

# Building high-performing schools: validating a school organizational capability framework in a Dutch multi-school foundation

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## Abstract

**Purpose** – This study aims to investigate how a school organizational capability framework can serve both as a reliable and valid diagnostic instrument and as a holistic system for sustainable school development at the foundation level. This study examines whether higher framework scores are associated with stronger perceived school results in a Dutch multi-school primary education foundation.

**Design/methodology/approach** – This study uses cross-sectional survey data from 165 staff members across 13 schools in the STEV Foundation. Organizational capability is measured with an education-specific high-performing schools (HPS) framework and supplemented with high-performance organization (HPO) factors; perceived school results are captured by a separate scale. This study assesses reliability and factor structure, examines correlations between HPS, HPO and results and analyzes which capability factors are most strongly associated with perceived performance.

**Findings** – All HPS and HPO scales show high internal consistency and a clear factor structure. Within the HPS framework, internal organization, staff quality and educational approach have the strongest associations with perceived school results, while leadership quality operates mainly through these factors. Convergent validity with HPO is strong, with conceptually aligned subscales mapping closely. The framework, therefore, provides STEV with a statistically sound and practically useful basis for steering improvement.

**Originality/value** – This study extends prior work on HPS by validating an organizational-capability framework at the foundation level and by showing how HPS, in conjunction with HPO, can connect school-effectiveness insights with PDCA (plan-do-check-act)-based improvement practice in a Dutch multi-school context.

**Keywords** School organizational capability, High-performing schools, Dutch education, High-performance organizations, Educational management

**Paper type** Research paper

## 1. Introduction

Schools do not improve through pedagogy alone. They also improve through the quality of the organization that surrounds teaching: leadership, routines, collaboration, professional learning and disciplined follow-up. When these conditions are weak, improvement remains fragmented and hard to sustain. Organizational quality is therefore not separate from teaching quality; it is one of the conditions that make consistently good teaching possible (de Waal *et al.*, 2025a, 2025b). This is especially relevant in the Dutch context. School boards enjoy substantial autonomy, but they are also held accountable for educational quality and improvement (Department of International Affairs, 2024; Inspectie van het Onderwijs, 2020). In institutional theory terms, this creates a risk of decoupling: schools may adopt



plans, quality documents and formal improvement structures to satisfy external expectations while everyday routines in teams and classrooms change much more slowly (Stevenson *et al.*, 2021). Staff and leadership shortages reinforce this risk because boards and principals are pushed toward short-term firefighting rather than structured development. In such circumstances, schools need more than compliance instruments. They need an evidence-informed framework that translates formal ambition into shared routines and day-to-day improvement behavior.

Against this backdrop, we take the school as an organization as the unit of analysis. We focus on the high-performing schools (HPS) framework as both a diagnostic instrument and an improvement framework. As a diagnostic, HPS measures school organizational capability. As an improvement framework, it offers a shared language that can guide PDCA-based development across schools and teams. Our research question is as follows:

- RQ1.* To what extent does a validated organizational-improvement framework provide a reliable and valid diagnostic of school organizational quality within a Dutch multi-school primary-education foundation and are higher framework scores associated with stronger perceived school results?

The study also speaks to two broader literatures. First, school-effectiveness research shows that outcomes are shaped not only by classroom instruction but also by school-level conditions such as leadership, evaluation, climate and professional collaboration (Creemers and Kyriakides, 2008; Hallinger, 2011; Reynolds *et al.*, 2014). HPS translates those conditions into a compact organizational-capability model that can be diagnosed and discussed at the school and foundation levels. Second, organizational-learning literature emphasizes shared vision, reflective routines, team learning and disciplined feedback loops as conditions for sustainable improvement (Bryk *et al.*, 2015; Senge, 1990). HPS connects that improvement logic to four concrete organizational domains: management, internal organization, staff quality and educational approach. The contribution of this article is therefore not a new grand theory of school effectiveness, but a foundation-level validation and application of a compact framework that connects school effectiveness, high-performance management and day-to-day school improvement.

## 2. Comparative overview of organizational quality-improvement frameworks for schools

This section reviews organizational quality-improvement frameworks that schools can use to raise the quality of the school as an organization (i.e. governance, leadership, routines, teaming, culture) so that high-quality teaching can take place. A framework was included in the review when it:

- specified organizational factors of school quality;
- offered a practical diagnostic or self-evaluation instrument; and
- had research support (construct validity and/or links to results).

The unit of analysis is the school and its board/senior leadership. The frameworks are arranged by similar type. This comparative overview serves two purposes. First, it shows that Dutch schools already operate in a dense landscape of assurance, developmental and system frameworks. Second, it clarifies what is still missing for our analytic goal: a psychometrically validated, school-level capability model that links organizational conditions to results and can be embedded in PDCA routines. Sections 2.1–2.3 therefore position existing

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frameworks, while Section 2.4 draws out what this means for selecting HPS as the primary lens in this study.

