significant difference in achievement scores was found for the third cluster in comparison with the second, fourth and fifth cluster. This implies that neither the flexible orientation of schools in the third cluster, nor their emphasis on innovation offers a sufficient explanation for the relatively low student achievement scores. After all, an explanation solely focused on flexibility versus control would imply significant differences between schools from the third and fourth clusters

would have emerged. On the other hand, the internal orientation of schools from the first cluster is also inappropriate as solely explaining the positive effect on student achievement. Schools from the second cluster, for instance, score relatively low on the human relations and internal process model which constitute the internal orientation of the first cluster. Besides, schools from the second cluster score considerably lower on these aspects than schools from the third cluster (see Figure 5.1).

*Table 6.8 Multivariate analysis for student achievement and cultural clusters of secondary schools (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 6.278 (.092) | 6.586 (.046) | 6.473 (.040) | 6.569 (.051) |
| Percentage of Cultural Minority students | .000 (.007) | - .011 (.004) | - .056 (.010) | - .042 (.018) |
| Percentage IVBO students | .003 (.003) | - | - | - |
| School Culture cluster 2 | | - .023 (.053) | | |
| School Culture cluster 3 | | - .087 (.042) | | |
| School Culture cluster 4 | | - .027 (.061) | | |
| School Culture cluster 5 | | - .027 (.071) | | |
| Residual variance | .091 (.022) | .050 (.010) | .011 (.003) | 0.028 (.007) |
| Variance accounted for by cluster variables | 0 % | 0 % | 0 % | 10 % |

The generated values refer to the parameter estimates for the subsequent variables in the multivariate model. The standard error (SE) of each parameter estimate is specified between brackets. Because the effect of the school clusters as an explanatory variable for the promotion rate is estimated for all school types simultaneously, only one parameter estimate (and its standard error) is specified.

Residual correlations between the school types: VBO-MAVO (.21), VBO-HAVO (- .29), VBO-VWO (.75), MAVO-HAVO (.55), MAVO-VWO (.40) and HAVO-VWO (.23).

The findings on the relationship between the cultural dimensions and student achievement show that these differences cannot be attributed to specific dimensions. Therefore, the difference in student achievement is most likely to be a combination of these two cultural orientations. On the one hand, schools with an internal orientation are more likely to have high achievement scores; on the other, schools with a flexible orientation

are more likely to have lower achievement scores.

The relationship between the internal orientation of schools and student achievement suggests that schools which are tightly organized are likely to perform better as these schools will probably have a number of rules that prevent disruptions to the school process. The relatively high score on the human relations orientation suggests that if problems occur school members collaborate to solve these in order to restore stability in school. In terms of school effectiveness research, this school is likely to offer an orderly learning environment.

On the other hand, a school that is flexibly oriented will focus on how to adapt to new circumstances. This may lead to regular change which might imply that the educational process in these schools is constantly 'in transition'. The emphasis on the helping attitude of teachers and other school personnel may take a different form than in schools from the first cluster. In the third cluster, these attitudes are more likely to be directed towards problem solving with regard to these innovations. This would imply that a collaborative culture is only appropriate when it is directed towards the solving of disturbances in the primary process. Noteworthy, in view of the variance accounted for, this phenomenon seems to be restricted to the VWO track. For other tracks no variance was accounted for by cultural profiles.

## 6.4 Relationship between school culture and school promotion rates

In this paragraph, we explore whether a relationship exists between school culture and the mean promotion rates in upper secondary school over the years 1997-1999.

First, the relationship between the four cultural dimensions and the promotion rates was analyzed. The enlarged model, in which these cultural dimensions were added, appeared to fit the data better than the baseline model ($\chi^2 = 13.82$, d.f. = 4, $p = 0.01$). A closer examination of the results revealed significant strong effects for both the internal process and rational goal models on promotion rates (see Table 6.9). Each increase of one point on the internal process dimension was related to a decrease of over 8 percent in retention rate, while other factors remained constant. Similarly, each increase of one point on the rational goal scale was related to a decrease of nearly 6 percent in retention rate. Related to the effect sizes of 0.53 and 0.48 for VBO, 0.89 and 0.80 for MAVO, 1.26 and 1.12 for HAVO, 1.02 and 0.92 for VWO, these are substantive effects.

*Table 6.9 Multivariate analysis of promotion rates and cultural dimensions of secondary schools (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 28.44 (16.31) | 32.94 (16.33) | 24.70 (16.33) | 28.01 (16.30) |
| Percentage of Cultural Minority students | .087 (.103) | - .200 (.066) | - .781 (.279) | - .125 (.231) |
| Percentage IVBO students | .116 (.027) | - | - | - |
| Human Relations model | | 4.30 (2.23) | | |
| Open Systems model | | 3.28 (1.73) | | |
| Internal Process model | | 8.04 (2.67) | | |
| Rational Goal model | | 5.56 (1.73) | | |
| Residual variance | 32.24 (6.72) | 12.78 (2.66) | 7.36 (1.97) | 10.19 (2.12) |
| Variance accounted for by culture variables | 9 % | 0 % | 17 % | 13 % |

The generated values refer to the parameter estimates for the subsequent variables in the multivariate model. The standard error (SE) of each parameter estimate is specified between brackets. Because the effect of the school clusters as an explanatory variable for the promotion rate is estimated for all school types simultaneously, only one parameter estimate (and its standard error) is specified.

Residual correlations between the school types: VBO-MAVO (.33), VBO-HAVO (.22), VBO-VWO (.98), MAVO-HAVO (.24), MAVO-VWO (.42) and HAVO-VWO (.32).

An explanation for this effect might be found in schools' rule orientation. From our conceptual framework, it was argued that this results in an orderly, predictable school environment. On the other hand, it may also indicate that students are likely to be corrected if they violate any rule. This 'restrictive' policy may result in a smaller number of dropouts as well.

The rational goal model emphasizes student performance. This may serve as a stimulus for students to reach high scores. High student scores obviously results in the promotion of these students. On the other hand, in the previous analysis no manifest effect was found between the rational goal orientation and student achievement. This indicates that this 'objective explanation' is not likely to account fully for the differences in promotion rates found.

*Table 6.10 Parameter estimates for the multivariate model of promotion rates with cultural clusters of secondary schools as an explanatory variable (RIGLS)*

| | VBO | MAVO | HAVO | VWO |
|---|---|---|---|---|
| Intercept | 88.38 (1.28) | 92.21 (0.85) | 83.94 (1.14) | 87.30 (0.88) |
| Percentage of Cultural Minority students | .051 (.106) | - .242 (.067) | - .809 (.309) | - .199 (.239) |
| Percentage IVBO students | .051 (.106) | - | - | - |
| School Culture cluster 2 | | .07 (1.19) | | |
| School Culture cluster 3 | | .33 (0.95) | | |
| School Culture cluster 4 | | 3.73 (1.32) | | |
| School Culture cluster 5 | | 2.48 (1.44) | | |
| Residual variance | 28.94 (6.13) | 13.32 (2.78) | 9.64 (2.58) | 9.24 (1.98) |
| Variance accounted for by cluster variables | 18 % | 0 % | 0 % | 22 % |

The generated values refer to the parameter estimates for the subsequent variables in the multivariate model. The standard error (SE) of each parameter estimate is specified between brackets. Because the effect of the school clusters as an explanatory variable for the promotion rate is estimated for all school types simultaneously, only one parameter estimate (and its standard error) is specified.

Residual correlations between the school types: VBO-MAVO (.28), VBO-HAVO (.19), VBO-VWO (.96), MAVO-HAVO (.25), MAVO-VWO (.39) and HAVO-VWO (.36).

Another more 'subjective' explanation is that teachers who value performance are more inclined towards promoting students. Whether students are promoted, is only to some extent based on their performance. For students who perform around or below the criteria for promotion, teachers will decide whether it is advisable to promote them to the next grade or not. This decision will probably be influenced to a great extent by whether teachers think promotion or retention is likely to be for the student's benefit. Therefore, it can be argued that the found relationship is to some degree 'tautological'. On the other hand, the relatively small number of students who perform around the promotion criteria cannot fully account for the difference found between schools. Both explanations, therefore, will account for the differences in promotion rates.

The relationship between the cultural clusters of schools and the promotion rates

in upper secondary school was then analyzed. For this purpose, the mean promotion rates over the years 1997-1999 were examined for each of the clusters. This examination revealed that schools from the first cluster had the lowest promotion rates, on average, while schools from the fourth cluster had the highest promotion rates, on average. In order to analyze the effects of cluster membership on the promotion rates, the first cluster was chosen as point of reference.[1] The model in which the other clusters were entered proved to fit the data better than our baseline model ($\chi^2 = 8.26$, d.f. = 4, p = 0.08).

In comparison to the first cluster, no significant differences were found for the second, third and fifth cluster (see Table 6.10). The mean promotion rates in schools belonging to the fourth cluster, however, were found to be significantly higher than those of schools from the first cluster. Schools from the fourth cluster showed a promotion rate that was 6.5 percent higher, on average, than the promotion rates of schools from the first. A further analysis showed that schools from the fourth cluster had significantly higher promotion rates than those of the second and third clusters.

In trying to explain these differences, the profile of schools from the fourth cluster was compared to that of the first, second and third cluster. Schools from the fourth cluster can be characterized by their focus on control. In these schools, values like solidarity and helpfulness as well as innovation and adaptability are less valued, on average, than schools from other clusters. On the other hand, values like effectiveness and efficiency as well as stability and consistency are thought of as more important than in (most of the) schools from the other clusters. This valuing of high performance and achievement may indicate the pursuit of promoting students to the next grade. Combined with a major emphasis on rules and a minor one on human relations, this suggests that these schools apply rules strictly, and that teachers are not inclined to think in terms of what might be best for the individual student.

A more compelling explanation for the remarkable promotion rates of the fourth cluster is to be found in the relative scores of its schools on the internal process and rational goal orientation. Figure 5.1, based on the z-scores of each cluster for the four dimensions, reveals that the scores on the rational goal orientation for schools from the fourth cluster surpass those of schools from the first. The values on the rational goal orientation of schools from the second cluster are also much higher than in schools from the first, but schools from the second cluster show values for the internal process orientation far below those of the first cluster.

To sum up, the reliance of the fourth cluster on both internal process and rational goal values seems to be the most plausible explanation for the effect on promotion rates. This 'reliance hypothesis' is further strengthened by the fact that the 'cluster model'

proved to fit the data less than the 'dimensions model', indicating that cultural dimensions are better predictors for the promotion rates of schools than cultural profiles.

## 6.5 Discussion and conclusions

In this chapter, we focused on the relationship between school culture and school performance. For this purpose, two performance measures were taken into account: mean examination scores of students and mean promotion rates in upper secondary school.

The results indicated no relationship between student achievement and a school's cultural dimensions. This contradicts existing research on school effects which suggests a relationship between examination scores and a school's internal process and rational goal orientation. These outcomes are also in contrast to the findings of many school improvement studies which suggest a relationship between student achievement and teacher collaboration and a change orientation. A negative effect, however, on student achievement was found for schools with a flexible orientation, in contrast to schools with an internal orientation. This suggests that the notion of collaboration in schools, in relation to performance needs further refining.

Furthermore, our analysis revealed the internal process and rational goal orientations had a strong effect on the mean promotion rates. Similarly, the cultural profile that reflects these two orientations appeared to have higher promotion rates than three of the four remaining profiles. Based on these findings, certain conclusions can be drawn regarding the concurrent perspectives of Quinn on effective organizations (see Chapter 2), and the empirical perspective derived from school effectiveness research (see Chapter 1).

The first perspective was based on Quinn's theory (1988), which argues that to be effective organizations need to address all four aspects of organizational functioning. Our analysis provided little confirmation for this perspective. For the relationship between student achievement and cultural profiles, only a negative effect for the third cluster was found. The lowest figure for the rational goal model and the highest value for the open systems model characterized this third cluster. This might indicate that schools in this cluster either pay too much attention to adaptation and flexibility, or place not enough emphasis on performance and productivity, or both. Taking the relative scores on these scales into account, the first explanation seems the most reasonable. Furthermore, it suggests that schools from the other four clusters can all be considered as relatively effective. This is a rather disappointing result, if we are mainly interested in 'levers' for changing schools in order to make them more effective.

The effect of profiles on promotion rates was further examined to see whether there was support for Quinn's theory of effectiveness. Schools from the fourth cluster are characterized by a relatively low emphasis on the human relations and open systems orientation, and by a relatively high emphasis on the internal process and rational goal orientation. A further analysis revealed that these schools had promotion rates that were significantly higher than those of schools from the first, second and third cluster. Following Quinn's theory, either schools from the first three clusters placed too much emphasis on the human relations and open systems orientations, or not enough on the other two orientations. The first explanation was rejected, as schools from the second cluster had virtually the same scores on the human relations and open systems orientations as schools from the fourth cluster. The second explanation holds well, as each of the first three clusters emphasized the internal process and/or the rational goal orientation less than schools from the fourth cluster.

On the other hand, from the school effectiveness tradition, it would be expected that a relationship between the rational goal model and student achievement would be found, yet in our study we did not find such a relationship. This may indicate that culture may not be an important underlying factor that theoretically underpins effectiveness research. Interestingly, however, a strong relationship was found for a school's mean promotion rates. This analysis pointed out a certain close relationship between the valuing of continuity and stability on the one hand, and performance and productivity on the other. This may indicate that aspects of order and monitoring certainly have a positive effect on promotion rates. It should be noted that the promotion rates, of course, are only to some degree dependent on actual learning gains. For instance, whether students graduate from high school is dependent on national examination and pre-examination test marks, of which the latter are school dependent. Furthermore, whether students are promoted in the pre-examination year(s) also depends on teachers' opinions, which are based, of course, on actual achievement but also to some degree on opinions about retention. This might indicate that some form of this partially 'subjective' performance, by definition, is dependent on teacher or school values.

A final note on the relationship between culture and effectiveness concerns causality. In research on school culture and performance, the organization's culture is implicitly or explicitly hypothesized to affect school effectiveness. Theoretically, the assumed linear relationship between culture and performance is questioned by a number of researchers. Schein (1992), for instance, has argued that certain values and norms develop or are strengthened through the successes of groups within the organization. Referring to the literature on group formation, he points out that the effectiveness of actions taken by organization members shapes the members' values and norms which become elements of

the organizational culture. This implies that the performance of an organization influences its culture, or, in fact, that the relationship between culture and performance is recursive instead of linear. For this reason, Siehl and Martin (1990) have argued that we are in need of more longitudinal studies in which both culture and performance are measured over a period of years. Denison and Mishra (1995) and many others second this, adding that longitudinal research should be accompanied by in-depth measures of culture in order to contribute to our understanding of the relationship between culture and performance.

# Chapter 7
# Summary and Conclusions

## 7.1 Objective of the Study

The effect of schooling has been one of the enduring themes in educational research over the past decades. Coleman's study on equality of educational opportunity in the United States, and Jencks's reanalyses of several studies on inequality are commonly conceived as the starting point of what became later known as school effectiveness research. Critics of the Coleman and Jencks studies emphasized that both studies mainly dealt with the effect of material school characteristics, while the effect of educational variables like teacher behavior and organizational processes hardly received attention (e.g., Averch, Carroll, Donaldson, Kiesling & Pincus, 1974; Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Rutter, Maughan, Mortimore, Ouston & Smith, 1979). Consequently, in the late seventies the focus of school effectiveness studies shifted towards characteristics related to the organization, form and content of schooling (Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Rutter, Maughan, Mortimore, Ouston & Smith, 1979).

Studies like Brookover *et al.* (1979), Rutter *et al.* (1979) and Mortimore *et al.* (1988) explicitly aimed to open a school's 'black box' by studying the relationship between school effectiveness and so-called process characteristics which relate to a school's organizational features and internal functioning. Probably the most cited summing up of this kind of research was provided by Edmonds (1979), who has listed five factors believed to be the most salient features of effective schools: a strong leadership, high

expectations of children's achievement, an orderly atmosphere conducive to learning, an emphasis on basic-skill acquisition, and frequent monitoring of students' progress.

Scheerens (1992) has criticized this approach. He argues that the empirical evidence for the commonly identified effectiveness enhancing factors is to some degree indecisive. In his review of case studies on school effectiveness, he found the consistency between the results of these studies to be less convincing than most syntheses suggest. Although he noticed that the support for a number of these factors was strong, he argued that it remains unclear what the effect size of each of the delineated factors is. His criticism is substantiated by a quantitative meta-analysis reported in Scheerens and Bosker (1997). This analysis revealed significant effects for collaboration, school climate and monitoring at school, among others, but these effects were found to be rather small. While they acknowledge that the knowledge base on effectiveness enhancing factors is certainly cogent, Scheerens and Bosker contend that this "knowledge is of a rather partial and limited nature" (p. 320). In their view, more foundational studies and a more theory-driven approach are needed to further build on the school effectiveness knowledge base.

In this study, we explored the relevance of the concept of organizational culture for school effectiveness research. By taking school culture into account, interesting leads are offered that infuse school effectiveness research with anthropological, sociological and psychological theories. Furthermore, a starting point for a cultural analysis of schools, with regard to their performance, can be found in a large number of school effectiveness studies. In the effectiveness enhancing factors Edmonds (1979) has identified, the school effectiveness models developed by Scheerens (1992) and Creemers (1994*b*), and recent reviews of research on school effects (Levine & Lezotte, 1990; Sammons, Hillman & Mortimore, 1995), factors emerge that reflect a school's culture, like achievement orientation, a shared ideology or mission, cohesion and collaboration among teachers. Therefore, school effectiveness research findings suggest that research on school culture may certainly be an interesting lead for further explaining the 'secret' of effective schools.

A major problem in linking school culture to school performance is that the measures of organizational culture still lack conceptual clarity (cf. Maslowski, 1998). Consequently, it is largely unknown if cultures between school do indeed differ, and if they do, in what respects they do. Reliable and valid information on the culture of schools is needed before the relationship between culture and effectiveness can be examined. For that reason, the following research objective and research questions were formulated:

*Research objective*

Developing a questionnaire for measuring school culture in secondary education, that reflects values expected to be related to school performance, and that meets the psychometric requirements of reliability and validity.

*Research questions*

1. What are the cultural characteristics of Dutch secondary schools, and are these characteristics influenced by the context of the school?
2. Is school culture related to the performance of secondary schools in the Netherlands?

Based on this objective and these research questions, two basic types of research were distinguished. The first type refers to the construction and validation of the *School Culture Inventory*, which was of an instrumental-nomological nature. This study included three stages: a preliminary, pilot and confirmatory study. The preliminary study comprised two phases. The first involved an in-depth study of one school using interviews, observations, document analyses and a preliminary form of the questionnaire. The second focused on four participating schools, in which the principal was interviewed, school documents analyzed, and a questionnaire submitted to all staff members (in three of the schools). In the pilot-study a revised form of the questionnaire was examined for its reliability and validity in five secondary schools. These outcomes were tested in a confirmatory study in which 40 schools participated.

The second type of research was of an analytical-empirical nature, encompassing the characterization of organizational cultures in secondary education and the study of the culture-performance link. These analyses were based on the data from the confirmatory study. Data were analyzed at the level of 67 school locations. The percentage of schools that participated in this study was relatively low (28%). An analysis of the non-response, based on denomination, school type and school size, indicated no bias in the participating schools. The response rates of the participating schools varied from 20% to 71%, with a mean response rate of 46%. Due to the relatively high non-response of schools, the descriptive figures presented on the culture of Dutch secondary schools need to be treated with caution. However, as no bias was found in the participating schools, the results found for the relationship between culture and denomination, culture and size, and culture and performance, can be considered to be valid for secondary schools in the Netherlands.

## 7.2 The Construction and Validation of the School Culture Inventory

The first part of this study focused on the research objective: 'Developing a questionnaire for measuring school culture in secondary education that reflects values expected to be related to school performance, and that meets the psychometric requirements of reliability and validity'. Chapter 4 describes the process of construction and validation of the questionnaire.

The construction of the *School Culture Inventory* was based on the Competing Values Framework developed by Quinn (Quinn, 1988; Quinn & Rohrbaugh, 1983), consisting of four perspectives on organization. Conceptually, these four perspectives can be described by means of the focus of the organization, and the emphasis on flexibility versus control. With respect to the focus of the organization, this may be aimed at internal or external issues. An internal focus means that the organization itself, i.e. the processes and employees, is most important. An external focus reflects the relationship between the organization and the environment. Control indicates that the behavior of the organization's members can be controlled to a degree, whereas flexibility signifies a certain degree of discretion for an organization's members. Research into these perspectives shows that they reflect four dimensions of organizational culture (cf. Denison & Mishra, 1995; Van Muijen, 1994; Zammuto & Krakower, 1991), which we have labeled the human relations, open systems, rational goal and internal process orientation.

The 'human relations orientation' is based on the basic ideas formulated by the Human Relations movement in organization theory. This movement developed in reaction to the formal tradition of the classic models of administration formulated by Taylor and Fayol. The Human Relations movement emphasizes the human side of administration and believes that the fundamental problem in all organizations is developing and maintaining dynamic and harmonious relationships. Important values in this model are a high morale of organizational members, a concern for people and commitment to the organization. This requires an open atmosphere, as well as possibilities for discussion and participation in decision making.

The second perspective, the 'open systems orientation', represents values that relate to responsiveness to the changing conditions of the organization. This perspective is grounded in the open systems and contingency approaches in organization science. The basic premise is that organizations are dependent on their environment for inputs, and can only operate in an adequate manner if their activities are perceived as legitimate by a number of groups in that environment. This implies that organizations need to adapt to their environment in both a reactive and pro-active way. Values that are at the core of this model, therefore, are innovation, insight and adaptation. These values are required in

order to acquire the necessary resources for maintenance and further growth and for ensuring external support from stakeholders in the environment.

The third perspective is characterized as the 'rational goal orientation'. This orientation is rooted in economic and system theories within organization science. These theories view organizations as entities –or systems– that are directed at achieving their goals. To a certain degree, it is related to the internal process orientation, as it tries to control rationally the processes that lead to a gain in performance. In contrast to the internal process orientation, however, in the rational goal orientation the results of these actions are fed back, which then determines further action. Important values in this model are productivity and effectiveness, and in order to reach these goals, goal clarification, feedback and a rational means-ends approach are considered to be important.

The fourth perspective is characterized as the 'internal process orientation'. This orientation contains a perspective on organizing that is based on the work of Weber on bureaucracies, and the early work of the Scientific Management movement. It is based on the premise that an organization can only operate effectively when its actions are clearly identifiable and coordinated in an efficient manner. Important values in this model are, therefore, stability, continuity and predictability. These aims are achieved by means of clear operations and a clear communication system. Therefore information management and documentation are seen as important means of reaching organizational goals.

Based on these four orientations, a tentative questionnaire was developed containing eight scales. This inventory was then tested in secondary schools in two qualitative studies. First, an in-depth study of one school was conducted. This study was aimed at identifying to what degree the operationalization of school culture was an accurate reflection of the values and norms present at one school, and to explore if a questionnaire can be used to describe these values and norms accurately. In the second study four schools participated. The aim was to identify whether the constructed scales of school culture were able to discriminate between schools and to provide further information on the accuracy of the school culture scales and the feasibility of questionnaires in school culture research.

These analyses revealed that the Competing Values Framework reflected the basic values found in secondary schools. The analyses further indicated that a questionnaire is suited to cover the main cultural themes derived from qualitative analyses of the school's cultures. Finally, it was concluded from the preliminary study that more general scales better reflect the main cultural themes of the schools studied. Thus the instrument was redesigned into an inventory with four scales that reflected each of the four competing values orientations. Each of these scales was operationalized into 10 items.

The inventory was tested for its reliability and validity in a pilot-study in which five secondary schools participated. Major research questions were whether the dimensions of school culture were substantiated by empirical data on secondary school values and whether these dimensions were appropriate for discriminating between schools. To do this, a principal component analysis was performed. This analysis indicated a four-factor solution of school culture dimensions that reflected the four orientations of the Competing Values Framework.

This definitive version of the inventory was then examined for its reliability and validity in a confirmatory study of 40 schools, which constituted the last phase of the validation process. Using confirmatory factor analysis, it was determined whether the dimensions of the explorative factor analysis were confirmed. This analysis largely confirmed the earlier findings of the pilot-study. Furthermore, the four scales were found to be reliable at school level.

## 7.3 The Culture of Secondary Schools in the Netherlands

The second part of our study, reported in Chapter 5, focused on our first research question: 'What are the cultural differences and similarities between Dutch secondary schools?' To answer this, the data of the confirmatory study were further analyzed.

First, the relationship between a school's culture and its denomination was examined. This analysis revealed significant differences between the denominations for each of the four culture scales. The results showed that public schools score around average on values related to human relations and internal process orientations, whereas they score above average on the open systems orientation, and below average on the rational goal orientation. Catholic schools score around average on values related to the human relations and internal process orientations. However, they score relatively low on the open systems orientation and relatively high on the rational goal orientation. Protestant schools, on the other hand, score relatively high on values linked to the internal process orientation, but their scores are below average on the open systems orientation and around average on the human relations and rational goal orientations. Non-denominational private schools score around average for each of the scales.

It was also tested whether a relationship exists between school size and the four culture scales. This analysis revealed a weak relationship between size and the open systems orientation. Larger schools tend to be more innovation and change oriented. For the three other orientations no relationship with school size was found.

In order to gain an understanding of the types of culture present in secondary education, a cluster analysis was performed. To depict images of schools using cluster analysis, the extent to which the (patterns in) culture scores between schools show a resemblance has first to be identified. Thus an agglomerative hierarchical cluster analysis was applied using Ward's method for cluster formation. Based on this method, five clusters were identified.

The first cluster consists of 19 schools. The schools can be characterized as oriented towards internal organization. Schools from this cluster emphasize values that reflect a human relations orientation and an internal process orientation. On the one hand, values like collaboration and mutual support are valued by teachers and administrators, on the other, stability and continuity is emphasized. Schools from this cluster are likely to have a closed climate. The image that emerges reveals a school with a 'cohesive' staff, in which formal and informal norms regulate the activities of each individual staff member. This image of schools in this cluster is strengthened by the relatively low emphasis on the 'external' open systems and rational goal orientation.

The second cluster consists of 11 schools. Unlike the preceding cluster, the schools in this one can be characterized by relatively little emphasis on rules, stability and predictability. These schools also exhibit a strong goal orientation, and value performance and achievement. Human relations issues and an orientation towards innovation and adaptation receive relatively little attention in these schools. The image that emerges reveals a school in which student achievement is highly valued. Efforts of teachers and administrators seem to be directed at stimulating student learning. This is the primary responsibility of each staff member, and crucial in this respect is the relationship between teacher and student.

The third cluster contains 22 schools with a clear focus on innovation and adaptation. This emphasis on the open systems orientation clearly distinguishes schools in this cluster from the four other ones. Teachers and administrators in these schools have a positive attitude towards change. Collaboration between staff members and mutual support is valued. The image that emerges depicts a school that is willing to adopt reforms and that meets the cultural conditions to effectively implement change. Furthermore, these schools are averse to values that belong to the internal process orientation. However, schools in this cluster also show a relatively low score on the rational goal orientation, which suggests that the primary purpose of educational change is not directly related to enhancing student achievement.

The fourth cluster consists of 10 schools, which are oriented towards control. These schools reveal relatively high scores on the internal process and rational goal orientation. On the other hand, the human relations and open systems orientation are relatively less valued. The image that emerges shows a school in which stability, predic-

tability and performance is valued. As such, this cluster can be considered to be the antithesis of the third cluster, which exhibited a flexibility orientation.

The fifth cluster consists of five schools. Schools in this cluster are characterized by a strong emphasis on values that reflect the human relations and rational goal orientations. Schools place considerably high value on human relations, although there appear to be large differences between schools in this respect. Strikingly, this cluster shows positive values for mean scores on each of the clusters, although this value is close to zero for the internal process model. It nevertheless indicates that in general organizational values are considered more important than in other clusters.

A further analysis revealed that these clusters are related to denomination. Public schools are primarily found in the first and third clusters. Protestant schools are mainly found in the first, while Catholic schools and schools of other denominations are more spread across all clusters. A subsequent analysis revealed no relationship between a school's cultural profile and its size.

## 7.4 School Culture and School Performance

In Chapter 6 the relationship between school culture and performance was investigated, following our research question: 'Is school culture related to the performance of Dutch secondary schools?' For this purpose, student achievement scores and school promotion rates were used as measures of performance. These measures were taken from the performance data made available by the *Dutch Inspectorate* of all Dutch secondary schools. The measure of *student achievement* was based on student scores for national examinations. The *promotion rate* in upper secondary school was an estimate of the mean probability that students in upper secondary schools are promoted to the next grade.

The mean examination scores and mean promotion rates of three subsequent years (1997 to 1999), were taken into account. For each of the school types the mean examination scores of a particular school correlated significantly with the examination scores of the previous year, ranging from 0.50 to 0.81. In the analyses the mean score over the years 1997 to 1999 was used. These mean scores were controlled for student intake as shown by the percentage of ethnic minority students. For VBO, the percentage of IVBO students was used as an additional covariate. This percentage refers to those VBO students who encounter serious learning difficulties and are placed in an IVBO stream where they receive more individual instruction.

### *7.4.1 Relationship between School Culture and Student Achievement*

A school's cultural features are often associated with student achievement. Based on previous findings of studies into the relationship between culture and performance, as well as the findings of more general school effectiveness and school improvement studies, a number of hypotheses were formulated. School effectiveness studies, for instance, suggest a relationship between achievement orientation and students' mean examination, as well as a relationship between an orderly climate and student achievement. Other studies, from the school improvement tradition, suggest that a collaborative culture within a school will improve the quality of teaching, and emphasize the importance of openness to change. Based on these findings, the following hypotheses were formulated:

| | |
|---|---|
| *Hypothesis A* | The valuing of a goal and achievement orientation in school is related to higher levels of student achievement |
| *Hypothesis B* | The valuing of collaboration and collegiality in school is related to higher levels of student achievement |
| *Hypothesis C* | The valuing of an innovation orientation in school is related to higher levels of student achievement |
| *Hypothesis D* | The valuing of a rule orientation in school is related to higher levels of student achievement |

These hypotheses were not supported by the findings of our study. No effect on student achievement was found for the rational goal (*Hypothesis A*), the human relations (*Hypothesis B*), the open systems (*Hypothesis C*), or the internal process orientations (*Hypothesis D*). In other words, the commonly found effects in school effectiveness and school improvement research were not confirmed in this study.

Quinn (1988) gave a more complex relationship between the four cultural dimensions and performance. He argued that organizations with cultural profiles that emphasize the values of all four dimensions, without overemphasizing any one in particular, tend to be effective. In order to explore this statement, the schools' cultural profiles were related to student achievement. Student achievement scores were found to be highest in schools from the first cluster (strong human relations and internal process orientation), whereas scores were lowest in schools belonging to the third cluster (a strong open systems orientation). However, the model with the cultural profiles was not found to fit the data better than the baseline model, in which only the covariates 'percentage of cultural minority students' and 'percentage of IVBO students' were included. Therefore, regarding the mean student achievement scores Quinn's theory could not be tested for its

relevance.

### *7.4.2 Relationship between school culture and promotion rates*

The relationship between the four cultural dimensions and the promotion rates was also analyzed. Significant effects for both the internal process and the rational goal orientations on promotion rates were found. Each increase of one point on the internal process dimension leads to a decrease of over 8 percent in retention rate, while other factors remain constant. Similarly, each increase of one point on the rational goal scale leads to a decrease of 6 percent in retention rate. As indicated by the effect sizes of 0.53 and 0.48 for VBO, 0.89 and 0.80 for MAVO, 1.26 and 1.12 for HAVO, 1.02 and 0.92 for VWO, these are substantive effects.

We further focused on the five cultural clusters of schools in relation to the mean promotion rates in upper secondary school over the years 1997-1999. This revealed that the mean promotion rate was the lowest in schools belonging to the first cluster. The mean promotion rates were found to be highest in schools from the fourth cluster. In comparison to the first cluster, no significant differences were found for schools from the second, third and fifth cluster. The mean promotion rate in schools from the fourth cluster, however, was significantly higher than in schools belonging to the first. The effect sizes, however, were smaller than those found for the separate cultural dimensions. Furthermore, the 'dimensions model' appeared to better fit the data than the 'profile model'. For this reason, the effect found for the fourth cluster was attributed to its relatively high scores on the internal process and rational goal orientations.

Despite the less fitting 'profile model', the outcomes were further analyzed to examine whether they supported Quinn's theory of effectiveness. Schools from the fourth cluster were characterized by a relatively low emphasis on the human relations and open systems orientations, and by a relatively high emphasis on the internal process and rational goal orientations. A further analysis revealed that schools from the fourth cluster had promotion rates significantly higher than the promotion rates of schools from the first, second and third cluster. Following Quinn's theory, either schools from the first three clusters place too much emphasis on the human relations and open systems orientations, or not enough on the other ones. The first explanation was rejected, as schools from the second cluster had virtually the same scores on the human relations and open systems orientations as schools from the fourth cluster. The second explanation holds well, as each of the first three clusters emphasizes the internal process and/or the rational goal orientation less than schools from the fourth cluster.

## 7.5 Reflection and recommendations for future research

The concept of organizational culture has often been questioned for its practical and theoretical relevance. It is often argued that school cultures are hard to change, as they relate to deeply rooted beliefs of teachers and other staff members. In our view, however, most principals engage daily in 'cultural change' without noticing it, by proposing solutions to problems that occur, by reinforcing teachers' behavior, or by obstructing regulations from the Education Ministry. Although these aspects may not be seen as change –because of the *planned* nature of change– they certainly be considered cultural maintenance (Sanders & Neuijen, 1989). Furthermore, when planned change is pursued, a number of strategies and techniques for accomplishing change have been proposed in the literature to support principals or relevant others (Maslowski & Dietvorst, 2000). We acknowledge that cultural change is one of the most laborious challenges a principal can face, but argue that it is certainly feasible. [1]

Regarding the theoretical relevance of the construct, Scheerens and Bosker (1997) contend:

> The main reason for not treating culture as the other principles that could explain effectiveness phenomena is that it is not considered as an area that is amenable to instrumental malleability as the other principles, to some extent, are. Second, each of the other theory-embedded principles [e.g., synoptic planning and bureaucratic structuring, alignment of individual and organizational rationality] may be seen as bearing particular consequences for organizational culture. … Therefore, despite the crucial importance of issues of culture and ethos for effective organizational functioning, from the perspective chosen in this presentation it is seen more as a by-product of other effectiveness-enhancing mechanisms or as a 'maintenance condition' […], and not as an additional explanatory principle (p. 294/295).

Because of its reliance on structural factors, they argue that culture is of little additional value to the existing theories that attempt to explain school effects. Their criticism addresses one of the main difficulties in current research on school cultures, that is concerned with the operationalization of culture as a construct. For example, Deal and Peterson (1999) noted that Schein's (1985) definition of culture as "a pattern of basic assumptions –invented, discovered, or developed by a given group as it learns to cope with problems … that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (p. 9), is widely adopted among scholars in educational administration.

Despite this acknowledgement to Schein, however, most studies rely on measures of human behavior in school organizations, instead of values or assumptions which are to be found at the 'deeper' level of culture (see, e.g. Van Hoewijk, 1991; Schein, 1985). The main reason for focusing on behavioral aspects is that values and basic assumptions are often conceived as (partly) unconscious, and therefore difficult to measure by means of quantitative techniques. Operationalized this way, however, it is difficult to distinguish culture from climate, or even from procedures and structures.

Besides the conceptual confusion caused by the operationalization of culture as school practices, it also has certain methodological drawbacks. As Schein (1985) has argued, cultural artifacts and behavior are often situation dependent and not always coherent with values and basic assumptions of staff members. For instance, basic assumptions and values will change incrementally over time. Cultural artifacts, like the school logo, on the other hand cannot change incrementally. They tend to be replaced if they no longer represent what the school stands for. Furthermore, many cultural artifacts are subject to instrumental concerns (Maslowski & Dietvorst, 2000). For instance, the logo of the school has to be attractive to parents and potential students. In some schools, this 'marketing function' of cultural artifacts outweights the 'identification function' for staff members. Consequently, the interpretation of cultural artifacts is less unequivocal than is often assumed. This situation dependency also applies to behavioral patterns (Maslowski, 1997). The actions of staff members are not only based on their beliefs, but also on the situation and the actors they deal with (Koot, Leeuwendal, Vermeulen & Verweel, 1990). This implies that practices reflect the underlying values, norms and assumptions of staff members only to some degree.

Van Muijen (1994) sidestepped this problem of interpretation by focusing his questionnaire on values in the tradition of earlier work by Rokeach (1973). The FOCUS questionnaire is directed at measuring values like 'flexibility', 'formalization' and 'hold on to standards' (Van Muijen, Koopman & De Witte, 1996). Quinn (1991) used a similar approach to measure organizational culture based on his competing values model. In this study, we elaborated on this approach in our attempt to develop an inventory for measuring school values, the *School Culture Inventory*. This inventory proved to meet the psychometric requirements of validity and reliability and is recommended for further research into secondary school culture. Furthermore, due to the general nature of the inventory, it is worthwhile determining the psychometric quality of the inventory for use in other educational sectors, like primary schools and institutions for higher education.

In this study the culture of secondary schools was characterized. An interesting finding was that cultures differ across schools, and that these differences are related to a school's denomination. This suggests that the various denominations reflect, at least to

some degree, the differences in values between the various religious or political ideologies. In the United States a number of studies have focused on differences between Catholic and public schools (e.g., Coleman & Hoffer, 1987; Rowan, Raudenbush & Kang, 1991). Rowan *et al.* (1991) noted in their study that Catholic schools were more likely to have supportive administrative leadership, participative school decision-making and high levels of staff cooperation. In the Netherlands a number of studies have focused explicitly on the religious foundations of schools and the consequences of these beliefs on the functioning of schools (e.g. Dijkstra, 1992). From a cultural perspective on school functioning, this is certainly an interesting lead to pursue.