### 2.1 Assurance and developmental frameworks

Assurance and peer-review mechanisms set expectations, enable internal evaluation and support professional dialogue about quality. They mainly help schools demonstrate that minimum standards are met and identify where improvement is needed, rather than specifying a concise set of organizational capabilities. Dutch inspectorate standards and internal assurance frameworks translate national norms into quality systems, annual plans, self-evaluations and improvement cycles. These systems strengthen compliance and transparency but focus largely on documenting processes and outcomes, not on describing a small set of underlying capability factors or providing validated scales for research and PDCA at the school level ([Inspectie van het Onderwijs, 2020](#)). Peer review and sector reference frameworks (such as quality networks and benchmark sets) support mutual learning and provide comparative data. They usually generate qualitative feedback and indicator dashboards without offering a compact, empirically tested construct of “school organizational capability” that can be applied consistently across schools in a foundation ([Stichting Kwaliteitsnetwerk mbo, 2024](#)).

### 2.2 Performance-oriented capability frameworks for schools

The HPS framework ([de Waal et al., 2025b](#)) views the school as an organization whose internal quality is captured in four interrelated factors: Quality of School Management, Quality of Internal Organization, Quality of Teachers and Staff and Quality of Educational Approach. Each factor is operationalized in concrete characteristics, such as clear ambition and strategy, disciplined PDCA routines, a safe and collegial climate, strong professional learning and coherent curriculum and assessment. Prior studies show that schools with higher HPS scores tend to report better educational and organizational outcomes, and that the factors can be measured reliably at the staff level. HPS is conceptually and empirically related to the high-performance organization (HPO) framework, which has been validated across sectors and describes generic factors, such as leadership quality, employee quality, openness and action orientation, continuous improvement and innovation and long-term orientation ([de Waal, 2012, 2020](#)). HPS can be seen as an education-specific translation of this logic into school realities. By combining both frameworks, we can test convergent validity and provide school boards with a performance language recognizable for stakeholders inside and outside education.

Other performance-oriented frameworks also conceptualize the school as an organization. The *5Essentials framework* identifies five organizational conditions for improvement and has been linked empirically to student outcomes ([Hart et al., 2020](#)). The *Organisational Health Inventory* (OHI) assesses dimensions such as goal focus, communication, cohesion and morale to capture school “health” ([Mehta et al., 2013](#)). The *Baldrige Excellence Framework*<sup>®</sup> (*Education*) offers a comprehensive quality-management model structured around leadership, strategy, customers, measurement and knowledge, workforce, operations and results. These frameworks contribute valuable concepts and evidence but are either anchored in specific policy contexts, broader in scope than a targeted capability model or demanding to implement in full as survey-based instruments at the level of individual schools.

### 2.3 System frameworks for internal evaluation and improvement

Public system frameworks codify “what good looks like” for schools in a given jurisdiction. They integrate standards, indicators and rubrics that define expectations for leadership, teaching, curriculum, assessment and community engagement, and they guide self-evaluation, planning and external review. Such frameworks are powerful for aligning actors. Examples include the *Ontario School Effectiveness Framework* (SEF) (Ontario Ministry of Education, 2013), the *New South Wales School Excellence Framework*, Australia’s *NSW School Excellence Framework* (NSW Department of Education, 2024) and the *Texas Effective Schools Framework* (TX Education Agency, 2021), which define domains and elements of effective schooling and describe practice at different performance levels that schools use to position themselves, set goals and monitor progress. Other systems and sector frameworks, such as the *New Zealand Education Review Office* indicators (Education Review Office, 2016) or *Kijk op Kwaliteit* (Stichting Kwaliteitsnetwerk mbo, 2024) in Dutch vocational education, play a comparable role. These system frameworks offer clear descriptors of quality and support coherent improvement conversations, but they are not psychometrically validated capability models and are tied to their policy context. For our purposes, they function as boundary conditions and reference points rather than as the primary analytic lens.

### 2.4 Comparative synthesis

In Table 1, the improvement frameworks are compared on their purpose, underlying logic, scope, empirical grounding and usability for schools. This overview summarizes the analysis in Sections 2.1–2.3 and shows that Dutch schools operate in a dense landscape of instruments: inspectorate standards and internal quality-assurance systems, developmental frameworks and international system frameworks. Together, these instruments provide a rich repertoire of concepts and tools, but they do not all serve the same function in practice. Some primarily define external expectations and compliance criteria; others offer developmental guidance without being psychometrically tested; still others are sector-agnostic and require translation to day-to-day routines.