Furthermore, this study indicated that the cultures of secondary schools can be classified using profiles. Based on the relative scores of the four value orientations, five cultural profiles were identified. These profiles reflected different combinations of the four cultural orientations. Some profiles were characterized by a strong emphasis on one of the four orientations, others strongly emphasized two or more of these orientations. Although cultural profiles are a powerful means of characterizing schools (cf. Zammuto & Krakower, 1991), they are rarely used in studies on school cultures. Besides their value for characterizing schools, cultural profiles offer interesting possibilities to study (as described in Chapter 6) the relationship between school culture and school performance from a contingency perspective.

For our characterization of school cultures, we focused on schools' cultural traits – referring to their emphasis on the human relations, open systems, rational goal and internal process orientations. Other aspects, like the homogeneity and strength of culture have not been addressed in this study (see Chapter 1). In the literature on school effectiveness, however, shared values and cohesiveness are often referred to as effectiveness enhancing factors at school level (e.g. Levine & Lezotte, 1990; Sammons, Hillman & Mortimore, 1995). A further exploration of the concepts of homogeneity and strength therefore deserves attention, both for characterizing schools and for determining the relationship between culture and performance.

Related to aspects of homogeneity and strength is the concept of cultural fit. Cultural fit refers to the relationship between the values of individual staff members and the school values. Business administration studies have shown that the values of some employees tend to be closely aligned to the culture of the organization, whereas other employees emphasize strongly different values (cf. O'Reilly, Chatman & Caldwell, 1991). A close alignment of personal values and organizational values is likely to be related to the motivation and commitment of employees. Furthermore, collaboration in organizations, and participation in the decision-making process are considered to lead to a better fit between personal and organizational values. With respect to schools, this concept of

fit is certainly interesting for research on the functioning of school organizations. In this respect, cultural fit can be considered as a proxy of whether staff members have a 'constructive attitude' towards school. It may indicate whether staff members are willing to reflect on their actions, and whether they are willing to change their practices.

By focusing on cultural traits related to the core functions of schools, a rather static perspective of culture was used in this study. One of the main disadvantages of this approach is that it provides no information on how these values were developed, and how these are maintained in school. To unravel these processes, a more ethnographic study is needed. Present ethnographic studies of school cultures, however, only partly fill this gap. Most of these rely to a large extent on 'thick descriptions' of daily processes in schools (cf. Henry, 1993; Swidler, 1979). Although these studies certainly enhance our understanding of how these processes originated in individual schools, they provide little theoretical evidence on the process of culture formation in schools. A small number of studies have tried to overcome this problem (Nias, Southworth & Yeomans, 1989; Rosenholtz, 1989; Rossman, Corbett & Firestone, 1988; Staessens, 1991*a*). Each of these studies has derived certain general patterns on the formation and maintenance of culture - emphasizing differences as well as similarities across schools - from thorough analyses of school processes over time. However, only Rossman, Corbett and Firestone's (1988) study was directed at secondary schools. Their study indicates that cultural processes, especially where homogeneity and strength of culture are concerned, are more complex in secondary schools than in primary schools. Rossman's study, as well as the qualitative oriented studies reported for the preliminary phase of our validation study, suggest that this type of research is promising in order to enhance our knowledge on the development of cultures in secondary education.

A further interesting lead for studying the interpersonal relationships in school and the development and change of school cultures is offered by social network analysis (Scott, 1991; Wasserman & Faust, 1994). Network analysis focuses on relationships among social actors, and on the patterns and implications of these relationships.[2] In the Netherlands, Heyl (1996) recently studied the social networks of twelve secondary schools. Taking the density of the networks, the degree of segmentation and the reciprocity of contact between staff members, he characterized each of the schools. His research revealed that schools vary on these aspects. The intensity of contact between staff members, for instance, differed across schools and across domains of interaction. Furthermore, the centrality of the principal and deputy principal in the social network was found to differ across schools. As Heyl argues, by focusing on school networks, the homogeneity of school cultures and their segmentation across subject departments or other distinct groups in school, can be studied. An analysis of the density of the network

and the centrality of certain actors, like the school principal, in this network also offers interesting possibilities to study the development of school cultures.

Social network analysis not only bears relevance for studying cultural processes in schools, it might also guide further research into culture and effectiveness. Recent studies in primary and secondary schools in the United States found interesting differences in communication patterns of differentially effective schools (Durland, 1996; Durland & Teddlie, 1996; Teddlie & Kochan, 1991). The results of these studies indicate that there were differences between effective and ineffective schools in terms of the centrality of the principals and the cohesiveness of departments (see also, Teddlie & Reynolds, 2000*b*). In effective schools, principals held a more central position in the school's social network. Furthermore, effective schools were found to be more cohesive, measured by means of the network's density, than ineffective schools. To study these effects, Durland (1996) developed a model, the *Centrality-Cohesiveness Model of School Effectiveness*, that predicted the types of sociogram patterns she expected from schools that varied in terms of effectiveness and student intake. This model, combined with the advanced techniques for analyzing networks developed by Heyl (1996) might guide further research into culture and effectiveness from a more process oriented perspective.

With regard to the relationship between school culture and performance, the findings of this study have been disappointing. With regard to our measure of effectiveness, the mean student achievement within school, no relationship was found for any of the four cultural orientations, nor for different school cultural profiles. This might, however, be caused by methodological constraints –a relatively small sample and the use of aggregated performance data– of the study. It is therefore recommended to investigate further the relationship between culture and performance in studies with larger samples. For the mean promotion rates in upper secondary school, however, a relationship was found with the internal process and rational goal orientations. This indicates that schools concerned with the structuring of organizational processes aimed at achievement are more efficient than those who emphasize other organizational aspects. This finding is certainly interesting from a practical point of view. For students it means they are able to continue their educational career, or leave the schooling system to work, at an earlier stage. For schools it means that classes will be slightly smaller, which may positively influence the work environment of teachers, and students' learning environment of students. Nevertheless, only relatively few studies have explicitly focused on promotion rates as a measure of school performance.

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# Notes

## Chapter 1

[1] Jencks *et al.* (1972) acknowledge that they employed an input-output approach in their study: "This means we looked at things like physical facilities, libraries and library books, how much homework a school assigned, whether it had heterogeneous or homogeneous grouping, numbers and kinds of personnel, salaries, criteria for selecting teachers, and so forth. We did not look in any detail at things like morale, teacher expectations, school traditions, and school 'climate'" (p. 95). Although their study was inevitably limited to the input characteristics of schools (due to the available data from *Equality of Educational Opportunity*, *Project Talent* and other studies they reanalyzed), Jencks and his colleagues further argue that a more process oriented approach would probably not enhance our understanding of school effects: "While these things may well be associated with unusually rapid or slow cognitive development, policy-makers cannot usually control them, social scientists cannot usually measure them, and no one can be sure whether they cause achievement or only result from it" (p. 95/96).

[2] These five factors are often attributed to the writings of Edmonds. The 'five-factor model', however, encompasses only a part of the effectiveness enhancing factors that Edmonds identified. Edmonds also refers to a sixth factor, "the availability of resources", which is rarely mentioned in review studies on educational effectiveness. Identifying this as an effectiveness-enhancing factor can be understood from Edmonds' concern with the urban poor, whose schools often lacked even the most elementary resources.

[3] Fullan cited in Hopkins (1991, p. 60). Hopkins also made the addition between brackets to Fullan's citation.

[4] In his contribution to the country reports, as part of the proceedings from the second *International Congress on School Effectiveness*, Sackney (1989) refers to a number of Canadian studies that studied aspects of school culture in relation to outcomes, i.e. Orora (1988), Prosser (1987) and Trew (1987). Unfortunately, these studies could not be obtained.

[5] The study of Harrison and Kuint (1998) is not discussed because of its reliance on school culture and school effectiveness in emergency situations. Furthermore, studies that focused primarily on normative expectations of teachers in relation to students and student achievement were not taken into account (cf. Fyans & Maehr, 1990; Maehr & Fyans, 1989; Mok & Flynn, 1998)

[6] Comprehensive overviews on the various aspects of the performance and effectiveness measure are to be found in Scheerens and Bosker (1997) and Teddlie, Reynolds and Sammons (2000).

[7] A number of studies have addressed school effectiveness in an absolute manner by studying the overall effects of attending school versus not attending school. As Teddlie, Reynolds and Sammons (2000) indicate there are three types of studies: (1) those conducted in developing countries where education is not compulsory; (2) those on students who have dropped out; and (3) studies in which some historical event results in 'no schooling' for some students over a period of time.

[8] Researchers differ on whether school effects based on learning gains (corrected for prior achievement) or those based on unpredicted learning gains (corrected for prior achievement and other background variables, like aptitude, socioeconomic status, age gender and ethnicity) should be preferred. However, corrections hold the threat that 'real' school effects are underestimated (cf. Coe & Fitz-Gibbon, 1998). For instance, as Scheerens and Bosker (1997) have discussed, '"privileged' students are more likely to choose 'good practice' schools, so that controlling for a student's socioeconomic status, for instance, results in overadjustment" (p. 55).

## Chapter 2

[1] Burrell and Morgan (1979) describe a more comprehensive framework for classifying paradigms in organization science. They identify four paradigms: the radical humanist, radical structuralist, interpretative and functionalist paradigm. In Burrell and Morgan's view the latter two stem from the 'sociology of regulation', whereas the former two are derived from the 'sociology of radical change'. At a later stage, Morgan argued that for the purpose of studying culture, the interpretative and functionalist paradigm appear most appropriate (Morgan, Frost & Pondy, 1983). "Two approaches may be adopted here, one drawing upon assumptions characteristic of the functionalist paradigm, the other upon the interpretative paradigm. Both approaches seek to identify and document the various symbolic forms through which the culture of an organization expresses itself, and identify the patterns of subjective meaning embodied in the content and context of cultural practice. The functionalist researcher then typically seeks to discover the role which each aspect of cultural practice plays in sustaining the culture as an ongoing system, placing a great deal of emphasis upon the functions which meaning systems perform. This perspective is inherited from anthropology, which in its early days modeled its theories upon organismic metaphors. The interpretative approach on the other hand takes the existence of all aspects of the culture as problematic, and seeks to understand the methods and practices by which its elements are created and sustained through ongoing interpretive processes, which construct and reconstruct the culture as a realm of significant meaning" (Morgan, Frost & Pondy, 1983, p. 19). This is in accordance with the classification used in this study.

[2] An overview of these schools of thought can be found in the work of Burrell and Morgan (1979), and Allaire and Firsirotu (1984).

[3] In the multidimensional scaling of each of the criteria, however, it becomes clear that nearly all criteria from the rational goal orientation are classified as ends. The ends from the other orientations, on the other hand, are rated relatively less on the 'ends dimension'. Therefore, it can be argued that a certain hierarchy between the orientation is present. This is not surprising, as effectiveness implies that the goals of an organization are achieved in a broad sense.

Whether the ultimate goals are pursued, therefore, by definition belongs to the rational goal orientation. Interestingly, Campbell (1977), on whose criteria the framework was based, acknowledged this fact in his article, where he admitted that the 30 criteria varied in generality, operationalization, and closeness to the final pay-off. For that reason, the framework can be interpreted in terms of intermediate goals –containing the criteria of the human relations, open systems and internal process orientation– and ultimate goals –containing the criteria of the rational goal model. Whether these latter goals are achieved essentially indicates whether organizations are effective or not.

## Chapter 3

[1] The *test-retest method* is used to determine the stability of the inventory. For that purpose, the test is sent twice to (a selection of) the respondents. In our case, a too low response was expected from this procedure, thus the test-retest method has not been used in our study. The *alternative form method* is related to the test-retest method. It differs from the test retest method in that a different form of the inventory is sent to the respondents for the retest. Although this is a valuable method for assessing the reliability of tests, it is less suitable for determining the reliability of inventories. The *split-halves method* is a variant of the alternative form method, in that the inventory is split in two parts, which are sent to the respondents. Subsequently, the reliability of the two parts is used to determine the reliability of the whole inventory. This method has the disadvantage that each split will probably result in a slightly different correlation between the two halves which, in turn, will lead to a different reliability estimate.
In this study, Cronbach's alpha is used to determine the internal consistency or homogeneity of the culture scales. It has frequently been argued in the psychometric literature, that the alpha coefficient reflects not only the mean correlations between the items [i.e., the internal consistency], but also the number of items (e.g., Drenth & Sijtsma, 1990; Nunnally, 1978). Therefore, a scale with a larger number of items might reveal a higher alpha coefficient than a scale with fewer items, although the internal consistency of both scales is comparable. Furthermore, the term 'homogeneity' is misleading, as Drenth and Sijtsma (1990) argue, as a high alpha might be found for scales that are heterogeneous, but which consist of several groups of items that are homogeneous.

[2] Since 1998 (representing the 1997 national examinations), the Dutch Inspectorate has published three performance measures of secondary schools (with the exception of Free schools) each year: (i) the promotion rates in lower secondary school; (ii) the promotion rates in upper secondary school; and (iii) mean examination scores. Only the latter two are used in our analyses of school performance. The main reason for not including the first measure is that the promotion rates in lower secondary school were measured in a different way during the three subsequent years. Therefore, serious difficulties were encountered in determining a consistent composite score for the promotion rate during the first years of secondary education.

[3] This can be illustrated by the following example. Suppose that at school location A, 200 students participated in the English language examination with a mean score of 7.0.

Furthermore, 150 students participated in the Mathematics examination with a mean score of 6.0, and 30 students participated in the History examination with a mean score of 8.4, then the mean score for that school is:

((200 * 7.0) + (150 * 6.0) + (30 * 8.4)) / (200 + 150 + 30) = 6.7

In our example, we only took three subjects into account, whereas the number is actually much larger. Because differences between locations may emerge, we use school locations instead of schools as our basic entity for effectiveness measures. This reduces the complexity to a large degree, for large schools (which offer three or more school types) often have more than one location, thereby spreading the school types over these locations. Also, in order to be meaningful, these mean location scores for each school type offered are only computed when at least 30 student examination scores for a school location were available.
A specific problem with VBO and MAVO examination scores is the fact that different levels of ability are used for the subjects. MAVO-students may, for instance, apply to sit the English language exam at C-level (lower level) or D-level (higher level). Every year Cito*group* (the Dutch *Educational Testing Service*) publishes what the examination score at D-level would have been for students at C-level if they had applied for the D-level examination (and vice versa). These data are used as input for calculating the mean school score of a specific school. For example, if the national mean for the English language examination at MAVO D-level is 6.8 and at C-level 5.9, and nationally 84% of the students were examined at D-level and 16% at C-level, then the 'virtual' national mean for English language at MAVO level is:

(0.84 * 6.8) + (0.16 * 5.9) = 6.7

Using the CITO*group* data, the D-level examination score are transferred to C-level scores. Suppose that, for English language the level difference is exactly one point. This means that a D-score of 6 is actually a C-score of 7. We may compute the mean national C-score for English language, using this difference score, as follows:

(0.84 * (6.8 + 1)) + (0.16 * 5.9) = 7.5

Subsequently, for each school location the deviation from this national C-level mean can be determined. For a specific school location, where 63% of the students applied for the D-level examination with a mean score of 5.9, and where 37% applied for the C-level examination with a mean score of 6.2, then the mean C-level score on English language for this particular school location is computed as

(0.63 * (5.9 + 1)) + (0.37 * 6.2) = 6.6

This implies that the mean C-level score of that school is 0.9 lower than the national mean C-score for English language. Consequently, this school location receives as the adjusted MAVO mean for English language: 6.7 – 0.9 = 5.8. A similar procedure is followed for VBO.

[4] For example, if 95% of third grade MAVO-students of a particular school are promoted to fourth grade, and 90% of fourth graders pass their MAVO-examinations, then the mean probability to get promoted in upper secondary school is: (0.95 + 0.90) / 2 = 0.925.

The measures used in our study differ from those calculated by the Inspectorate. The Inspectorate reports the probability that a MAVO-student at that particular school will pass his or her exam without retention in upper secondary school. For our example, therefore, the measure of 0.925 * 0.925 = 0.856 would be reported by the Inspectorate. We decided to recalculate the Inspectorate data because the measure complicates comparison across tracks.
In the case of VBO and MAVO, with a four-year curriculum, the Inspectorate's probability refers to the square of the mean probability of promotion ($p^2$), whereas this probability is likely to be smaller for HAVO (five-year curriculum) and VWO (six-year curriculum). In these cases $p^3$ and $p^4$ are calculated, respectively. Nevertheless, to test the robustness of the findings between school culture and promotion rate, the *mean probability of promotion* was substituted by the *probability of promotion* in the analyses. Although slightly different effect sizes were found, the (in)significance of the earlier findings remained the same, with one exception. For the relationship between promotion rates and cultural profiles, a significant effect was found for cluster 5, compared to cluster 1.

## Chapter 4

1 Pseudonyms have been used for the names of the schools in this section, in order to ensure their anonymity. On the other hand, an attempt was made to keep the general character of the school names as much as possible in the pseudonyms. All figures on school size or other features refer to the 1996-1997 school year, when the fieldwork was undertaken.

2 "Tile classes" overlap the streams like roof-tiles. For example, in the second grade a VBO/MAVO, a MAVO/HAVO and a HAVO/VWO class is formed. Thus, students who perform at MAVO level can be placed in either a VBO/MAVO class (if they are low performers) or in the MAVO/HAVO class (if they are high performers).

3 It should be noted that the correlations reported for the pilot-study were not corrected for attenuation, whereas the correlations reported from the LISREL analyses are corrected.

4 Bentler and Bonett's (1980) Normed Fit Index (NFI) and Nonnormed Fit Index (NNFI), based on the comparison to a baseline model (instead of no model, as in the case of the GFI and AGFI), revealed similar values (0.94 for both indices), as well as Bentler's (1990) Comparative Fit Index (CFI) (0.95).

## Chapter 5

1 A number of studies in primary and higher education have addressed these themes, for instance the studies of Houtveen, Voogt, Van der Vegt and Van de Grift (1996) in primary schools and the studies of Tierney (1988), Zammuto and Krakower (1991) in institutions for higher education.

2 A further examination of the skewness and kurtosis ratios confirms this impression for both the human relations orientation (skewness ratio = 0.11; kurtosis ratio = -0.18) and the internal process orientation (skewness ratio = -0.56; kurtosis ratio = 0.03). *See Appendix VIII for an explanation of these ratios.*

[3] The skewness ratio (-0.26) and kurtosis ratio (- 1.93) for the rational goal orientation do not indicate that the distribution strongly deviates from the normal distribution, although the kurtosis ratio is relatively large. An examination of the distribution of school mean scores on the open systems orientation reveals a similar outcome. The skewness ratio for the open systems orientation is 0.73, whereas the kurtosis ratio is -1.55.

[4] Houtveen *et al.*'s 'team orientation' reflects our human relations orientation, whereas 'growth orientation' reflects our open systems orientation. Houtveen's 'achievement orientation' is based on both the internal process orientation and the rational goal orientation. In their study, a confirmatory factor analyses revealed one factor for the internal process and rational goal orientation.