The comparison in Sections 2.1–2.3 shows that existing frameworks each address part of the school-quality challenge. Assurance and developmental frameworks (e.g. inspectorate standards, peer review) strengthen internal evaluation and professional dialogue, but do not specify a concise set of organizational capabilities or provide validated scales that can be used for research and PDCA at the school level. System frameworks (Ontario SEF, NSW School Excellence, TX ESF) offer powerful, policy-anchored descriptors of “what good looks like, yet they are not psychometrically tested capability models and are anchored in non-Dutch contexts. General high-performance and quality-management frameworks (HPO, Baldrige) bring a proven performance logic but remain sector-agnostic and require translation to schooling realities. For our purpose – testing links between school-level organizational quality and perceived results and supporting a Dutch multi-school foundation in PDCA-ready improvement – the HPS framework best fits the requirements: it is education-specific, empirically validated with Dutch samples, closely connected to HPO and readily translatable into team behaviors and PDCA routines.

Our question is how schools can strengthen the organizational conditions for sustainably high performance in a context where they must already satisfy multiple external frameworks. We therefore treat inspectorate standards and system frameworks as boundary conditions that define the playing field and position HPS/HPO as the internal capability lens that helps boards and schools organize their own improvement work. In this study, we use HPS as the primary capability model and draw on HPO both as a convergence test and as a performance

**Table 1.** Comparative overview of quality improvement frameworks for schools

Framework	Unit of analysis	Core organizational constructs	Instrument	Evidence base	Typical strengths	Common limits	Fit
HPS	School (organization)	School management; internal organization; staff; educational approach	Validated survey ( $\alpha = 0.88-0.95$ )	Positive correlations with school results; primary and MBO (HPS tech)	School-specific, measurable; PDCA-friendly	Needs larger/longitudinal impact studies	High
5Essentials	School	Leadership; collaborative teachers; ambitious instruction; supportive climate; family ties	Survey of 20 indicators	Longitudinal links to gains and attendance	Strong evidence; accessible reporting	US context; translation needed	High (as comparator)
OHI	School	Organizational health (affiliation, resources, academic emphasis), integrity, collegial leadership,	Validated survey forms	Health linked to achievement	Clear climate lens; parsimonious	Narrower capability coverage	Moderate (Sub-lens)
Baldrige	School/district	Leadership; strategy; customers; measurement/knowledge; workforce; operations; results	Self-assessment criteria; optional external evaluation	Extensive adoption/practice use	Comprehensive quality system; results focus	Generic; capacity-demanding	Moderate (meta-framework)
Ontario SEF	Classroom-school-board	Indicators and “look-fors” across domains	Self-evaluation	System guidance; widely used	Common language; planning link	Descriptive; needs capability model for depth	Moderate (context comparator)
NSW SEF v3	School	Domains: Learning, teaching, leading; graded descriptors	Annual self-assessment + external validation	System guidance; policy-embedded	Coherent domain model	Capacity-dependent enactment	Moderate (policy comparator)
Texas ESF	School/district	Essential actions; diagnostics; aligned supports	Diagnostic architecture + supports	Statewide practice	Tight link to supports/resources	Policy-specific framing	Low-moderate (design ideas)
NZERO	School	Internal evaluation and indicators; inquiry/evaluative reasoning	Guidance suite; tools	National approach linking internal and external review	Strong on evaluation capability	Not a capability factor model	Moderate (evaluation complement)
NL MBO – Kijk op Kwaliteit	Institution/team	Ambitions, outcomes, standards, team capacities; dialogue-based peer review	Sector framework piloted with teams	Sector syntheses (2022–24)	Ownership; PDCA embedding; values-driven	Needs coaching; risk of vagueness	High (Dutch alignment)

language familiar to non-education sectors. The conceptual contribution of HPS is not that it proposes an entirely new theory of school effectiveness, but that it integrates insights from school effectiveness, instructional leadership and organizational learning into a compact, school-specific capability model. Where much school-effectiveness research identifies correlates of better performance, HPS translates these into a diagnostic architecture that boards and schools can actually use in recurring PDCA cycles. Where learning-organization theory stresses collective learning and feedback, HPS specifies the organizational domains in which such learning has to become visible: management, internal organization, staff quality and educational approach. In the next subsection, we describe the HPS framework in more detail and explain how it is operationalized in our measurement instrument.

### 2.5 The high-performing schools framework

The HPS framework was developed in two steps (de Waal *et al.*, 2025b). First, a structured review of recent peer-reviewed literature (2018–2023) identified organizational and managerial characteristics associated with strong school performance and grouped these into four provisional rubrics. Second, these rubrics were empirically validated through a survey in three Dutch schools ( $n = 274$ ), with high internal consistency per subscale and positive correlations with perceived school results, confirming the framework's construct validity. In this study, an HPS is understood as a school that thrives under challenging conditions by articulating a clear educational vision, investing in quality assurance and professionalization, safeguarding a safe learning and working climate, enabling teachers to teach effectively and being led by coaching-oriented management rather than control-oriented administration.