## Chapter 6

[1] The percentage of cultural minority students and the percentage of students who receive grants for their schooling costs were found to be related: VBO ($r$ = .46), MAVO ($r$ = .78), HAVO ($r$ = .62) and VWO ($r$ = .67)

[2] This analysis was based on the mean examination scores of 95 schools with a HAVO track. As well as the percentage of cultural minority students, (i) the percentage of students placed in a higher track than their primary school recommendation, (ii) the percentage of students placed in a track according to their primary school recommendation; and (iii) the percentage of students receiving grants were used as covariates in the analyses.

[3] The Pearson correlation coefficient between the outcomes of the school level analysis and the multilevel analysis was 0.57 ($p < 0.001$). As Rekers-Mombarg, Lodewick and Bosker (2000) argue, this correlation is likely to (firmly) underestimate the true correlation between the two measures, for both analyses were only partially based on the same student population.

[4] In our analysis of the relationship between cultural clusters and student achievement (paragraph 6.4), the mean examination scores of schools in cluster 1 were higher than those of schools in the other clusters. In Section 6.2 we argued that (except for VBO) mean examinations scores are related to mean promotion rates of schools. Despite this relationship, the mean promotion rates of schools in cluster 1 are lower than in any of the other clusters.

## Chapter 7

[1] Most of the strategies to change school cultures are rooted in existing change strategies like those advocated in the *organization development* tradition (Maslowski, 1997).

[2] The use of social network analysis for studying cultural differences between groups has a long history in the social sciences, including organization science (see Scott, 1991). Homans (1951), for instance, analyzed the social relationships between employees in the Hawthorne studies. Recently, Kilduff and Corley (2000) advocated the application of social network analysis in the study of organizational culture.

# Samenvatting

[Dutch Summary]

## Doel van het onderzoek

Het onderzoek naar de effectiviteit van onderwijs kent een lange traditie. De bakermat van deze onderzoekstraditie is het grootschalige onderzoek naar verschillen in onderwijskansen dat Coleman en zijn collega's in de zestiger jaren in de Verenigde Staten verrichtten (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966). Uit het onderzoek van Coleman kwam naar voren dat de prestaties van leerlingen maar voor een gering gedeelte door scholen werden beïnvloed. Bovendien bleek dat een groot aantal materiële kenmerken van scholen, zoals de salarissen van leerkrachten en het schoolgebouw, nauwelijks verband hielden met de prestaties van leerlingen. Soortgelijke bevindingen werden enkele jaren later eveneens door Jencks gerapporteerd, op grond van zijn analyse van een aantal eerdere onderzoeken naar ongelijkheid (Jencks, Smith, Acland, Bane, Cohen, Gintis, Heyns & Michelson, 1972).

Het onderzoek van Coleman en Jencks is aan het eind van de jaren '70 en begin van de jaren '80 sterk bekritiseerd, aangezien het zich met name richtte op materiële schoolkenmerken ter verklaring van verschillen in leerprestaties, terwijl het effect van meer inhoudelijke kenmerken, zoals het gedrag van docenten en het beleid van de school nauwelijks aan bod kwam. Als gevolg hiervan verschoof de aandacht van onderzoekers aan het eind van de zeventiger jaren naar meer 'procesmatige' kenmerken van scholen in relatie tot schooleffecten (Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Rutter, Maughan, Mortimore, Ouston & Smith, 1979).

Edmonds (1979) heeft een overzicht gegeven van de resultaten van het 'vroege' onderzoek naar effectiviteitsbevorderende schoolkenmerken. Een sterk leiderschap, hoge verwachtingen ten aanzien van het presteren van leerlingen, een ordelijke sfeer die het leren bevordert, nadruk op het verwerven van basisvaardigheden en het regelmatig nagaan of leerlingen vorderingen boeken, werden door hem genoemd als factoren die leerprestaties positief beïnvloeden. Latere overzichten van onderzoekingen op dit terrein vermeldden –hoewel soms uitgebreid met andere factoren dan wel gebruikmakend van andere benamingen– in hoofdlijnen dezelfde effectiviteitsbevorderende factoren.

Scheerens (1992) heeft, in kritiek hierop, aangegeven dat de empirische onderbouwing van elk van de genoemde factoren niettemin te wensen overlaat. In zijn bespreking van gevalstudies naar schooleffecten, gaf hij aan dat de resultaten van eerdere onderzoeken minder eenduidig zijn dan de meeste overzichten suggereren. Deze kritiek wordt ondersteund door de resultaten van een meta-analyse van Bosker en Witziers (Scheerens & Bosker, 1997). Deze analyse liet zien dat er weliswaar sprake is van significante effecten van samenwerking, schoolklimaat en 'monitoring', maar dat deze effecten betrekkelijk klein zijn. Scheerens en Bosker (1997) erkennen dat de kennisbasis over effectiviteitsbevorderende factoren haar waarde heeft bewezen, maar betogen dat nog weinig bekend is over onderliggende principes. Om die reden pleiten zij voor meer fundamentele studies naar schooleffectiviteit en voor een meer theoriegestuurde benadering om de kennisbasis over effectiviteitsbevorderende factoren verder te ontwikkelen.

In dit onderzoek hebben we de relevantie van het concept organisatiecultuur voor het schooleffectiviteitsonderzoek bestudeerd. Door ons te richten op de cultuur van de school worden aangrijpingspunten geboden om inzichten uit de antropologie, sociologie en de psychologie aangaande het handelen van personen te verbinden met schooleffectiviteit. Naast deze theoretische overwegingen zijn er ook empirische overwegingen die voor nader onderzoek naar cultuur en prestaties pleiten. In het bestaande onderzoek naar schooleffecten kunnen de nodige verwijzingen naar culturele factoren worden gevonden, die de relevantie van een dergelijk onderzoek onderstrepen. In de effectiviteitsbevorderende factoren die door Edmonds (1979) worden onderscheiden, alsmede in de effectiviteitsmodellen van Scheerens (1992) en Creemers (1994*b*), en in recente overzichtsartikelen van onderzoek naar schooleffectiviteit (Levine & Lezotte, 1990; Sammons, Hillman & Mortimore, 1995) komen steeds factoren naar voren die de cultuur van een school weerspiegelen, zoals prestatiegerichtheid, een gedeelde ideologie en missie, en het belang van samenwerking tussen leerkrachten.

Een probleem dat zich echter voordoet bij het onderzoeken van de relatie tussen cultuur en schooleffectiviteit, is dat de operationalisatie van het begrip schoolcultuur nog te wensen overlaat (cf. Maslowski, 1998). Daarnaast is nog weinig onderzoek gedaan naar

de mate waarin scholen verschillen ten aanzien van hun cultuur. Om die reden is de volgende doelstelling voor dit onderzoek geformuleerd, met daarop volgend twee onderzoeksvragen:

*Doelstelling van het onderzoek*
Het ontwikkelen van een vragenlijst voor het meten van schoolcultuur in het voortgezet onderwijs, die voldoet aan de psychometrische eisen van betrouwbaarheid en validiteit.

*Onderzoeksvragen*
1. Wat zijn culturele kenmerken van scholen voor voortgezet onderwijs in Nederland, en in hoeverre worden deze kenmerken beïnvloed door de context van de school?
2. Bestaat er een verband tussen de cultuur en de prestaties van scholen voor voortgezet onderwijs?

Op basis van deze doelstelling en deze onderzoeksvragen is het onderzoek opgedeeld in twee delen. Het eerste deel is gericht is op het ontwikkelen en valideren van de vragenlijst *Schoolcultuur in het voortgezet onderwijs*. Dit bestond uit drie fasen: een vooronderzoek, een pilot onderzoek en een confirmatief onderzoek. Het vooronderzoek bestond uit twee studies. De eerste studie betrof een dieptestudie op één school, waarbij gebruik werd gemaakt van interviews, observaties, documentanalyses, en waarbij een voorlopige versie van de vragenlijst werd afgenomen. In de tweede studie participeerden vier scholen betrokken. In deze scholen werd de rector van de school geïnterviewd, werden schooldocumenten geanalyseerd, en in drie van de vier scholen werd de vragenlijst afgenomen onder alle stafleden. In het pilot onderzoek, waaraan vijf scholen voor voortgezet onderwijs deelnamen, is een herziene versie van de vragenlijst onderzocht op aspecten van betrouwbaarheid en validiteit. Het confirmatief onderzoek, tenslotte, had tot doel na te gaan in hoeverre de resultaten van het pilot onderzoek van toepassing zijn voor een representatieve steekproef uit de populatie van scholen. Aan dit confirmatieve onderzoek namen 40 scholen deel.

Het tweede deel van het onderzoek was gericht op het beantwoorden van de twee onderzoeksvragen. De analyses die hiervoor werden verricht hadden betrekking op de gegevens die voor het confirmatieve onderzoek waren verzameld. Deze gegevens werden geanalyseerd op het niveau van de 67 vestigingen die aan het onderzoek deelnamen.

Het percentage scholen dat bereid was in het onderzoek te participeren was relatief gering (28%). Een analyse van de non-respons, waarbij een vergelijking werd gemaakt met de populatie van scholen op basis van hun schooltype en -breedte, denominatie en grootte, gaf aan dat er geen indicaties waren voor het ontbreken van repre-

sentativiteit. De responspercentages van docenten binnen de deelnemende scholen varieerden van 20% tot 71%, met een gemiddeld responspercentage van 46%.

## De ontwikkeling en validering van de vragenlijst "Schoolcultuur in het voortgezet onderwijs"

In het eerste deel van het onderzoek stond de constructie en validering van een vragenlijst voor het meten van schoolcultuur centraal. In hoofdstuk 4 van dit proefschrift is hiervan verslag gedaan. In hoofdstuk 2 is het theoretische kader beschreven waarop de vragenlijst is geënt.

De constructie van de vragenlijst *Schoolcultuur in het voortgezet onderwijs* is gebaseerd op het concurrerende waarden raamwerk ('Competing Values Framework') dat door Quinn en zijn collega's is ontwikkeld (Quinn, 1988; Quinn & Rohrbaugh, 1983). De gedachtegang achter dit raamwerk is gegrondvest in het structureel functionalisme, waarvan Radcliffe-Brown in de antropologie, en Parsons en Merton in de sociologie belangrijke voortrekkers zijn geweest. De kern van het structureel-functionalisme is dat ieder systeem verschillende functies dient te vervullen om te kunnen blijven voortbestaan. Schein (1985) heeft hier op voortgebouwd in zijn beschrijving van het ontstaan van culturen in organisaties. Iedere organisatie worstelt met problemen van integratie en aanpassing, en werknemers ontwikkelen een collectief waardensysteem om met deze problemen om te kunnen gaan.

In het concurrerende waarden raamwerk worden vier benaderingen van organiseren weergegeven. Conceptueel gezien kunnen deze vier benaderingen beschreven worden aan de hand van de mate waarin deze intern dan wel extern gericht zijn, en de mate waarin zij gericht zijn op flexibiliteit dan wel beheersing. Een *interne gerichtheid* houdt in dat de organisatie zelf, d.w.z. de processen binnen de organisatie en de betrokkenheid en het welzijn van de werknemers, centraal staan. Een *externe gerichtheid* geeft weer dat met name de relatie met de omgeving centraal gesteld wordt, doordat de organisatie aandacht heeft voor de eisen die de omgeving aan haar stelt, of doordat de organisatie zich richt op hetgeen zij aan de omgeving wil bijdragen of daarin wil bereiken. *Beheersing* houdt in dat, tot op zekere hoogte, geprobeerd wordt het gedrag van medewerkers zoveel mogelijk te sturen. *Flexibiliteit* daarentegen verwijst naar het feit dat medewerkers een zekere mate van eigen verantwoordelijkheid en vrijheid krijgen om hun werkzaamheden uit te voeren. Eerder onderzoek naar deze benaderingen heeft laten zien dat op grond hiervan vier verschillende dimensies kunnen worden onderscheiden (cf. Denison & Mishra, 1995; Van Muijen, 1994; Zammuto & Krakower, 1991), die we in dit onderzoek hebben aangeduid

als het 'human relations' model, het open systeem model, het rationele doel model en het interne proces model.

Het 'human relations' model is gebaseerd op de uitgangspunten zoals deze door de zogeheten Human Relations beweging in de organisatiekunde geformuleerd zijn. Deze beweging kwam op als reactie op de klassieke organisatiemodellen van Taylor en Fayol, waarin een mechanistische visie op organisatie en management werd ontvouwd. De Human Relations beweging legde daarentegen de nadruk op de menselijke kant van management, uitgaande van de veronderstelling dat een voorwaarde voor een effectieve organisatie is dat medewerkers gemotiveerd zijn om voor de organisatie te werken, en zich binnen de organisatie op hun plaats voelen. Belangrijke waarden die verbonden zijn aan dit model zijn een goed moreel van werknemers, aandacht voor hetgeen andere mensen beweegt en betrokkenheid bij de organisatie.

De tweede benadering, het open systeem model, verwijst naar waarden die verband houden met de wijze waarop de organisatie omgaat met de eisen van en de veranderingen in de omgeving. Deze benadering is gegrondvest in de open systeem benadering en de contingentiebenadering binnen de organisatiekunde. De onderliggende gedachte hierbij is dat organisaties afhankelijk zijn van hun omgeving waar het hun middelen betreft, en dat organisaties alleen adequaat kunnen functioneren wanneer de activiteiten van de organisatie door groepen en actoren in de omgeving als legitiem worden ervaren. Dit impliceert dat de organisatie voeling houdt met haar omgeving, en zich hieraan wanneer nodig aanpast. Waarden die centraal staan binnen deze benadering zijn om die reden verandering, innovatie en aanpassing. Deze waarden worden als belangrijk gezien om de noodzakelijke middelen te verwerven, en om een draagvlak te bewerkstelligen voor het handhaven en verder groeien van de organisatie.

De derde benadering is getypeerd als het rationele doel model. Deze benadering vindt haar oorsprong in economische theorieën binnen de organisatiekunde. In deze theorieën worden organisaties gezien als systemen die gericht zijn op het bereiken van vooraf gestelde doelen. Geprobeerd wordt deze doelen te bereiken door na te gaan welke activiteiten hiervoor nodig zijn, en op welke termijn deze te realiseren zijn. Door deze gelijktijdige aandacht voor het rationeel structureren van activiteiten, is het rationele doel model tot op zekere hoogte verwant met het interne proces model, dat hieronder besproken wordt. In beide wordt geprobeerd het proces vast te leggen. Het onderscheid tussen beide is er in gelegen dat in het rationele doel model de specificatie van activiteiten gericht is op het realiseren van doelen. Om die reden kunnen activiteiten tussentijds worden aangepast wanneer blijkt dat de gestelde doelen niet worden bereikt. Centrale waarden in het rationele doel model zijn derhalve het bereiken van doelen en prestaties.

De vierde benadering betreft het interne proces model. Deze benadering verwoordt een visie op organiseren die is afgeleid van Weber's beschrijvingen van bureaucratieën, en de inzichten uit de zogeheten 'scientific management' benadering. Het is gebaseerd op de veronderstelling dat een organisatie alleen effectief kan functioneren wanneer onzekerheden die het organisatieproces kunnen verstoren, zoveel mogelijk worden voorkomen. Belangrijke waarden in dit model zijn dan ook stabiliteit, continuïteit en voorspelbaarheid.

Op basis van deze vier dimensies is een voorlopige vragenlijst ontwikkeld, die bestond uit acht schalen. Deze acht schalen zijn geconstrueerd op basis van de twee centrale waardenoriëntaties binnen elk van de dimensies, zoals deze door Quinn en Rohrbaugh (1983) zijn onderscheiden. De bruikbaarheid van deze vragenlijst is nagegaan in twee opeenvolgende kwalitatieve onderzoeken. Het eerste kwalitatieve onderzoek betrof een dieptestudie op één school. Dit onderzoek had tot doel na te gaan in hoeverre de gebruikte operationalisatie van schoolcultuur een juiste afspiegeling vormde van de waarden en normen die binnen een school voor voortgezet onderwijs kunnen worden gevonden. Daarnaast had het onderzoek tot doel na te gaan in hoeverre de gevonden waarden en normen met behulp van een vragenlijst in kaart konden worden gebracht. In het tweede kwalitatieve onderzoek, waaraan vier scholen deelnamen, stond centraal in hoeverre scholen van elkaar verschilden op elk van de onderscheiden cultuurschalen. Tevens werd in dit tweede onderzoek nader ingegaan op de vraag naar de bruikbaarheid en haalbaarheid van vragenlijsten om de cultuur van scholen in kaart te brengen.

Op basis van deze kwalitatieve onderzoeken werd de vragenlijst aangepast. De aangepaste versie bestaat uit vier schalen, die elk één van de vier dimensies van het concurrende waarden model vertegenwoordigen, waarbij elke schaal bestaat uit 10 items. In een pilot onderzoek, waaraan vijf scholen deelnamen, is de betrouwbaarheid en validiteit van dit instrument nagegaan. Doel van het pilot-onderzoek was om te bepalen of de vier dimensies door de empirie ondersteund werden. Met het oog hierop werd een principale componenten analyse met varimax rotatie uitgevoerd. De resultaten van deze analyse ondersteunden het onderscheiden van vier afzonderlijke cultuurdimensies –op basis van het concurrerende waarden raamwerk.

Vervolgens is het instrument onderworpen aan een confirmatieve factoranalyse in een onderzoek onder een representatieve steekproef van scholen voor voortgezet onderwijs. Dit confirmatieve onderzoek, waaraan 40 scholen deelnamen, bevestigde in hoofdlijnen de resultaten die in het pilot-onderzoek waren gevonden. Tevens bleken de vier schalen betrouwbaar te zijn gemeten op schoolniveau.

## De cultuur van scholen voor voortgezet onderwijs

Het tweede deel van het onderzoek, beschreven in hoofdstuk 5, had betrekking op de eerste onderzoeksvraag, 'Wat zijn culturele kenmerken van scholen voor voortgezet onderwijs in Nederland, en in hoeverre worden deze kenmerken beïnvloed door de context van de school?'

Allereerst werd de relatie tussen de cultuur en de denominatie van scholen nader onderzocht. Daaruit bleek dat er duidelijke verschillen bestonden tussen denominaties voor elk van de vier cultuurdimensies. Openbare scholen bleken niet af te wijken van andere scholen met betrekking tot het 'human relations' model en het interne proces model, terwijl zij meer waarde hechtten aan het open systeem model, en minder waarde hechtten aan het rationele doel model. Katholieke scholen bleken niet af te wijken van andere scholen met betrekking tot het 'human relations' model en het interne proces model. Waar het waarden behorende tot het open systeem model betrof, bleken katholieke scholen hieraan minder waarde te hechten dan scholen van andere denominaties. Daarentegen werd relatief meer waarde gehecht aan het rationele doel model. Protestant-christelijke scholen, aan de andere kant, hechten relatief veel belang aan het interne proces model, en relatief weinig belang aan het open systeem model in vergelijking met scholen van andere denominaties. Algemeen-bijzondere scholen, tenslotte, onderscheiden zich niet van de andere denominaties ten aanzien van één van de modellen.

Daarnaast is nagegaan of er een relatie bestaat tussen de cultuur en de grootte van de school. Daarbij bleek dat grote scholen meer belang hechten aan innovatie en verandering dan kleine scholen. Voor de overige drie cultuurdimensies werd een dergelijke relatie niet vastgesteld.

Teneinde inzicht te krijgen in de cultuurtypen van scholen voor voortgezet onderwijs is een agglomeratieve hierarchische clusteranalyse uitgevoerd, waarbij gebruik is gemaakt van Ward's methode voor het samenstellen van de clusters. Op basis van deze methode zijn vijf clusters onderscheiden.

Het eerste cluster bestaat uit 19 scholen. De scholen in dit cluster worden gekenmerkt door een gerichtheid op de interne organisatie. Scholen binnen dit cluster leggen de nadruk op waarden die behoren tot de human relations gerichtheid en de interne proces gerichtheid. Met andere woorden, aan de ene kant worden waarden als samenwerking en wederzijdse ondersteuning belangrijk gevonden door de leden van de school, aan de andere kant wordt belang gehecht aan stabiliteit en continuïteit. Scholen binnen dit cluster kunnen derhalve getypeerd worden als relatief gesloten. Tegelijkertijd wordt binnen scholen behorend tot dit cluster relatief weinig belang gehecht aan waarden behorend tot de open systeem gerichtheid en de rationele doel gerichtheid. Het beeld dat

hieruit naar voren komt is dat van een school waarin docenten een hecht team vormen, en waarbinnen zaken gestructureerd verlopen. Veranderingen in de omgeving van de school worden als een verstoring gezien van de wijze waarop men gewend is zaken aan te pakken. Ook is er geen sterke impuls om verbeteringen door te voeren die zouden kunnen leiden tot betere prestaties. De school kenmerkt zich, met andere woorden, door een sterke gerichtheid op de status quo.

Het tweede cluster bestaat uit 11 scholen. De scholen in dit cluster worden gekenmerkt, in tegenstelling tot de scholen uit het voorgaande cluster, door een relatief geringe nadruk op regels, stabiliteit en voorspelbaarheid. Daarnaast kenmerken deze scholen zich door grote nadruk op waarden als doelgerichtheid, prestatiegerichtheid en effectiviteit. Zaken met betrekking tot de onderlinge verhoudingen binnen de school en de gerichtheid op verandering en vernieuwing, worden daarentegen slechts in geringe mate van belang gevonden. Het beeld dat hieruit naar voren komt, is een school waarin prestaties van leerlingen centraal staan. De activiteiten die door docenten en de schoolleiding worden ondernomen lijken steeds gerelateerd te zijn aan de resultaten die de school boekt, door het leren van leerlingen te stimuleren. Dit is de primaire verantwoordelijkheid van ieder staflid, en cruciaal in dit opzicht is de verhouding tussen docent en leerling.

Het derde cluster bestaat uit 22 scholen met een duidelijke gerichtheid op innovatie en aanpassing. De nadruk op het open systeem model onderscheidt dit cluster van de vier overige clusters. Docenten en schoolleiders in deze scholen worden gekenmerkt door een positieve houding tegenover verandering. Daarnaast wordt samenwerking en werderzijdse ondersteuning belangrijk geacht. Tegelijkertijd wordt relatief weinig waarde gehecht aan waarden als stabiliteit en continuïteit. Het beeld dat aldus van deze scholen naar voren komt, is een school die postief tegenover innovaties staat, en die door de interne organisatie in staat is deze veranderingen schoolbreed in te voeren. Tevens blijken scholen uit dit cluster relatief laag te scoren op waarden die tot het rationele doel model behoren. Dit wekt de indruk dat de beweegredenen om veranderingen door te voeren niet primair liggen bij het streven naar betere leerlingresultaten, maar veeleer in het voorstaan van meer procesmatige aspecten van de vernieuwingen.

Het vierde cluster bestaat uit 10 scholen, die sterk gericht zijn op beheersmatigheid. Scholen behorend tot dit cluster hechten relatief veel belang aan waarden behorend tot het interne proces model en het rationele doelmodel. Aan de andere kant wordt er verhoudingsgewijs weinig belang gehecht aan waarden die behoren tot het human relations model en het open systeem model. Het beeld dat hieruit naar voren komt is dat van een school die gericht is op het bereiken van goede resultaten, en die probeert dit te bereiken door een stabiele omgeving voor docenten en leerlingen te creëren, en door mogelijke verstoringen van de continuïteit zoveel mogelijk te voorkomen. Als zodanig

kunnen scholen uit dit cluster beschouwd worden als de tegenpool van de scholen uit het voorgaande cluster, waarin juist flexibiliteit centraal stond.

Het vijfde cluster, tenslotte, bestaat uit vijf scholen. Scholen binnen dit cluster worden gekenmerkt door een nadruk op waarden behorend tot het 'human relations' model en het rationele doel model. Dat betekent dat men probeert de prestaties van de school te verbeteren, en dat dit gebeurt in een team waarin samenwerking en wederzijds vertrouwen centraal staan. Daarnaast valt op dat de scholen uit dit cluster positieve waarden kennen voor de beide andere dimensies, hoewel deze waarden niet significant verschillen van de overige clusters.

Een nadere analyse liet zien dat de vijf clusters samenhangen met de denominatie van de school. Openbare scholen worden voornamelijk aangetroffen in het eerste en het derde cluster. Protestant-christelijke scholen bevinden zich met name in het eerste cluster. Katholieke scholen en algemeen-bijzondere scholen daarentegen zijn meer verspreid over de verschillende clusters. Tussen de clusters en schoolgrootte werd geen verband gevonden.

## Schoolcultuur en schooleffectiviteit

In hoofdtuk 6 is verslag gedaan van het onderzoek naar de relatie tussen schoolcultuur en schooleffectiviteit, volgend op de onderzoeksvraag 'bestaat er een verband tussen de cultuur en de prestaties van scholen voor voortgezet onderwijs?' Daarbij zijn prestaties van scholen gemeten aan de hand van twee criteria: gemiddelde leerlingprestaties, gemeten aan de hand van resultaten op het centraal schriftelijk eindexamen, en de gemiddelde doorstroomcijfers in de bovenbouw van het voortgezet onderwijs. Deze criteria zijn ontleend aan gegevens die door de Inspectie van het Onderwijs openbaar worden gemaakt.

De gemiddelde leerlingprestaties en doorstroomcijfers zijn bepaald op grond van drie opeenvolgende jaren (1997-1999), en uitgesplitst naar schooltype. Voor elk van de schooltypen bleken de resultaten op het centraal schriftelijk examen van een bepaalde school significant te correleren met de resultaten van het daaraan voorafgaande jaar, variërende van 0,51 tot 0,81. Voor de doorstroomcijfers was dit verband minder sterk, variërend van 0,16 tot 0,88, hoewel in de meeste gevallen een significant verband werd gevonden tussen opeenvolgende jaren.

In de analyses zijn steeds de gemiddelden over drie jaren gebruikt. Deze gemiddelde waarden zijn gecorrigeerd voor de leerlinginstroom, aan de hand van het percentage leerlingen dat tot een culturele minderheid behoort. Voor scholen met een VBO afdeling is het percentage IVBO-leerlingen als aanvullende correctiemaat gehanteerd.

Ten aanzien van de relatie tussen schoolcultuur en leerprestaties waren de volgende hypothesen geformuleerd:

Hypothese A *Wanneer de leden van een school veel waarde toekennen aan doelgerichtheid en prestatiegerichtheid zullen hogere leerlingprestaties worden behaald*

Hypothese B *Wanneer de leden van een school veel waarde toekennen aan samenwerking en collegialiteit zullen hogere leerlingprestaties worden behaald*

Hypothese C *Wanneer de leden van een school veel waarde toekennen aan vernieuwing zullen hogere leerlingprestaties worden behaald*

Hypothese D *Wanneer de leden van een school veel waarde toekennen aan regelgerichtheid zullen hogere leerlingprestaties worden behaald*

Deze hypothesen werden niet ondersteund door de resultaten van dit onderzoek. Noch voor waarden behorende tot het rationele doel model (*Hypothese A*), noch voor waarden behorende tot het 'human relations' model (*Hypothese B*), het open systeem model (*Hypothese C*), en het interne proces model (*Hypothese D*) werd een relatie gevonden met leerprestaties. Met andere woorden, de doorgaans in schooleffectiviteits- en schoolverbeteringsonderzoek gevonden effecten van culturele factoren worden niet bevestigd door de resultaten van dit onderzoek.

Een meer complexe relatie tussen de vier cultuurdimensies en effectiviteit is door Quinn (1988) geopperd. Hij geeft aan dat organisaties met cultuurprofielen waarin alle vier dimensies worden benadrukt –zonder op één of enkele van de dimensies teveel nadruk te leggen– effectief zullen zijn. Om deze bewering te exploreren zijn de vijf cultuurprofielen gerelateerd aan leerlingprestaties. De cultuurprofielen bleken echter niet bruikbaar om verschillen in leerprestaties tussen scholen te verklaren.

Vervolgens is de relatie tussen schoolcultuur en het doorstroompercentage in de bovenbouw onderzocht. Significante effecten op de doorstroom werden gevonden voor zowel waarden behorende tot het interne proces model als voor waarden behorende tot het rationele doelmodel. Een toename van één punt op de vijfpuntsschaal van het interne proces model hing samen met een toename van 8 % in de doorstroom. Een toename van één punt op de vijfpuntsschaal van het rationele doel model bleek samen te hangen met een toename van 6 % in de doorstroom. In beide gevallen gaat het hierbij om aanzienlijke effecten, zoals de respectievelijk effectgroottes van 0.53 en 0.48 voor het VBO, 0.89 en 0.80 voor het MAVO, 1.26 en 1.12 voor het HAVO, en 1.02 en 0.92 voor het VWO duidelijk maken.

Aansluitend is de relatie onderzocht tussen de cultuurprofielen en de doorstroomcijfers van scholen. Daaruit bleek dat het doorstroompercentage het hoogst was in

scholen die behoren tot het vierde cluster (sterk beheersmatige oriëntatie). Vergeleken met het vierde cluster hadden scholen behorend tot het eerste, tweede en derde cluster significant lagere doorstroompercentages. De effectgroottes voor de profielen bleken kleiner te zijn dan de gevonden effectgroottes voor het interne proces model en het rationele doel model. Bovendien bleek het model met de profielen slechter bij de gegevens te passen dan het model waarin de afzonderlijke cultuurdimensies zijn opgenomen. Om die reden is het effect van scholen behorend tot het vierde cluster toegeschreven aan de relatief hoge waarden van scholen binnen dit cluster op het interne proces model en het rationele doel model.

Samenvattend, er is in deze studie geen relatie gevonden tussen elk van de onderscheiden cultuurdimensies, dan wel tussen één van de cultuurprofielen, en leerlingprestaties. Wel is een relatie gevonden tussen de cultuurdimensies en doorstroomcijfers. Daarbij bleek dat scholen die sterk gericht zijn op stabiliteit en continuïteit, alsmede scholen die sterk prestatiegericht zijn, betere doorstroomcijfers behalen dan scholen die aan de genoemde waarden minder belang toekennen.

## Aanbevelingen voor nader onderzoek

Tot slot zijn in hoofdstuk 7 een aantal aanbevelingen voor nader onderzoek geschetst. Een eerste aanbeveling hangt samen met het gegeven dat in het onderhavige onderzoek inhoudselementen van cultuur centraal hebben gestaan. Er is geen aandacht besteed aan andere aspecten van cultuur, zoals de homogeniteit en sterkte van cultuur (cf. Maslowski, 1997), hoewel deze aspecten ook frequent in verband worden gebracht met de effectiviteit van onderwijsorganisaties. Het lijkt derhalve raadzaam in nader onderzoek een mogelijke relatie tussen deze cultuuraspecten en effectiviteit te bestuderen.

Een tweede suggestie voor nader onderzoek heeft betrekking op de waarden van de individuele medewerker in relatie tot de waarden die binnen school worden gedeeld. In dat verband wordt wel gesproken over de mate van 'cultural fit'. De achterliggende gedachte daarbij is dat medewerkers wier waarden overeenkomen met de schoolwaarden zich meer betrokken voelen bij de school, en zich meer zullen inzetten om de school goed te laten functioneren. Deze gedachtegang biedt tevens aanknopingspunten voor het onderzoek naar de effectiviteit van leerkrachten.

Daarnaast is aanbevolen om meer onderzoek te entameren naar processen van cultuurvorming binnen scholen. Aangegeven is dat met name netwerkanalyse daarvoor interessante aangrijpingspunten lijkt te bieden. Uitgaande van de veronderstelling dat waarden en normen gevormd worden doordat leerkrachten met elkaar en met de school-

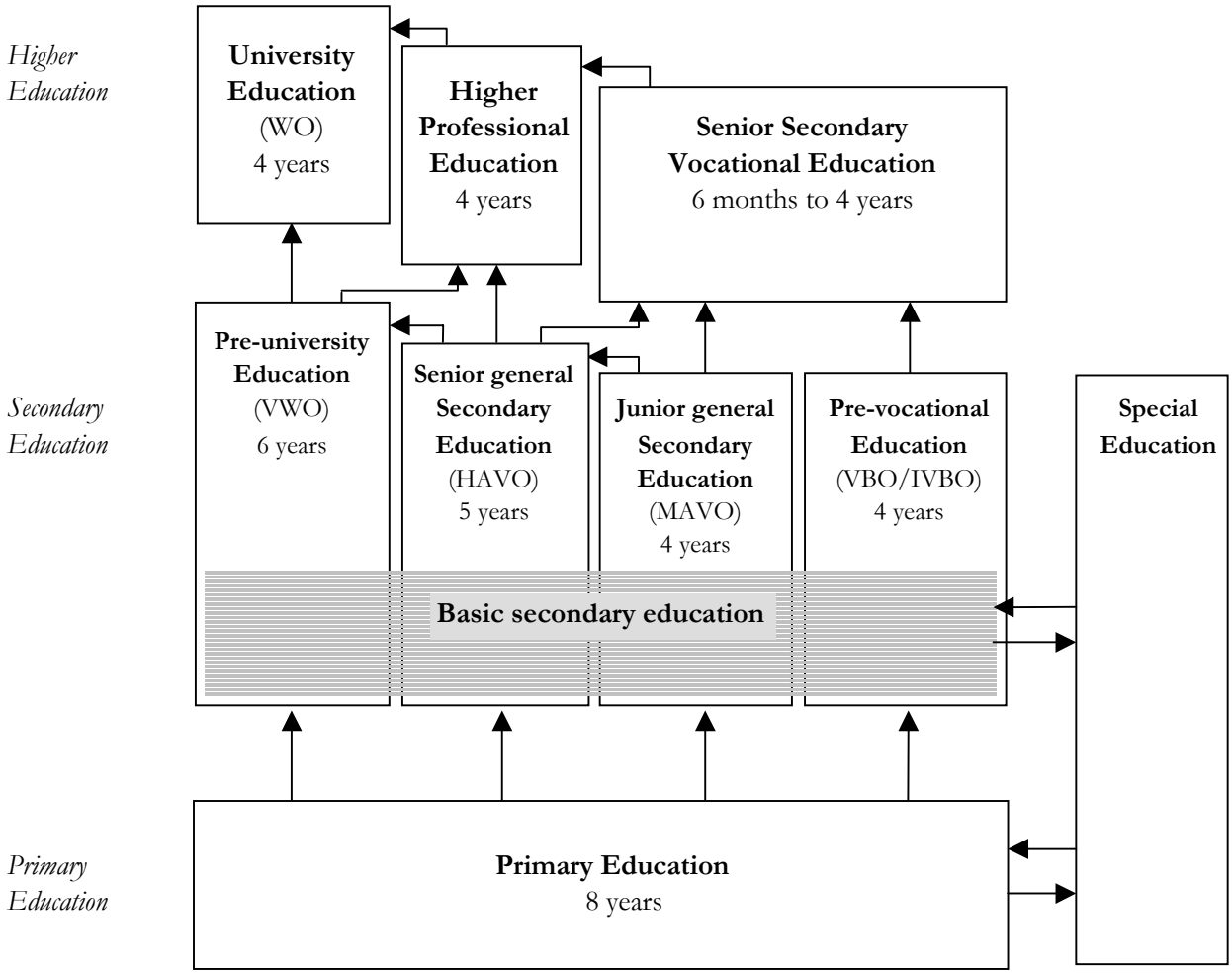
leiding interacteren, kan worden nagegaan welke personen hierin een centrale rol spelen, of er subculturen in school bestaan, en in hoeverre er sprake is van een verbinding tussen deze subculturen.

# APPENDIX I

# THE EDUCATION SYSTEM IN THE NETHERLANDS

## THE EDUCATION SYSTEM IN THE NETHERLANDS [1]

### A. General




### B. Secondary education in the Netherlands

Most students enter secondary education at the age of 12. Secondary education is divided into four tracks: (1) pre-vocational education (VBO); (2) junior general secondary education (MAVO); (3) senior general secondary education (HAVO); and (4) pre-university education (VWO).

*Pre-vocational education (VBO).* Pre-vocational education lasts four years and is intended to prepare students for secondary vocational education (senior secondary vocational education and apprenticeships). There are fifteen disciplines within VBO: building techniques, metalworking,

[1] This characterization of the education system in the Netherlands is largely based on the information provided by the Dutch Ministry of Education, Culture and Science (http://www.minocw.nl)

electrical engineering, motor mechanics, fitting techniques, catering, printing technology, caring occupations, beauty care and hairdressing, fashion and clothing, retailing, clerical work, commerce, agriculture and the natural environment, and food technology. In general, schools with a VBO track offer only part of these disciplines. A number of VBO schools have a separate department for individualized education (IVBO), where students who need extra help can be taught at their own pace.

*Junior general secondary education (MAVO).* Like VBO, junior general secondary education also lasts four years. In contrast to the more vocationally oriented VBO, MAVO provides more general education. Like VBO, MAVO prepares students for senior secondary vocational education (MBO) and apprenticeships. Furthermore, students may move on from MAVO to HAVO.

*Senior general secondary education (HAVO).* Senior general secondary education lasts five years and qualifies students to enter higher professional education (HBO), although in practice many of them go on to either pre-university education (VWO) or MBO.

*Pre-university education (VWO).* Pre-university education lasts six years and prepares students for university, although in practice a number of students prefer to enroll on higher professional education courses. There are three types of VWO: the 'Atheneum' (where Latin is sometimes offered as an optional subject), the 'Gymnasium' (where Greek and Latin are compulsory) and the 'Lyceum' (where both subjects are optional).

In 1997, there were over 830,000 students attending around 720 secondary schools. There are both publicly run and private schools. In the past the individual tracks were often provided in separate schools, but these days these have generally been merged to produce broad-based combined schools. As a result, students can now choose from a range of different types of education within the same school. Some schools have remained independent; many of these provide only one type of education (for example, pre-university education with Latin and Greek). The length of the summer holiday is fixed at seven weeks, but to spread the holiday crowds the holidays are staggered across the three regions (northern, central and southern) into which the country is divided for this purpose.

## C. Basic secondary education

Students in the first three years of VBO, MAVO, HAVO and VWO (the period of basic secondary education) are taught a compulsory core curriculum of 15 subjects: Dutch language, English language, German or French language, History and Politics, Geography, Economics, Physical Education, Mathematics, Physics and Chemistry, Biology, Self-Sufficiency (social and life skills), IT studies, Technology and two creative subjects. For the latter, the school may choose from: drawing, handicrafts (general crafts or textile crafts), photography, film/audiovisual studies, music, drama and dance. In Friesland, students also receive Frisian language lessons unless the school has applied for exemption.