The framework comprises four factors:

- (1) *Quality of School Management*: Leadership that supports and inspires, develops people, communicates clearly, is effective in execution and actively drives improvement and innovation.
- (2) *Quality of Internal Organization*: A shared, stakeholder-focused mission, vision and strategy with ambitious long-term goals; adequate facilities and resources; a safe and orderly environment; well-planned processes and routines; robust controls and quality systems; and a learning, collaborative, supportive, excellence-oriented culture.
- (3) *Quality of Teachers and Staff*: Careful selection, sustained learning and development, professional standards and behavior and collegial relationships.
- (4) *Quality of Educational Approach*: A clear educational vision translated into curriculum, methods and continuous teaching improvement; systematic quality control of teaching; effective instructional strategies; high expectations for all students; support for diversity and student well-being; and strong partnerships with parents, community and external stakeholders.

## 3. Research approach

### 3.1 Research method

This study is an exploratory quantitative validation using cross-sectional survey data from one Dutch multi-school foundation. Staff members across the 13 STEV schools completed the validated HPS questionnaire and the HPO questionnaire. The survey data were used to examine reliability, factor structure, correlations and the fit of a structural model linking HPO, HPS and perceived school results. After the statistical analysis, the STEV management team discussed the findings with school leaders and quality coordinators. Those reflections

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are reported only in Section 5.2 as a practice-oriented interpretation; they are not presented as a separately analyzed qualitative data set.

### 3.2 Case organization

STEV is a public primary-education foundation, established in 2005, that operates 13 autonomous public schools in the wider Amersfoort region, serving roughly 1,900 pupils with about 255 staff. As a public provider, STEV explicitly embraces diversity: its schools act as safe practice grounds for society where pupils, parents and staff with different backgrounds meet, learn and live together. STEV defines “quality education” through three interrelated domains: qualification (strong basic skills in language and mathematics and meaningful learning situations), socialization (belonging, participation and openness to diversity) and personal formation (discovering who you are, recognizing talents and limitations). These domains converge in a moral compass that encourages pupils to take responsibility, exercise agency and contribute within a safe, supportive climate. The foundation’s mission is to deliver well-equipped, self-aware and enterprising pupils who can participate confidently in today’s and tomorrow’s society, and its strategic agenda translates this ambition into shared priorities across schools.

STEV’s decision to work with an HPO/HPS-based framework was the outcome of a deliberate search rather than a quick adoption of a fashionable model. Over the past years, the foundation has consciously evolved from a more traditional educational organization into a learning organization in which professionalization, collaboration and continuous improvement are central. In that process, STEV examined several reference frameworks for learning organizations, professional learning communities and change, but found that these did not offer a single, empirically grounded model that could be applied consistently across all schools. The HPO (de Waal, 2012; de Waal *et al.*, 2025a) framework was ultimately selected because its five success factors – leadership quality, employee quality, openness and action orientation, continuous improvement and innovation and long-term orientation – align closely with STEV’s governance philosophy of connection, craftsmanship, trust and inspiration and are supported by robust evidence in multiple sectors, including education. STEV then translated these principles, together with characteristics of HPS, into a STEV-specific HPO/HPS compass: not a checklist to determine whether a school is “HPO enough”, but a shared, evidence-informed language for organizational quality that can be brought to life in professional learning teams, focus groups and networks. In this way, the framework supports the strategic intent to secure long-term, consistent performance across schools - visible in educational outcomes, school climate, collaboration and continuous improvement - by focusing collective effort on what truly matters for pupils and professionals.

In this way, STEV explicitly seeks to distinguish itself by working with courage and ambition on evidence-informed value creation for pupils, parents and staff. Concretely, the board and school leaders connect a long-term strategic horizon with short PDCA cycles at the foundation, school and team level. This strategic choice resonates with our empirical finding, discussed in Section 4, that the HPO factor long-term orientation shows the strongest association with perceived school results.

### 3.3 Measurement scales

#### HPS

The quality levels of the school were measured with the 37 HPS characteristics as identified by de Waal *et al.* (2025b). These characteristics are formulated in statements, such

as “The school has sufficient resources”, for which respondents have to indicate how well their school meets the statement on a scale of 1 (not at all) to 10 (completely). [Appendix 1](#) provides an overview of the HPS characteristics/statements.

#### HPO

[De Waal \(2012\)](#) developed an HPO questionnaire to measure an organization’s high-performance level and validated this questionnaire in many different contexts of industries, countries, organization sizes and types ([Iqbal et al., 2022](#)). Management, teachers and support staff were asked to complete this questionnaire containing statements about the 35 HPO characteristics, with possible answers on an absolute scale from 1 (“I completely disagree with this statement, we do not have this characteristic at all in our school”) to 10 (“I completely agree with this statement, this characteristic is fully implemented in our school”). The resulting scores were collected and used to calculate the average scores on the HPO factors and characteristics for the case study school. The scores indicated the points of attention where the school needed to take action to improve and become an HPO. [Appendix 1](#) provides an overview of the HPO characteristics/statements.