For each subject, the government has formulated attainment targets defining the knowledge and skills which students must have acquired by the end of the period of basic secondary education. In these attainment targets, the emphasis is on coherence, particularly between the education provided and the student's own world. In addition, schools are given scope to cater for the differences between students. General educational objectives have also been formulated. These are not subject-based like the attainment targets but are cross-disciplinary objectives relating to social issues and skills. These general educational objectives are a compulsory aspect of basic secondary education, although how they can best be addressed is a matter that is left to the subject matter departments in the individual school to agree amongst themselves.

Most secondary schools combining more than one track have a one or two-year transition period before children have to make a final choice between VBO, MAVO, HAVO and VWO. During the first three years of secondary education, the school week is composed of at least 32 teaching periods, each usually lasting 50 minutes. Of these 32 periods, 25 are devoted to the compulsory core curriculum. The remaining margin of seven teaching periods may be used as the school sees fit. Their choices are many and various. One school may use the time for religious studies, another may offer extra languages like Turkish and Arabic, while a third will prefer to spend the time on extra coaching or vocational activities. Via the school participation council, parents can influence the way in which this time is used. In some cases there is a narrower margin: all students attending a 'gymnasium' have to be taught Greek and Latin, and HAVO and VWO students have to take a third modern language.

At the end of the period of basic secondary education, students are assessed to see whether they have acquired the knowledge, understanding and skills defined in the attainment targets. For each subject, apart from Physical Education, students have to sit at least one final test (set nationally). There are, however, variations within the tests to enable schools to cater for the differing learning styles and abilities of their students. Schools may also supplement these tests with their own examination papers. The stage at which tests are taken can vary from one subject to another. One part of the curriculum may be completed after two years, while another takes three years to complete. It is up to the school to decide. The tests do not lead to formal qualifications, but provide a basis on which to assess the progress of students towards achieving the attainment targets. The tests are supplied by the National Institute for Educational Measurement (CITO).

## D. Special secondary education

In addition to VBO, MAVO, HAVO and VWO, there are also VSO schools (schools for special secondary education). These are special schools for children with physical disabilities, impaired hearing or vision, or chronic illnesses. Children with learning and/or behavioural difficulties also frequently attend VSO schools. Special secondary schools have formed consortia with mainstream secondary schools in their areas (usually MAVO, VBO or IVBO schools). The aim of such cooperation is to put together a range of courses that caters for the varying needs of the students and so improves their chances of obtaining school-leaving qualifications or going on to vocational training.

Every school is legally required to set up a participation council, with the exception of some private schools which are exempt from this obligation for religious or ethical reasons. In secondary schools, the participation council is composed of two sets of representatives: 1) parents and/or students and 2) teaching and support staff. The approval of the participation council must be sought in relation to matters such as facilities for students and students' rights and obligations as laid down in the students' charter. Many schools also have separate councils for parents, staff and students. Through the parents' council, parents can state their views on matters of particular importance to them. Private schools are usually run by an association, which parents can join. Their membership then gives them voting rights in the association and hence a share in decision-making on the running of the school.

The main developments in secondary education relate to teaching itself. There are three interconnected aims: to further the broad personal development of all students, to promote an active and independent attitude towards learning and to cater for differences between students. These aims are the constant motif running through the recent reforms of the curriculum: the introduction of basic secondary education (see above), the changes in the top years of VBO/MAVO and the innovations in the second stage of HAVO and VWO. All these changes are being coordinated by the secondary education process management team.

## E. Reforms

Following the period of basic secondary education (described above), students spend the second stage of their courses preparing for the school-leaving examinations, which are compiled and administered under central government supervision. The national examinations are preceded by internal examinations administered by the school itself. At present, students in all the different types of education choose their examination subjects before embarking on the last two years of their courses. Dutch and at least one foreign language are standard for every student. Students on VBO, MAVO and HAVO courses sit examinations in six subjects, while those in VWO sit exams in seven subjects.

This is all about to change. From 1 August 1999, the new VMBO (pre-vocational secondary education) will replace both VBO and MAVO. It will be composed of four sectors: engineering and technology, economics, agriculture and care and welfare. Within each sector, there will be a choice of three learning pathways: 1) theoretical (MAVO), 2) vocational (available at two levels) and 3) combined theoretical and vocational. For each pathway, there will be a fixed combination of examination subjects. In addition, there will be a new kind of practical training for students who are not capable of obtaining a VBO or MAVO qualification. This will train them for direct entry to the labor market.

From 1 August 1998, a number of set subject combinations will be introduced for the second stage of HAVO/VWO, replacing the present more or less free choice of subjects. The set combinations will be: (1) science and technology; (2) science and health care; (3) economics and society; and (4) culture and society. Each of the set subject combinations will consist of: (a) a common component, which will be the same for all combinations; (b) a specialized component confined to that particular combination; and (c) an optional component.

The broad general education provided by the common component will absorb almost half of classroom time and the specialized component just over a third. The optional component which will take up the rest of teaching time will give students the chance to supplement their standard combination with subjects from other combinations, or with optional subjects like ‘information technology’ or ‘management and organization’. Around half of the optional component may be made up of non-examination subjects chosen by the school itself, such as religious education.

The reforms are intended to smooth the transition from secondary to higher education. The introduction of the concept of schools as 'places of study' will mean a greater emphasis on independent learning. This approach is based not on a set number of teaching periods, but on the time needed by the average student to master a particular amount of material, whether at school or at home. For students, the school year consists of approximately forty working weeks, each lasting forty hours. This means that 1600 hours is available for study each year. Since the second stage of HAVO takes two years, it represents a study load of 3200 hours. The second stage of VWO takes a year longer, and therefore represents a study load of 4800 hours.

## APPENDIX II

## INTERVIEW GUIDELINE SCHOOL PRINCIPAL

# INTERVIEW GUIDELINE SCHOOL PRINCIPAL

## I. Personal history

1. For how many years have you been working at this school?
2. If you try to recall the time you came here: what were your main reasons for choosing this school?
3. What surprised you at that time? Were things different from what you had expected to find?
4. If you compare the time you came here with the present: in what way has the school changed since then?
5. Did you work at other schools before you came here? Which schools?
6. What were striking differences between this school and the other schools you have worked in?

## II. School history

7. Can you tell in short what is the history of this school? When did the school start?
8. What were milestones in this history? When was there a strong redirection? Who initiated these redirections?
9. *In case the school was involved in a merger:* There has been a merger with other schools. Did any cultural differences between the merger schools exist? How were these differences addressed?
   *If there wasn't a merger*: What were the reasons for not merging with other schools, despite the strong incentive from the government to do so?
10. Who are involved in the engagement of new teachers at school? What are the main criteria for selecting the applicants? On what issues do the discussions focus if difficulties arise in choosing the best candidate?
11. What are the most important reasons of students or their parents for choosing this school?
12. What are the two most prominent strengths of your school?
13. What are the two most prominent weaknesses of your school?

## III. Aims and identity

14. This school is a public school/private school with a catholic denomination/private school with a protestant denomination. How is this school identity reflected in the school?
15. How would you describe the mission of this school? *[Highlight the different aspects of the mission]* Can you explain why this aspect is stressed?
16. What are the main objectives of this school? *[For each of the different objectives]* How is this objective realized in a concrete manner?

## IV. Change and leadership

17. Schools for secondary education are currently confronted with two major educational innovations that have to be implemented in the next two years. How were these plans received at your school? What were the main objectives to the planned innovations? Which aspects of the new plans were highly valued by the teachers at school?
18. In 1993, an educational innovation was implemented for the lower classes (Basic Education Program). Has this innovation been implemented at this school in the way it was supposed to be? What were the main problems encountered in the past four years with regard to this educational change?
19. As the principal of this school, what are your plans for the next five years? What should this school look like in about five years?
20. Do you share your vision with (some of) the school members? When you do, on which aspects do the discussions with other school members focus?

# APPENDIX III

# SCHOOL CULTURE QUESTIONNAIRES

## SCHOOL CULTURE QUESTIONNAIRES

Prior to the construction of the *School Culture Inventory* six school culture questionnaires were analysed[2]: the *School Culture Survey* (Edwards, Green & Lyons, 1996; Saphier & King, 1985; Schweiker-Marra, 1995), the *School Work Culture Profile* (Snyder, 1988), the *Professional Culture Questionnaire for Primary Schools* (Staessens, 1990, 1991*b*), a questionnaire for measuring organizational culture in primary schools (Houtveen, Voogt, Van der Vegt & Van de Grift, 1996), the *School Values Inventory* (Pang, 1996), and the *School Cultural Elements Questionnaire* (Cavanagh & Dellar, 1996). In this appendix, these instruments are described by their underlying conception of school culture, their scales, item examples for each scale, the level and format of the measures, and the reported reliability and validity of the questionnaires.

### 1. School Culture Survey

The *School Culture Survey* is developed by Saphier & King (1985) for use in seminars designed to improve school culture (Edwards, Green & Lyons, 1996)[3]. The *School Culture Survey* consists of 29 teacher norms (qualities of the environment that teachers experience), core values (what the school wants for its students) and beliefs (about how the school should operate). Rasch and factor analysis by Edwards, Green & Lyons (1996) indicated that the School Culture Survey comprises three subscales, containing 24 of the original items: (1) teacher professionalism and goal setting; (2) professional treatment by administration; and (3) teacher collaboration. A principal components analysis with varimax rotation was used to determine the factor structure. Items were interpreted as reflecting a factor if loadings were .4 or higher. Results of the analysis suggested that item intercorrelations were explained by three factors. Eigenvalues for the first three factors were 11.1, 2.3, and 1.4 respectively, explaining 51.1% of the variance. Three items were deleted because they failed to load above .4 on the first three factors. All remaining items were analyzed using the Rasch model rating scale program BIGSTEPS. Rasch analysis resulted in definition of the same three subscales as in the factor analysis. One item misfitted in the Rasch analysis and was therefore dropped.

#### *Underlying conception of culture*

School culture is conceptualized as the common set of beliefs, values and practices held by members of the school community about "the way things are done" in school (Edwards, Green & Lyons, 1996). The culture of a school is shaped by peoples' unconscious assumptions or taken-for-granted beliefs about school vision, curriculum, instruction, evaluation and organizational structure. People integrate their conceptions of these cultural elements to create meaning and

[2] Preliminary versions of this analysis were presented at the ORD'97, 21-23 May 1997, Leuven, Belgium (Maslowski, 1997b), and the ECER'98, 17-20 September 1998, Ljubljana, Slovenia (Maslowski, 1998a).

[3] Schweiker-Marra (1995) constructed a 12-item version of the School Culture Survey, using Saphier and King's cultural framework (modifying an earlier questionnaire developed by Sagor & Curley, 1991). Due to the fact that this questionnaire is less elaborated than the original version of Saphier and King (1985), and less validated than the revised version of Edwards, Green and Lyons (1996), it is not further discussed in this review.

consistency for themselves. Because culture includes deep patterns of values, beliefs and traditions that have formed over the course of the school's history, it serves as the cornerstone for school improvement. If certain norms of school culture are strong, improvements in instruction will be significant, continuous, and widespread. If norms are weak, improvements will be infrequent, random and slow (Saphier & King, 1985).

*Scales and items*

Saphier & King (1985) identify 13 behavioral norms of school culture, containing 21 items:

1. *Collegiality* (5 items). Teachers help each other and create an open atmosphere in which problems can be discussed. Item examples are: "We talk in concrete and precise terms about things we're trying in our teaching" and "We plan lessons and materials together".
2. *Experimentation* (1 item). Teachers are encouraged by administrators and colleagues to experiment with new ideas and techniques in order to improve teaching. Survey item is: "Teachers and administrators encourage me and back me up when I try new things".
3. *High expectations* (1 item). Teachers and administrators are held accountable for high performance through regular evaluations. Survey item is: "Good teaching is taken seriously here. This shows up in serious attention to teacher evaluation and letting me know clearly how I stand in relation to the expectations of the district. I get prompt and useful feedback".
4. *Reaching out to knowledge* (1 item). Teachers and supervisors are continually reaching out to knowledge about teaching skills and how students learn, in order to improve their teaching and supervision. Survey item is: "This is a curious school. We are always searching for new and improved ways to teach".
5. *Appreciation and recognition* (1 item). Administrators recognize and show their appreciation of the teachers' work. Survey item is: "There is a close relationship in this school between job perfor-mance and recognition of that performance".
6. *Professional Respect* (1 item). Administrators and parents trust the teacher's professional judgment and show confidence in the teacher's ability to carry out his or her professional development and to design instructional activities. Survey item is: "I feel trusted and encouraged to make instructional decisions on my own ... and my boss backs me up when I do".
7. *Caring, celebration, and humor* (1 item). Teachers show their caring for each other and show their awareness of significant events in each others' lives, and celebrate benchmarks in the life of the school. Survey item is: "We enjoy being with and around one another. We offer comfort and help when needed and join in celebration together".
8. *Protecting what's important* (2 items). Administrators protect teachers' instruction and planning time by keeping meetings and paperwork to a minimum. Survey items are: "We are protected from un-reasonable demands on our time and energy that interfere with contact time with students and instructional planning" and "Meetings are worthwhile and productive".
9. *Traditions* (1 item). Teachers and administrators keep up traditions within the school. Survey item is: "We have annual events and ceremonies we look forward to each year".
10. *Tangible support* (1 item). Teachers who want to improve their instruction, are offered time and resources to do so. Survey item is: "Priorities for use of money and time show me that the devel-opment of staff is a top priority".
11. *Decision-making* (2 items). Teachers participate in decision-making processes which affect their work directly, and are able to raise issues for decision-making. Survey items are: "I feel our decision-making processes are fair and legitimate" and "I feel I am consulted about decisions to be made in this school and that I am listened to and can influence policy".

12. *Honest, open communication* (3 items). Teachers and administrators take responsibility for sending their own messages. Teachers can speak to their colleagues and administrators directly without fear of damaging their relationship. Item examples are: "People speak honestly but respectfully to one another. We are not afraid to disagree and can do so without jeopardizing our relationships" and "Conflicts between individuals are resol-ved quickly and intelligently".
13. *Initiative* (1 item). Teachers are encouraged to take initiatives that will improve school processes. Survey item is: "Staff members show initiative in developing new ideas for the school and seeing them come to life".

Four beliefs are identified, containing 4 items:

14. *Collective Responsibility* (1 item). Teachers feel they are collectively responsible for the pupils at school. Survey item is: "We work together in this school as a team and feel responsible collectively for our students and how they're doing".
15. *Efficaciousness* (1 item). Teachers feel their efforts contribute to the progress pupils make. Survey item is: "I believe I as a teacher and we as a school can make a real difference for kids".
16. *Continuous Improvement and Non-Defensiveness* (1 item). Teachers feel they are continuously trying to improve their instruction, being open to suggestions of colleagues and suggesting improvements to others. Survey item is: "We acknowledge our imperfections readily. No matter how good we perceive ourselves to be, we are always striving to get better. We constantly solicit input and feedback".
17. *Reflective Environment* (1 item). Teachers feel their environment stimulates them to reflect on their work. Survey item is: "We have an environment that encourages thoughtful stepping back to do analysis of our teaching and curriculum decisions".

Finally, core values (including goals) are identified, containing 4 items:

18. *Goals* (1 item). In school goals are formulated, which are clear to all school members. Survey item is: "Enough time is spent clarifying and understanding the goals of our school each year".
19. *Core Values* (3 items). All school members know in what direction the school is heading. There is a clear mission. Item examples are: "Overall, we know what we stand for as a school" and "As a school we can say what we want the big-picture outcomes to be for our students after their years with us. Anyone visiting us could tell them, too, by watching what we do (even if no one told them)".

Rasch and factor analysis by Edwards, Green and Lyons (1996) indicated that the *School Culture Survey* comprises three subscales, containing 24 items:

1. *Teacher Professionalism and Goal Setting* (10 items). Teachers have a clear, collective vision of what they want for their students, and try to improve their instruction to create an optimal learning environment for their pupils. Item examples are: "Enough time is spent clarifying and understanding the goals of our school each year" and "We acknowledge our imperfections readily. No matter how good we perceive ourselves to be, we are always striving to get better. We constantly solicit input and feedback".
2. *Professional Treatment by Administration* (8 items). Administrators trust the teacher's professional judgment and show confidence in the teacher's ability to carry out his or her professional development and to design instructional activities. Item examples are: "I feel trusted and encouraged to make instructional decisions on my own ... and my boss backs me up when I do" and "Good teaching is taken seriously here. This shows up in serious attention to teacher evaluation and letting me know clearly how I stand in relation to the expectations of the district. I get prompt and useful feedback".

3. *Teacher Collaboration* (6 items). Teachers help each other and create an open atmosphere in which problems can be discussed. Item examples are: "We talk in concrete and precise terms about things we're trying in our teaching" and "This is a curious school. We are always searching for new and improved ways to teach".

Five items were deleted from the Saphier and King (1985) version, concerning the scales *Caring, celebration and humor*, *Protecting what's important* (1 item), *Traditions*, *Honest Open Communication* (1 item), and *Efficaciousness*.

*Level and format*

The *School Culture Survey* is a 29 item (Saphier & King, 1985), its revised form a 24 item (Edwards, Green & Lyons, 1996) self-report scale. The response scale is 1 to 5, with 1 being "Almost Never", 2 being "Less often than not", 3 being "About half the time", 4 being "More often than not", and 5 being "Almost Always".

*Reliability and validity*

Edwards, Green & Lyons (1996) found the three subscales, (1) teacher professionalism and goal setting, (2) professional treatment by administration, and (3) teacher collaboration, to be conceptually coherent, with internal consistency reliabilities ranging from .81 to .91 (Table III-1). The distribution for each sub-scale was approximately normal.

*Table III-1 Internal consistency reliabilities for the School Culture Survey scales*

| Scales of the School Culture Survey | No. of items | $\alpha$ |
|---|---|---|
| Teacher Professionalism and Goal Setting | 10 | 0.91 |
| Professional Treatment by Administration | 8 | 0.86 |
| Teacher Collaboration | 7 | 0.81 |

The subscales were all significantly correlated, though at a moderate rather than high level, supporting the notion that the subscales are measuring distinct facets of school culture. To determine criterion-related validity, correlations with efficacy, empowerement, and conceptual level were computed. Efficacy was determined with the *Teacher Efficacy Scale* (Gibson & Dembo, 1984), which measures Personal Teaching Efficacy (self-efficacy) and Teaching Efficacy (outcome expectancy). Empowerment was measured with the *Vincenz Empowerement Scale* (Vincenz, 1990). The *Vincenz Empowerent Scale* consists of six subscales: (1) Potency, (2) Independence, (3) Relatedness, (4) Motivation, (5) Values, and (6) Joy of Life. It is directed at measuring overall personal empowerement and effective involvement with one's environment. Finally, teachers' conceptual level was measured by the *Paragraph Completion Method* (Hunt, Butler, Noy & Rosser, 1978).
All three subscales of the *School Culture Survey* were significantly correlated with personal teaching efficacy, and with the "Values" and "Joy of Life" subscales of the Vincenz Empowerent Scale (Vincenz, 1990). These correlations, however, were all low in magnitude, supporting the divergence of school culture variables from those personal characteristics.

## 2. School Work Culture Profile (SWCP)

The *School Work Culture Profile* is developed by Snyder (1988), based on a request from superintendents in the Prince George, British Columbia, region in the early 1980s. The occasion was a workshop, designed for superintendants who wanted to develop and coach their principals. After examining the research base for the model and discussing 10 smaller dimensions of work culture, the superintendants were asked how principals might use the *Managing Productive Schools* (MPS) knowledge base to work with their staffs. A discussion evolved around the translation of the 100 subset skills, from the 10 competencies, into a school diagnostic instrument. An initial 100-item scale was created and piloted in workshops with principals. In 1984, the revised instrument was tested in school districts in Missouri and Maryland, and in Hillsborough, Pasco and Sasota counties in Florida.

### *Underlying conception of culture*

Rooted in the concept of systems culture, the construct of school work culture is described as a subset of systems culture. Specifically, school culture refers to the collective work patterns of a system (or school) in the areas of systemwide and schoolwide planning, staff development, program development, and assessment of productivity, as perceived by its staff members (Snyder, 1988). Together these dimensions provide the direction and energy system for a school, or other organization, to alter its programs and structures to enhance its effect on learning patterns (Johnson, Snyder & Anderson, 1992; Johnson, Snyder & Johnson, 1991; Snyder, 1991). As a direct outcome of the literature research base, fewer dimensions of work culture define a productivity model. The implementation of this model constitutes a school production strategy (Snyder & Anderson, 1986). Four major categories can be enumerated: (a) school-wide planning; (b) staff development; (c) program development; and (d) productivity assessment.

### *Scales and items*

The *School Work Culture Profile* consists of 4 scales, containing 60 items:

1. *Schoolwide Planning* (15 items). This factor refers to partnership goals among staff, parents, students and community, and data bases that guide school planning and work group efforts. Item examples are: "Work group plans are reviewed by the leadership team" and "Parents participate in iden-tifying school goals".
2. *Professional Development* (15 items). This factor refers to staff working cooperatively in planning, organizing, coaching, and problem solving using multiple resources. Item examples are: "Super-vision reinforce strengths in current job performance" and "Staff members provide constructive feedback to each other regularly".
3. *Program Development* (15 items). This factor refers to staff accountability to ensure stu-dent success through instructional programs and services. Item examples are: "School evaluation includes assessment of student achievement" and "Instructional programs facilitate student mastery of learning objectives".
4. *School Assessment* (15 items). This factor refers to staff development systems and how they enhance the acquisition of knowledge and skills to solve schoolwide problems. Item examples are: "Staff development programs provide opportunities to learn new knowledge" and "The staff devel-opment program builds the school's capacity to solve problems".

*Level and format*

The *School Work Culture Profile* measures work practices at the school level. The format used was a five-point Likert scale, ranging from "strongly disagree" to "strongly agree", with a midpoint of "undecided".

*Reliability and validity*

The *School Work Culture Profile* has been submitted to a series of comprehensive content validation processes. The four domains of planning, staff development, program development, and assessment have a mean rating ranging from 5.32 to 5.72 on a six-point scale. Standard deviations of individual items are less than 0.20, indicating strong agreement among most reviewers on the ratings for a given domain of items.
Reliability studies on the subscales show that the internal consistency of the items is high. Three initial reliability studies were conducted using samples from three populations of practising educators. Cronbach's alpha reliability estimates were computed. The initial reliability studies on the *School Work Culture Profile* yielded high internal scores (.95 to .97). Additionally, a test-retest design was used on one of the sample groups to investigate the short term stability of the instrument over a two week time delay. This yielded a test-retest reliability of .78. Another reliability study was conducted on a much larger, but mixed, sample of school personnel from over 50 school districts in Florida, and resulted in Cronbach alphas that were very close to those found in the first series of studies. Finally, a study utilizing a large sample of teachers from Pasco County in Florida (n=504) yielded similar results.

## 3. Professional Culture Questionnaire for Primary Schools

The *Professional Culture Questionnaire for Primary Schools* is developed by Staessens (1990 1991*b*). For three 'privileged domains' (i.e., the principal as builder and carrier of culture, goal consensus, and professional relationships among teachers) items were formulated. In think-aloud sessions 5 teachers responded to these items in order to test if the items were interpreted by all teachers as the researchers intended, and to generate new or alternative items. Out of these think-aloud sessions a 90 item questionnaire was constructed, which was pilot-tested with 354 teachers in 26 primary schools. Using explorative factor analyses a four factor model was derived, containing the three 'privileged domains' and a fourth additional factor 'Lack of an internal network of professional support'. Based on (a) their factor loadings, (b) their conceptual similarity with the majority of factor items, and (c) Cronbach's alpha, the number of items was reduced to 55. Of these 55 items two were deleted because they were nearly similar to two other included items, and 6 new items were added regarding the fourth factor. The revised instrument, containing 59 items, was tested with 1202 teachers in 90 primary schools. A principal factor analysis with varimax rotation confirmed the four factor model that was found in the pilot-study. A short form with 7 items for each scale was constructed, for which items were selected according to (a) the magnitude and (b) unequivocality of their factor loadings, and (c) their $r_{it}$-coefficients.

*Underlying conception of culture*

Staessens (1991b) bases her conception of culture on Schein (1985), who defines culture as a pattern of basic assumptions -invented, dicovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration- that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. Professional culture is viewed as a social

constructed reality (Berger & Luckman, 1966), in which the process of meaning making plays a central role. The meaning of events, activities and statements is being created, learned and transmitted in an interpretative, social process. Staessens (1990) identifies three privileged domains where culture is constructed and manifests itself: principal as builder and carrier of culture; degree of goal consensus; and professional relationships among teachers.

*Scales and items*

The *Professional Culture Questionnaire for Primary Schools* consists of 4 scales, containing 28 items (Staessens, 1990):

1. *Principal as builder and carrier of culture* (7 items). This factor refers to the meaning of the principal's behavior to teachers within the school. Item examples are: "The principal at our school is the inspirer of starting initiatives in school" and "The principal at our school puts us up to evolve our work".
2. *Degree of goal consensus* (7 items). This factor refers to the existence of a common mission or conception of primary values within the school. Item examples are: "All teachers work in the same strain on the school's core objectives" and "Our school team tries to act as well as possible".
3. *Professional relationships among teachers* (7 items). This factor refers to teacher communication and cooperation. Item examples are: "Communicating with colleagues means a lot to me" and "As colleagues we look for new and other methods".
4. *Lack of an internal network of professional support* (7 items). This factor refers to the structural and emotional isolation of teachers in schools. Item examples are: "I hesitate to ask colleagues for advice, because in our school it is interpreted as if I couldn't handle my job" and "In this school teachers feel isolated".

*Level and format*

The *Professional Culture Questionnaire for Primary Schools* measures practice statements at both the individual and school level. The format used was a 6 point Likert scale, ranging from "not appropriate at all" to "appropriate to a large degree".

*Reliability and validity*

The reliability coefficients for the 4 scales range from .89 to .95 (Table III-2), and can therefore be classified as internal consistent (Staessens, 1990). The four factors explain respectively 19.7%, 19.7%, 17.7% and 15.2% (together 72.3%) of the total variance.

*Table III-2 Internal consistency reliabilities for the scales of the Professional Culture Questionnaire for Primary Schools*

| Scales of the Professional Culture Questionnaire | No. of items | α |
|---|---|---|
| Principal as builder and carrier of the culture | 7 | 0.95 |
| Degree of goal consensus | 7 | 0.95 |
| Professional relationships among teachers | 7 | 0.92 |
| Lack of an internal network | 7 | 0.89 |

To determine the validity of the questionnaire Staessens computed (a) correlations between the scales, (b) constructed a congruence matrix for the scales, (c) compared between-school and

within-school variance, and (d) compared the *Professional Culture Questionnaire for Primary Schools* with the *Principal Supervision Questionnaire*.

The correlations between the first three scales were all positive, ranging from .34 to .66. The correlations between the fourth scale and the first three scales were all negative, ranging from -.38 to -.73. These findings support the notion that a single construct is measured, with the fourth factor being negatively related to the other three factors. Secondly, to determine the extent to which the conceptual structure can be found in the factor structure, a congruence rotation of the derived factor structure to the hypothetical structure was performed. Congruency coefficients for the target factors ranged from .82 to .95, with absolute coefficients below .38 for the other factors, supporting construct validity of the instrument. Thirdly, ANOVA results indicated that schools significantly differed from other schools for each of the four scales. This supports discriminant validity of the instrument and indicates that school level variables are measured by the instrument. Finally, in order to determine criterion-related validity, the *Professional Culture Questionnaire for Primary Schools* was compared with the *Questionnaire for Assessing Principal Change Facilitator Style* (Vandenberghe, 1988). The *Questionnaire for Assessing Principal Change Facilitator Style* consists of three scales: (1) people-oriented; (2) organization-oriented; and (3) strategic feeling. Staessens found that relations between the scales of both instruments were in line with the conceptual framework of the *Professional Culture Questionnaire for Primary Schools*. For instance, in schools where a weak internal network of professional support exists, the school leader was found to be less involved in personal contacts with teachers.

## 4. Organizational Culture in Primary Schools

Houtveen, Voogt, Van der Vegt & Van de Grift (1996) have developed an instrument for measuring organizational culture in primary schools. Through expert analysis measurement objectives for the instrument were determined. For each aspect of school culture it was tested for their content validity. By literature search of instruments which measure organizational culture items in existing instruments were identified that represented the aspects of culture that Houtveen, Voogt, Van der Vegt & Van de Grift (1996) identified. Criteria were that (a) items had to contain a statement on behavior or beliefs of school management or school team, (b) items had to refer to the school level, not to the individual level, (c) items should refer to the factual situation at school, not to a desirable situation at school. The suitable items were enlarged by new items for each of the scales. To determine the psychometric quality, the instrument was tested with some teachers and the school leader of 465 primary schools. All respondents were asked to fill out the questionnaire two times, with a 4 weeks interval.

### *Underlying conception of culture*

Organizational culture is viewed as as a part, a subsystem of an organization, that influences the organization and can be more or less effective in doing so. Culture is the result of socialization and causes a certain structural stability by making coordinated action possible. Organization members act out of the same 'culture'. The culture subsystem has several levels, which can be characterized according to their consciousness and visibility, and is therefore to a different degree researchable and changeable. Houtveen, Voogt, Van der Vegt & Van de Grift (1996) define culture as "the not always conscious, limited communicatable set of values and norms on the work in a wide sense, as shared by the organizational members, that colours their behavior" (p. 27). The instrument is based on the competing values model as described by Quinn & Rohrbaugh (1983). They chose the competing values model because of the empirical foundation of the model in organization theory. Another reason was that the four models represent a diverse interpretation of organizational culture. The models include both aspects of the internal

functioning as well as aspects of the external functioning of organizations. In the competing values model organizations not only vary on the internal-external dimension, but also on the flexibility dimension. Some characteristics point to a flexible organization, other characteristics point to an organization wherein control over processes is valued.

*Scales and items*

Houtveen, Voogt, Van der Vegt & Van de Grift (1996) have constructed 15 scales containing 123 items, following the four value models by Quinn & Rohrbaugh (1983). With respect to the Human Relations Model 4 scales were constructed, containing 31 items:

1. *Unanimousness of the school team* (8 items). A high score on this scale indicates that teachers within school form a team in which they are able to openly express their views. Item examples are: "We agree as a team on educational matters" and "Divergence of opinion is discussed openly at our school".
2. *Responsibility for instructional processes* (8 items). A high score on this scale indicates that school members are committed to their work in school. Item examples are: "Teachers at our school are enthusiastic about their work" and "We are proud of our school".
3. *Appreciation of quality and capacities* (6 items). A high score on this scale indicates that school members recognize and appreciate the quality and capacities of their colleagues. Item examples are: "At our school the capacities of each team member are appreciated" and "Team members respect each other as person".
4. *Emphasis on teacher development* (9 items). A high score on this scale indicates that teachers are expected to continuously develop themselves through refresher courses. Item examples are: "In performance appraisal interviews a lot of attention is denoted to the professional development of a teacher" and "Investing in human capital is an important device within our school".

With respect to the Open Systems Model 4 scales were constructed, containing 30 items:

5. *Flexibility* (6 items). A high score on this scales indicates that the school's policy is formulated by the school team and the school team is able to change the policy when necessary. Item examples are: "Policy is formulated for the school as a whole" and "We are able to meet changes in legislat-ion in a flexible way".
6. *Emphasis on school growth* (6 items). A high score on this scale indicates that school growth is valued by the school team. Item examples are: "We strive for school growth" and "An increase in the number of pupils is interpreted as a success".
7. *Emphasis on public relations* (9 items). A high score on this scale indicates that the school invests in its public relations. Item examples are: "We invest time and energy in good p.r." and "We try to convince parents that our school is the best for their child".
8. *Ability to innovate* (9 items). A high score on this scale indicates that the school is willing and able to innovate. Item examples are: "We have a positive attitude towards educational innovations" and "Our team is able to go along with new educational trends".

With respect to the Internal Process Model 3 scales were constructed, containing 23 items:

9. *Formality of sharing information* (5 items). A high score on this scale indicates that school management decides which information is passed to teachers. Item examples are: "School management decides how extra facilities are put on" and "School management decides what information is passed on to other team members".
10. *Communication on educational matters* (8 items). A high score on this scale indicates that teachers have autonomy to a large degree with respect to educational matters in school. Item examples are: "Teachers at our school are solely responsible for their class" and "Team meetings are primarily devoted to domestic business".

11. *Stability* (10 items). A high score on this scale indicates that the school can be characterized as stable and consistent. Item examples are: "Teachers at our school are aware of their responsibilities" and "There is little turnover in teachers at our school".

With respect to the Rational Goal Model 4 scales were constructed, containing 39 items:

12. *Emphasis on achievement* (11 items). A high score on this factor indicates that the school emphasizes pupil achievement. Item examples are: "During the lessons we denote as much time as possible on language and arithmetic" and "We expect our pupils to have a good work attitude".
13. *Emphasis on reaching school objectives* (9 items). A high score on this scale indicates that reaching objectives in school is carefully planned. Item examples are: "We evaluate every year if the objectives have been met" and "At our school the subject matter that pupils have to master is determined for each grade".
14. *Efficiency* (10 items). A high score on this scale indicates that the school can be characterized by mutual adjustment and efficiency. Item examples are: "Decision-making in staff meeting is well prepared" and "We try to use our time as efficiently as possible".
15. *Trust in own effectiveness* (9 items). A high score on this scale indicates that teachers are convinced of being able to realize high achievement of pupils, and are supported by school management to do so. Item examples are: "We succeed in stimulating pupils to work as well as possible" and "School management is result-oriented".

*Level and format*

The questionnaire measures organizational culture at school level. Respondents were asked to score culture statements on a 6 point Likert scale, from "completely false", "false to a large degree", "false to some degree false", "true to some degree", "true to a large degree" to "completely true".

*Reliability and validity*

The reliability of the instrument was investigated by determining the homogeneity and stability of the instrument.

*Table III-3 Internal consistency reliabilities for the Organizational Culture in Primary Schools scales*

| Scales of the Professional Culture Questionnaire | No. of items | α |
|---|---|---|
| Unanimousness of the school team | 8 | 0.89 |
| Responsibility for instructional processes | 8 | 0.89 |
| Appreciation of quality and capacities | 6 | 0.77 |
| Emphasis on teacher development | 9 | 0.71 |
| Flexibility | 6 | 0.70 |
| Emphasis on school growth | 6 | 0.80 |
| Emphasis on public relations | 9 | 0.83 |
| Ability to innovate | 9 | 0.81 |
| Formality of sharing information | 5 | 0.78 |
| Communication on educational matters | 8 | 0.78 |
| Stability | 10 | 0.75 |
| Emphasis on achievement | 11 | 0.74 |
| Emphasis on reaching school objectives | 9 | 0.85 |
| Efficiency | 10 | 0.87 |
| Trust in own effectiveness | 9 | 0.84 |

To determine the homogeneity of the instrument, Cronbach alpha coefficients were computed, which ranged from .70 to .89 (table III-3).
Test-retest correlations, in order to determine the stability of the instrument, with a 4 weeks interval were high, ranging from .92 to 1.00 for the teacher sample, and from .89 to 1.00 for the administrator sample.
Subsequently, the similarity between teachers' responses and administrators' responses, the consistency between the teachers' scores within schools, and construct validity was determined. First, the similarity between teachers' responses and administrators' responses was computed to test if the culture of a school is perceived in more or less the same vein by all school members. Correlations between teachers' and administrators' responses ranged from .32 to .72, indicating weak validity for 7 of the 15 scales (below .60): *Appreciation of quality and capacities*, *Flexibility*, *Formality of sharing information*, *Communication on educational matters*, *Emphasis on reaching school objectives*, *Efficiency*, and *Trust in Own Effectiveness*. Second, a one-way variance analysis was performed to determine the ratio of between-school and within-school variance. Five scales were found to have between-school variances lower than half the total variance, indicating weak validity: *Flexibility*, *Communication on educational matters*, *Emphasis on reaching school objectives*, *Efficiency*, and *Trust in Own Effectiveness*.
Therefore, 8 scales remain: *Unanimousness of the school team*, *Responsibility for instructional processes*, *Emphasis on teacher development*, *Emphasis on school growth*, *Emphasis on public relations*, *Ability to innovate*, *Stability*, and *Emphasis on achievement*. Factor analyses revealed three factors: (1) the team or professional-oriented school, containing the scales *Unanimousness of the school team*, *Responsibility for instructional processes*, and *Emphasis on teacher development*; (2) the innovation-oriented school, containing the scales *Emphasis on school growth*, *Emphasis on public relations*, and *Ability to innovate*; and (3) the results-oriented school, containing the scales *Stability* and *Emphasis on achievement*. This three factor models reflect the four models of the Competing Values Model, with the results-oriented factor as a combination of the Internal Process model and the Rational Goal model. The results confirm the conceptual structure of the Competing Values model, although it indicates that the model contains three rather than four distinct submodels.

## 5. School Values Inventory Form-I (SVI)

The *School Values Inventory Form-I* was developed by Pang (1996). The SVI Form-I is part of the *School Values Inventory* which covers a wider range of organizational values in schools. The SVI Form-I is used with the *Teachers' Feelings Questionnaire* (TFQ) in a study on organizational values of excellent schools in Hong Kong. The initial, original version of the SVI Form-I comprised 54 statements of school values, based primarily on the organizational culture literature. Principal component analyses with oblique rotations were used to select values statements in forming coherent scales. A pilot-study was done with a randomly selected sample of 14 (out of 434) Hong Kong aided secondary schools, in which 101 teachers took part. The final version of the SVI Form-I consists of 38 value statements in 5 confirmed first-order scales: (1) formality and control, (2) bureaucratic rationality, (3) achievement orientation, (4) participation and collaboration, and (5) collegiality.