#### Perceived school results

As in [de Waal et al. \(2025b\)](#), perceived school results were measured with two items: “I am very satisfied with the quality of the school” and “I am very satisfied with the performance of the students”. We use the term perceived school results throughout because the measure captures staff judgments rather than objective performance indicators. We selected this concise scale because the study’s primary aim was an initial validation of the organizational-capability framework within one foundation. Objective indicators were not incorporated in this first analysis and should be added in future research to strengthen criterion validity.

## 4. Research results

### 4.1 Validating the measurement scales

All statistical analyses were performed using SPSS PASW software (version 18). In total, 165 respondents took part in the study ( $n = 165$ ). There were no missing data. Confirmatory factor analysis was done to assess the structure of the HPS and HPO scales. AMOS software was used to perform the analyses. Per scale, a model was fitted in which each subscale loaded onto the latent variable HPS or HPO, respectively. This was done using AMOS software (version 18) and maximum likelihood estimation. Results show that model fit was good to adequate for both scales. For the HPS scale model fit markers were as follows: TLI = 0.99; CFI = 0.99; RMSEA = 0.031; for the HPO scale model fit was less good, but still adequate: TLI = 0.97; CFI = 0.98; RMSEA = 0.092.

Internal validity of the HPO and HPS scales, and of their subscales, was assessed by computing Cronbach’s alpha. When alpha was high enough, averages were computed per subscale of HPO and HPS. To assess the relationship between the HPS subscales, the HPO subscales and the Satisfaction scores, Pearson’s correlations were computed. All relationships were assessed using two-sided tests. Internal validity of the HPO, HPS and Perceived School Results scales and subscales was high ([Table 2](#)). Therefore, subscale scores were computed by averaging across items. The alpha coefficients are high, which means that all factors have a high level of reliability. In [Table 3](#), means, standard deviations and ranges for the (sub)scales are given. [Table 3](#) shows that there is enough variation for correlation analyses to be useful. There is a moderate difference in variation between subscales, which is to be expected given the difference in the number of items per subscale.

**Table 2.** Cronbach's alpha for HPO, HPS and school results scales

(Sub-)scale	No. of items	Cronbach's alpha
HPO overall	35	0.96
HPO – continuous improvement and renewal	8	0.89
HPO – openness and action orientation	6	0.81
HPO – management quality	12	0.93
HPO – employee quality	4	0.81
HPO – long-term orientation	5	0.76
HPS overall	37	0.97
HPS – quality of school organization	14	0.95
HPS – quality of school management	6	0.95
HPS – quality of school employees	5	0.82
HPS – quality of school educational approach	12	0.92
School results	2	0.82

**Table 3.** Descriptive statistics per (sub)scale

(Sub)scale	<i>n</i>	Range	Min.	Max.	Mean	SD
HPO overall	165	3.86	5.77	9.63	7.6341	0.79306
HPO – continuous improvement and renewal	165	5.25	4.50	9.75	7.1386	0.84238
HPO – openness and action orientation	165	4.17	5.83	10.00	7.8152	0.83456
HPO – management quality	165	4.25	5.75	10.00	7.9727	0.89735
HPO – employee quality	165	9.00	1.00	10.00	7.4864	1.06075
HPO – long term orientation	165	6.00	4.00	10.00	7.5152	1.16119
HPS overall	165	4.95	4.97	9.92	7.8532	0.84019
HPS – quality of school organization	165	5.93	3.93	9.86	7.7498	0.96754
HPS – quality of school management	165	5.83	4.17	10.00	8.0253	1.06347
HPS – quality of school employees	165	6.20	3.80	10.00	8.0036	0.94546
HPS – quality of school educational approach	165	5.08	4.92	10.00	7.8253	0.80754
School results	165	7.00	3.00	10.00	7.4727	1.07813

#### 4.2 Correlations between the factors

To understand how the main levers of school performance move together, we examine the bivariate correlations reported in Table 4. These coefficients indicate the direction and strength of association between each pair of constructs, from the four HPS factors to the HPO factors and Perceived School Results. Positive values mean that higher scores on one domain tend to coincide with higher scores on another; larger absolute values signal stronger associations. We interpret magnitudes using conventional benchmarks (roughly: small, moderate and strong effects) and note statistical significance where relevant. Because the data are cross-sectional and derived from the same respondents, the correlations are descriptive (not causal), partly reflecting shared perceptions across related constructs. With these caveats in mind, the pattern in Table 4 highlights which capabilities cohere most tightly, where leadership effects are most visible and which domains are most closely tied to perceived results.