### *Underlying conception of culture*

Pang (1996) bases his conceptualization of school culture on the Schein (1985) three level model of culture. At its deepest level, culture is the collective manifestation of tacit assumptions which are abstract premisses about the nature of human relationship, human nature, truth, reality and environment. The next lower level consists of values, which are shared conceptions of what is desirable. They are reflections of the underlying assumptions of culture. Values are more

conscious than assumptions, and are therefore amenable to quantitative measurements. Pang direct his attention to values that reflect aspects of educational administration and management.

*Dimensions and items*

The SVI Form-I consists of 5 scales, containing 38 items:

1. *Formality and control* (9 items). A high score on this scale indicates that the school has a well-established system of superordinate-subordinate relationships and that the school is highly formalized and centralized. Item examples are: "Regular checks on teachers for rule violations can prevent wrongdoing" and "Little action should be taken until decisions are approved by the school authority".
2. *Bureaucratic rationality* (7 items). A high score on this scale indicates that the school administrators are highly rational in the running of the school. Item examples are: "Promotion should be based on merit" and "School administrators should make decisions based on facts, not feelings".
3. *Achievement orientation* (8 items). A high score on this scale indicates that the school emphasizes academic achievement and success and there is a high expectation of excellence. Item examples are: "The school should have high expectations for student achievement and behaviour" and "The school should reinforce high expectations by establishing academic standards and incentives".
4. *Participation and collaboration* (8 items). A high score on this scale indicates that the school has a high spirit of cooperation among teachers, administrators and principals. The sharing of leadership and decision making is emphasized. Item examples are: "Teachers should have participation in decision making" and "Teachers should be asked to suggest the areas for the school's evaluation".
5. *Collegiality* (6 items). A high score on this scale indicates that the staff members in that school have a strong collegial relationship. Item examples are: "The major management function is to support teachers' work" and "The line between administrators and teachers should not be drawn very tightly".

*Level and format*

The SVI Form-I consists of value statements how a school should be operated, measured at the individual level. The format used is a seven-point Likert scale.

*Reliability and validity*

Reliability coefficients (alphas) for the five scales in the pilot-study ranged from .77 to .88 (table III-4).

*Table III-4 Internal consistency reliabilities for the SVI Form I*

| Scales of the SVI (Form I) | No. of items | α |
|---|---|---|
| Bureaucratic rationality | 9 | 0.84 |
| Achievement orientation | 7 | 0.77 |
| Formality and control | 8 | 0.88 |
| Participation and collaboration | 8 | 0.88 |
| Collegiality | 6 | 0.78 |

## 6. School Cultural Elements Questionnaire (SCEQ)

The *School Cultural Elements Questionnaire* was developed by Cavanagh & Dellar (1996) and consists of two parts. The first part of the questionnaire is concerned with what actually takes place in school (Actual Form). The second part contains a number of statements that refer to what the respondents prefer their school to be (Preferred Form). The initial, original version of the SCEQ comprised 64 school practices in the Actual Form, and 64 values in the Preferred Form of the questionnaire. The initial version contained eight scales: (1) teacher efficacy; (2) teachers as learners; (3) collegiality; (4) mutual empowerement; (5) collaboration; (6) shared visions; (7) school-wide planning; and (8) transformational leadership. Factor analysis was used to select the statements in forming coherent scales, based on a pilot-study with 422 teachers. The final version of the SCEQ consists of 42 practice (Actual Form) and 42 value (Preferred Form) statements in 6 confirmed first-order scales: (1) teacher efficacy; (2) emphasis on learning; (3) collegiality; (4) collaboration; (5) shared planning; and (6) transformational leadership.

### *Underlying conception of culture*

Cavanagh (1997) places school culture within a school improvement context: "The culture of a learning community is manifested by the sharing of values and norms amongst teachers resulting in commonality of purpose and actions intended to improve the learning of students. The culture of the individual school is characterised by the perceived extent of participation in the interactive social processes which develop, maintain and transform the culture" (p. 184).

### *Dimensions and items*

The SCEQ consists of 6 scales, containing 42 items (Dellar, 1996):

1. *Teacher Efficacy* (7 items). Teacher efficacy refers to the belief in the application of pedagogical principles and practices to effect changes in the development of children. Item examples are: "We believe that every child can learn" and "Individual differences between students are not catered for".
2. *Emphasis on learning* (7 items). Teachers who are learners have a commitment to their own learning and professional growth. Item examples are: "I am receptive to advice from colleagues about my teaching" and "The principal and deputies do not encourage the professional growth of teachers" (reverse scored)
3. *Collegiality* (7 items). Collegiality is interaction between individuals resulting from a need to maintain or develop interpersonal relationships. Item examples are: "Teachers do not make an effort to maintain positive relationships with colleagues" (reverse scored) and "We are willing to help each other when problems arise".
4. *Collaboration* (7 items). Collaboration refers to the interaction between teachers as a consequence of organizational needs. Item examples are: "Items for discussion at meetings always come from the same people" (reverse scored) and "There is little debate in meetings" (reverse scored).
5. *Shared Planning* (7 items). Shared planning refers to the commonly developed, accepted and implemented expressions of the future direction of the school, and the process of school improvement in response to the needs of the school and the educational system. Item examples are: "We have not developed a common vision for the school's future" (reverse scored) and "Teachers are not unified in working towards the school's future vision" (reverse scored)
6. *Transformational Leadership* (7 items). Transformational leaders share power and facilitate a school development process that engages the human potential and commitment of teachers. Item examples are "Members of the administration generate a personal commit-

ment from teachers that ensures the success of innovations" and "The school administration does not encourage others to take control of new projects" (reverse scored).

*Level and format*

The SCEQ consists of school practices, measured partly at the individual and partly at school level. The format used is a 5 point Likert scale, with 5 representing "strongly agree", 4 "agree", 3 "uncertain", 2 "disagree" and 1 "strongly disagree".

*Reliability and validity*

Reliability coefficients (Cronbach's alphas) for the six scales of the SCEQ Actual Form range from .70 to .81 (table III-5).

*Table III-5 Internal consistency reliabilities for the SCEQ Actual Form*

| Scales of the SCEQ Actual Form | No. of items | α |
|---|---|---|
| Teacher Efficacy | 7 | 0.71 |
| Emphasis on Learning | 7 | 0.75 |
| Collegiality | 7 | 0.72 |
| Collaboration | 7 | 0.70 |
| Shared Planning | 7 | 0.81 |
| Transformational Leadership | 7 | 0.74 |

For each scale the mean correlations with the other scales were computed. These correlations ranged from .35 to .55, and were centered around .49. These moderate correlations may be interpreted as an indication for measuring one single construct by the six scales identified.

# APPENDIX IV

# SCHOOL CULTURE INVENTORY FORM I

**SCHOOL CULTURE INVENTORY**
**FORM I-B**

| | | *strongly disagree* | | | | *strongly agree* |
|---|---|---|---|---|---|---|
| 1. | Investing in people is an important device at our school | 1 | 2 | 3 | 4 | 5 |
| 2. | At our school we respect each other | 1 | 2 | 3 | 4 | 5 |
| 3. | At our school teachers have a positive attitude towards educational innovations | 1 | 2 | 3 | 4 | 5 |
| 4. | Teachers at our school are expected to be receptive to parents' criticism | 1 | 2 | 3 | 4 | 5 |
| 5. | At our school we try to formalize the communication between departments as much as possible | 1 | 2 | 3 | 4 | 5 |
| 6. | At our school we try to develop timesaving procedures | 1 | 2 | 3 | 4 | 5 |
| 7. | At our school risks are excluded as much as possible | 1 | 2 | 3 | 4 | 5 |
| 8. | Teachers at our school are expected to be informed about the target numbers with regard to the going up of students in school | 1 | 2 | 3 | 4 | 5 |
| 9. | We try to stress the distinctive features of our school | 1 | 2 | 3 | 4 | 5 |
| 11. | At our school teachers try to help each other where they can | 1 | 2 | 3 | 4 | 5 |
| 12. | At our school taking refresher courses and in-service training are considered to be important | 1 | 2 | 3 | 4 | 5 |
| 13. | Our school tries to be at the forefront of implementing new technologies for educational purposes | 1 | 2 | 3 | 4 | 5 |
| 14. | At our school we try to involve parents as much as possible in what happens at our school | 1 | 2 | 3 | 4 | 5 |

| | *strongly disagree* | | | | *strongly agree* |
|---|---|---|---|---|---|
| 15. Our school is very achievement oriented | 1 | 2 | 3 | 4 | 5 |
| 16. At our school we try as much as possible to formalize what needs to be done | 1 | 2 | 3 | 4 | 5 |
| 17. At our school every teacher is expected to act in conformity to the rules at school | 1 | 2 | 3 | 4 | 5 |
| 18. At our school we try to arrange meetings in a way that they won't take more of our time than strictly necessary | 1 | 2 | 3 | 4 | 5 |
| 19. At our school we think it is of utmost importance that problems are well analyzed before any actions are taken | 1 | 2 | 3 | 4 | 5 |
| 20. At our school we think it is important to keep in touch with primary schools in the region | 1 | 2 | 3 | 4 | 5 |
| 21. At our school we try to be attentive to developments in society | 1 | 2 | 3 | 4 | 5 |
| 22. Teachers at our school are expected to take extra care over students who perform below their ability | 1 | 2 | 3 | 4 | 5 |
| 23. Teachers at our school are expected to stimulate students to do the best they can | 1 | 2 | 3 | 4 | 5 |
| 24. At our school we think it is very important that teachers who have problems get help from their colleagues | 1 | 2 | 3 | 4 | 5 |
| 25. Teachers at our school are expected to keep up closely with the developments within their discipline | 1 | 2 | 3 | 4 | 5 |
| 26. At our school a good relationship with the local media is valued | 1 | 2 | 3 | 4 | 5 |
| 27. At our school teachers are expected to have an innovative attitude | 1 | 2 | 3 | 4 | 5 |
| 28. At our school we think it is very important to have close contacts to the local council | 1 | 2 | 3 | 4 | 5 |
| 29. The insurance of the school's continuation is an important device at our school | 1 | 2 | 3 | 4 | 5 |
| 30. At our school teachers are expected to plan their day as efficient as possible | 1 | 2 | 3 | 4 | 5 |

| | | *strongly disagree* | | | | *strongly agree* |
|---|---|---|---|---|---|---|
| 31. | At our school we try hard to go along with current affairs | 1 | 2 | 3 | 4 | 5 |
| 32. | Close cooperation between teachers is highly valued at our school | 1 | 2 | 3 | 4 | 5 |
| 33. | At our school teachers are highly loyal to their colleagues | 1 | 2 | 3 | 4 | 5 |
| 34. | At our school novices as well as experienced teachers are expected to educate themselves further | 1 | 2 | 3 | 4 | 5 |
| 35. | At our school everything is dominated by the performance of our students | 1 | 2 | 3 | 4 | 5 |
| 36. | At our school we try to tackle problems in a systematic way | 1 | 2 | 3 | 4 | 5 |
| 37. | At our school teachers constantly try to improve their functioning | 1 | 2 | 3 | 4 | 5 |
| 38. | We try to create broad support for our school in our direct neighborhood | 1 | 2 | 3 | 4 | 5 |
| 39. | At our school teachers are expected to pay close attention to the progress of their students | 1 | 2 | 3 | 4 | 5 |
| 40. | At our school clear procedures are thought of as very important | 1 | 2 | 3 | 4 | 5 |
| 43. | Professionalization is an important device at our school | 1 | 2 | 3 | 4 | 5 |
| 44. | At our school we try, if possible, to automate school processes | 1 | 2 | 3 | 4 | 5 |
| 45. | At our school we constantly search for measures that are most appropriate to reach the objectives | 1 | 2 | 3 | 4 | 5 |
| 46. | At our school we try to be considerate of the people living in the neighborhood of the school | 1 | 2 | 3 | 4 | 5 |
| 47. | At our school stability is highly valued | 1 | 2 | 3 | 4 | 5 |
| 48. | Teachers at our school are expected to try something new | 1 | 2 | 3 | 4 | 5 |
| 49. | At our school we think it is of utmost importance that teachers dare to ask their colleagues for advice | 1 | 2 | 3 | 4 | 5 |

| | | *strongly disagree* | | | | *strongly agree* |
|---|---|---|---|---|---|---|
| 50. | Teachers at our school think it is of utmost importance that new proposals are accompanied by an explicit planning of activities | 1 | 2 | 3 | 4 | 5 |
| 51. | At our school we try to push back expenses with an eye towards economizing | 1 | 2 | 3 | 4 | 5 |
| 53. | At our school we try to keep the number of meetings within limits | 1 | 2 | 3 | 4 | 5 |
| 54. | At our school we think it is important to evaluate and, if necessary, adjust our school's policy regularly | 1 | 2 | 3 | 4 | 5 |
| 55. | Teachers at this school think it is important to keep in touch with social groupings | 1 | 2 | 3 | 4 | 5 |
| 56. | Teachers who work on their own professional development are highly valued at our school | 1 | 2 | 3 | 4 | 5 |
| 57. | At our school high student scores on the final exams are highly valued by teachers | 1 | 2 | 3 | 4 | 5 |
| 59. | At our school we try to lay down procedures in writing as much as possible | 1 | 2 | 3 | 4 | 5 |
| 60. | At our school we expect every employee to have a flexible attitude | 1 | 2 | 3 | 4 | 5 |
| 62. | At our school we try to gear all activities to one another to make sure that our work doesn't overlap a great deal | 1 | 2 | 3 | 4 | 5 |

# APPENDIX V

# TABLES RESULTS PRELIMINARY STUDY PHASE II

## TABLES RESULTS PRELIMINARY STUDY PHASE II

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| items | | mean |
|---|---|---|
| 59. | At our school we try to lay down procedures in writing as much as possible (*Stability and control orientation*) | 4.59 |
| 20. | At our school we think it is important to keep in touch with primary schools in the region (*External support and facilities orientation*) | 4.29 |
| 50. | Teachers at our school think it is of utmost importance that new proposals are accompanied by an explicit planning of activities (*Means-ends orientation*) | 4.23 |
| 38. | We try to create broad support for our school in our direct neighborhood (*External support and facilities orientation*) | 4.21 |
| 16. | At our school we try as much as possible to formalize what needs to be done (*Means-ends orientation*) | 4.14 |
| 60. | At our school we expect every employee to have a flexible attitude (*Adaptation and innovation orientation*) | 4.14 |
| 40. | At our school clear procedures are thought of as very important (*Stability and control orientation*) | 4.12 |
| 39. | At our school teachers are expected to pay close attention to the progress of their students (*Productivity and accomplishment orientation*) | 4.11 |
| 4. | Teachers at our school are expected to be receptive to parents' criticism (*External support and facilities orientation*) | 4.09 |
| 51. | At our school we try to push back expenses with an eye towards economizing (*Efficiency orientation*) | 4.05 |
| 28. | At our school we think it is very important to have close contacts to the local council (*External support and facilities orientation*) | 4.02 |

| scales | | mean |
|---|---|---|
| 1. | Professionalization orientation | 3.34 |
| 2. | Commitment and support orientation | 3.36 |
| 3. | Adaptation and innovation orientation | 3.28 |
| 4. | External support and facilities orientation | 3.79 |
| 5. | Productivity and accomplishment orientation | 3.68 |
| 6. | Means-ends orientation | 3.48 |
| 7. | Stability and control orientation | 3.86 |
| 8. | Efficiency orientation | 3.33 |

ST IGNATIUS HIGH SCHOOL

| items | | mean |
|---|---|---|
| 39. | At our school teacher are expected to pay close attention to the progress of their students (*Productivity and accomplishment orientation*) | 4.08 |
| 17. | At our school every teacher is expected to act in conformity to the rules at school (*Stability and control orientation*) | 4.08 |

| scales | | mean |
|---|---|---|
| 1. | Professionalization orientation | 3.32 |
| 2. | Commitment and support orientation | 3.14 |
| 3. | Adaptation and innovation orientation | 2.81 |
| 4. | External support and facilities orientation | 3.29 |
| 5. | Productivity and accomplishment orientation | 3.65 |
| 6. | Means-ends orientation | 3.07 |
| 7. | Stability and control orientation | 3.48 |
| 8. | Efficiency orientation | 2.90 |

# APPENDIX VI

# SCHOOL CULTURE INVENTORY FORM II

**SCHOOL CULTURE INVENTORY**
**FORM II**

| | To what degree do *you* think of these values as important? | | | | | To what degree do *others* at your school think of these values as important? | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance |
| 1. Mutual understanding | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 2. Innovation orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 3. Flexibility | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 4. Security | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 5. Stability | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 6. Results orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 7. Commitment | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 8. Helpfulness | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 9. Diversity | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 10. Play along with circumstances | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 11. Achievement orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 12. Continuity | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

| | To what degree do *you* think of these values as important? | | | | | To what degree do *others* at your school think of these values as important? | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance |
| 13. Effectiveness | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 14. Reform orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 15. Efficiency | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 16. Goal orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 17. Mutual trust | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 18. Collaboration | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 19. Adaptability | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 20. Consistency | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 21. Formalization | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 22. Versatility | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 23. Loyalty | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 24. Pleasant atmosphere | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 25. Efficacy | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 26. Pursuit of success | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 27. High morale | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 28. Openness towards new developments | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 29. Solidity | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 30. Solidarity | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

| | To what degree do *you* think of these values as important? | | | | | To what degree do *others* at your school think of these values as important? | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance | Of no importance or hardly important | Somewhat important | Relatively important | Important | Of utmost importance |
| 31. Accomplishment | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 32. Coordination | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 33. Support from others | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 34. Regulation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 35. Productivity | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 36. Control | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 37. Change orientation | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 38. Goal attainment | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 39. Constancy | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 40. Responsiveness towards new developments | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |

# APPENDIX VII

# DISCRIMINANT ANALYSIS FOR FIVE CLUSTER SOLUTION

## DISCRIMINANT ANALYSIS FOR FIVE CLUSTER SOLUTION

*Table III a Standardized Canonical Discriminant Function Coefficients for Scale Means in Five Clusters*

| | Function | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Human Relations Model | .295 | .300 | .388 | - .832 |
| Open Systems Model | .789 | - .406 | .552 | .525 |
| Internal Process Model | .443 | .680 | .465 | .700 |
| Rational Goal Model | - .629 | - .028 | .791 | .005 |

*Table III b Classification Results of the Discriminant Analysis (Five Clusters) (Numbers represent percentages)*

| | Predicted Clusters | | | | |
|---|---|---|---|---|---|
| Actual Clusters | 1 | 2 | 3 | 4 | 5 |
| Cluster 1 | 95 | - | 5 | - | - |
| Cluster 2 | - | 100 | - | - | - |
| Cluster 3 | - | - | 95 | - | 5 |
| Cluster 4 | - | - | - | 100 | - |
| Cluster 5 | - | - | - | - | 100 |

*Table III c Wilks' Lambda Test for Five Clusters*

| Test of functions | Wilks' Lambda | Chi-Square | Degrees of freedom | Significance |
|---|---|---|---|---|
| 1 through 4 | .030 | 214.729 | 16 | .00 |
| 2 through 4 | .146 | 118.156 | 9 | .00 |
| 3 through 4 | .358 | 63.130 | 4 | .00 |
| 4 | .655 | 26.062 | 1 | .00 |