Table 4 shows that all HPS and HPO factors are positively and significantly correlated with perceived school results. Three patterns stand out. First, the HPS construct relates more strongly to perceived results than HPO does (HPS Overall-School Results  $r = 0.722$  vs HPO

**Table 4.** Correlations between the HPO, HPS and school factors

Factors	Statistics	School results	HPS overall	Quality school's organization	Quality school's management	Quality school's employees	Quality school's educational approach
HPO overall	Pearson cor. Sig. (2-tailed) <i>n</i>	0.593 0.000 165	0.865 0.000 165				
HPO – continuous improvement and renewal	Pearson cor. Sig. (2-tailed) <i>n</i>	0.553 0.000 165		0.790 0.000 165	0.616 0.000 165	0.657 0.000 165	0.777 0.000 165
HPO – openness and action orientation	Pearson cor. Sig. (2-tailed) <i>n</i>	0.487 0.000 165		0.686 0.000 165	0.819 0.000 165	0.610 0.000 165	0.660 0.000 165
HPO – management quality	Pearson cor. Sig. (2-tailed) <i>n</i>	0.413 0.000 165		0.605 0.000 165	0.866 0.000 165	0.555 0.000 165	0.625 0.000 165
HPO – employee quality	Pearson cor. Sig. (2-tailed) <i>n</i>	0.506 0.000 165		0.601 0.000 165	0.589 0.000 165	0.553 0.000 165	0.599 0.000 165
HPO – long term orientation	Pearson cor. Sig. (2-tailed) <i>n</i>	0.683 0.000 165		0.677 0.000 165	0.522 0.000 165	0.665 0.000 165	0.694 0.000 165
HPS overall	Pearson cor. Sig. (2-tailed) <i>n</i>	0.722 0.000 165					
HPS – quality of school organization	Pearson cor. Sig. (2-tailed) <i>n</i>	0.722 0.000 165					
HPS – quality of school management	Pearson cor. Sig. (2-tailed) <i>n</i>	0.412 0.000 165					
HPS – quality of school employees	Pearson cor. Sig. (2-tailed) <i>n</i>	0.710 0.000 165					
HPS – quality of school educational approach	Pearson cor. Sig. (2-tailed) <i>n</i>	0.689 0.000 165					

Overall-School Results  $r=0.593$ ; both  $p<0.001$ ). A plausible interpretation is that the school-specific HPS factors are closer to what staff experience as day-to-day organizational conditions for teaching, whereas the more generic HPO language primarily captures a broader performance climate. In other words, HPS seems to function as the more proximal capability lens for school-level results, with HPO providing a compatible but higher-level performance vocabulary.

Second, within HPS, the internal organization and people levers are most closely associated with perceived school results. The quality of the school's organization, employees and educational approach all show strong positive correlations with perceived school results ( $r$  between 0.689 and 0.722), whereas the direct correlation between perceived school management and perceived school results is more moderate ( $r=0.412$ ). This pattern is consistent with the interpretation that leadership is reflected in results indirectly, via the organizational conditions and staff capability with which employees work every day. Because our data are cross-sectional, this interpretation should be read as a plausible hypothesis rather than as a tested mediation effect. For STEV, the practical message is straightforward: leadership attention should be made visible in routines, climate, collaboration, professional learning and instructional follow-through.

Third, convergence between HPS and HPO is high at the construct level (HPO Overall-HPS Overall  $r=0.865$ ), with the tightest links where constructs overlap conceptually (for example, openness and action orientation and management quality with the HPS organization factor). This supports the view that both frameworks tap into a shared underlying capability logic. At the same time, HPO's Long-Term Orientation shows the strongest association with results among the HPO subscales ( $r=0.683$ ), suggesting that a stable multi-year horizon is a critical condition for schools to realize the potential of their organizational and people capabilities. A plausible interpretation is that short-cycle PDCA in teams only translates into sustained performance when anchored in a consistent long-term direction.

### 4.3 The structural equation model

To examine whether the data are consistent with a model in which HPO is associated with HPS and HPS, in turn, is associated with perceived school results, we fitted the structural model  $HPO \rightarrow HPS \rightarrow$  perceived school results. This was done using structural equation modeling with AMOS software (version 18) and maximum likelihood estimation. The results show that the model had a good fit (TLI=0.997; CFI=0.998; RMSEA=0.047). Moreover, both regression paths were statistically significant (HPO  $\rightarrow$  HPS: estimate = 0.917 s.e. = 0.041,  $p<0.001$ ; HPS  $\rightarrow$  School results: estimate = 0.927 s.e. = 0.069,  $p<0.001$ ). Given the cross-sectional design, the paths should be interpreted as modeled associations rather than causal effects.

## 5. Analysis

### 5.1 Overall analysis of the findings

Taken together, the findings indicate that HPS works in STEV as a reliable diagnostic of school organizational capability and that higher scores coincide with stronger perceived school results. The school-specific lens is more closely associated with perceived results than the generic HPO lens, which supports using HPS for school- and foundation-level steering. Within HPS, internal organization, staff quality and educational approach are the domains most closely tied to perceived results. Management quality also relates positively, but less strongly, which is consistent with the view that leadership matters chiefly through the conditions it helps to organize rather than as an isolated perception. Because this study is

correlational, we present that mechanism as an interpretation to be tested rather than as an established causal pathway. At the same time, the relatively strong correlation between HPO long-term orientation and perceived school results ( $r=0.683$ ) should be interpreted cautiously. This factor includes items on stakeholder relationships and employment security, so it may capture not only strategic continuity but also perceived organizational stability and climate. Future research should disentangle these elements with richer outcome measures and structural modeling.

These results yield several clear implications for STEV's improvement practice. First, STEV can use the HPS framework as a targeting tool: for each school in the foundation, identify the largest gaps in internal organization and staff capability first; then confirm that leadership behaviors and time are explicitly directed at closing those gaps. Second, STEV should guard the long-term strategic horizon (goals, capacity, resourcing) while running disciplined short cycles in teams; this is where we expect the best payoff given the correlation pattern. Third, STEV should treat leadership as a means to organizational conditions: make effects visible in routines, safety, collaboration and professional learning; precisely the areas that track most closely with results.

At the societal level, the value of the framework lies in helping school boards organize scarce leadership time, professionalization effort and improvement attention more coherently, which is especially relevant in contexts marked by staffing shortages and rising accountability demands.

These findings also support the theoretical choice made in Section 2. Compared with broad assurance or generic performance frameworks, HPS offers a school-specific and PDCA-ready capability model that is close enough to practice to support improvement discussions, while still converging with HPO as a broader performance language. The pattern therefore fits the paper's central argument: sustainable improvement depends less on formal compliance alone and more on reliable routines, staff capability and instructional follow-through.

It has to be noted that the practical value of HPS/HPO does depend on several boundary conditions. A foundation needs at least a minimum level of leadership commitment, analytical capacity, time for team reflection and enough organizational stability to run PDCA cycles. Where staffing shortages, leadership turnover or fragmented data routines dominate, the framework risks becoming another paper exercise rather than a living improvement system.

### *5.2 Evaluation of the high-performance organization/high-performing schools diagnosis*

Following the quantitative analysis, the STEV management team held a structured reflection with school leaders and quality coordinators on the implications of the HPO/HPS diagnosis. The reflections reported in this subsection are used to interpret the practical meaning of the survey findings; they are not presented as a separately analyzed qualitative data set. From the management's perspective, the HPO/HPS diagnosis marked an important turning point. The ambition to grow into a high-performing organization had been present for some time (Section 3.2), but the diagnosis provided, for the first time, a concrete and shared picture of where STEV actually stood. The results gave language to both strengths and development areas, in line with the empirical pattern reported in Section 4 that highlighted internal organization, staff quality and educational approach as the strongest levers. In particular, the diagnosis confirmed existing qualities, such as a strong collegial culture and a pronounced sense of shared responsibility, while simultaneously indicating where more disciplined structures and routines were needed. In this way, the HPO and HPS scores not only delivered

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measurement data but also offered direction and a common vocabulary, making “high performance” a tangible development concept rather than an abstract ambition.

The subsequent discussion with the school leaders and quality coordinators acted as a catalyst in translating analysis into action. Building on the diagnostic results, five focus groups were established around the main HPO/HPS attention points. These cross-school groups brought staff from different schools together to work on concrete improvement points and to translate the STEV-HPO principles into day-to-day practice. According to the management evaluation, this approach generated a foundation-wide movement: more systematic knowledge sharing, mutual inspiration between schools and a strengthening of the learning culture that underpins STEV’s long-term strategy. This echoes Section 2’s argument that PDCA-ready frameworks and professional learning communities sustain improvement.

At the same time, the evaluation surfaced an important tension that is also implicit in our empirical findings: the balance between mindset and method. Management emphasized that HPO is, at its core, a way of thinking and acting: a stance of continuous learning, improvement and reflection. There is a risk that working with action plans and attention points is experienced too much as a time-bound project or separate program. STEV therefore explicitly frames the attention points emerging from the diagnosis as a flywheel to strengthen the HPO mindset, not as a checklist that could substitute for it. From this reflection, several lessons follow for the further use of the diagnostic in STEV:

- make HPO concrete and recognizable through a shared language and set of concepts;
- acknowledge existing quality so the diagnosis functions also as a way of making success visible;
- safeguard ownership by connecting schools, learning teams and the board in joint cycles;
- maintain a balance between short-term PDCA cycles and the multi-year strategic horizon; and
- keep the mindset central, so that the HPO framework remains an engine for behavior and culture rather than a temporary project.

Taken together, the management’s evaluation indicates that the HPO diagnosis and the discussion meeting have helped STEV to translate the abstract ambition of becoming an HPO into concrete, jointly owned policies and practices. This reinforces the main conclusion of Section 4 and Section 5.1: the diagnostic does not merely measure organizational quality; it can also serve as a practical starting point for a sustained, foundation-wide learning process in which organizational scaffolding, staff capability and educational approach are deliberately developed under a long-term horizon.

## 6. Conclusion, limitations and future research

### 6.1 Conclusion

This study set out to determine whether a validated, school-level capability model can operate as a reliable and valid diagnostic within a Dutch multi-school foundation (STEV) and whether higher capability scores are associated with stronger perceived school results. The evidence is affirmative. Reliability is high for all scales, legitimizing the use of subscale profiles per school for steering discussions. The education-specific diagnostic shows a stronger proximity to results than a general high-performance model, and within the diagnostic, the heaviest levers are internal organization, staff quality and educational approach, while the direct link between perceived management and results is more moderate.

This pattern suggests leadership influences results through organizational scaffolding and teacher capability rather than via generic leadership perceptions. Convergent validity is strong with conceptually aligned subscales mapping tightly, and the long-term orientation factor shows the highest tie to results among general high-performance dimensions. Together, these findings support the theoretical choice for a school-specific, PDCA-ready capability model that links organizational conditions to perceived results in Dutch practice.

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### 6.2 Limitations

First, the design is cross-sectional and single-source, so associations are descriptive, not causal and may include shared-method variance. Second, perceived school results were measured with two staff-perception items. This provides a concise and reliable perceptual outcome measure, but not a broad or objective performance indicator. We therefore cannot claim that HPS scores are associated with external outcomes such as inspection judgments, attainment or attendance. Third, the study is set within one foundation (STEV); external validity to other foundations, sectors, or countries remains to be established. Finally, we did not control for contextual covariates (e.g. school size, student composition) that might moderate associations.

### 6.3 Future research

Future work should deepen both the evidence base and the use in practice of the framework. First, replicate the present CFA in larger samples and test measurement invariance across schools, roles and time. Next, combine longitudinal or repeated-measures SEM with external outcome indicators to examine whether the directional interpretation suggested here holds over time. External validity requires replication in other Dutch foundations and, where feasible, internationally, enabling normative reference ranges for boards. Also, implementation research should examine boundary conditions for adoption, such as board commitment, data literacy, staffing stability and time for professional dialogue. Finally, implementation research should embed the instrument in PDCA cycles – using subscale profiles to set hypotheses, target interventions and track multi-source impacts across successive cycles so the tool is validated statistically and as an engine for improvement.

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### Data availability

The data are not publicly available because of privacy restrictions.

### Declaration of the use of AI

The authors declare that no AI-assisted technologies were used during any stage in the preparation of this article.

### References

- Bryk, A.S., Gomez, L.M., Grunow, A. and LeMahieu, P.G. (2015), *Learning to Improve: How America's Schools Can Get Better at Getting Better*, Harvard Education Press, Cambridge.
- Creemers, B.P.M. and Kyriakides, L. (2008), *The Dynamics of Educational Effectiveness: A Contribution to Policy, Practice and Theory in Contemporary Schools*, Routledge, London.

- de Waal, A.A. (2012), *What Makes a High Performance Organisation: Five Validated Factors of Competitive Advantage That Apply Worldwide*, Global Professional Publishing, Enfield.
- de Waal, A.A. (2020), *High Performance Managerial Leadership*, Praeger, New York, NY.
- de Waal, A., Goossens, P., Bos, M. and Jeurissen, N. (2025b), “Identifying and validating characteristics of high-performing schools: a quantitative study in Dutch education”, *Quality Assurance in Education*, pp. 1-31.
- de Waal, A., Schreurs, M., Goossens, P. and Dirkx, M. (2025a), “Building high performing schools: a case study”, *International Education Studies*, Vol. 18 No. 2, pp. 77-88.
- Department of International Affairs (2024), *Dutch Education System—Background Information*, Dutch Inspectorate of Education, The Hague.
- Education Review Office (2016), *Effective Internal Evaluation for Improvement*, New Zealand Government.
- Hallinger, P. (2011), “Leadership for learning: lessons from 40 years of empirical research”, *Journal of Educational Administration*, Vol. 49 No. 2, pp. 125-142, doi: [10.1108/09578231111116699](https://doi.org/10.1108/09578231111116699).
- Hart, H., Young, C., Chen, A., Zou, A. and Allensworth, E.M. (2020), *Supporting School Improvement: Early Findings from Reexamination of the 5Essentials Survey*, University of Chicago Consortium on School Research.
- Inspectie van het Onderwijs (2020), *Beoordeling Van De Eigen Kwaliteit in Het Mbo: een Onderzoek Naar Versterking Kwaliteitsborging [Assessment of Own Quality in Secondary Vocational Education: A Study on Strengthening Quality Assurance]*, Inspectie van het Onderwijs (OCW), Den Haag.
- Iqbal, M.S., Isa, M.F.M. and Aziz, F.S.A. (2022), “Bibliometric analysis of high-performance organisation literature review: 1984 till 2020”, *Journal of Scientometric Research*, Vol. 11 No. 2, pp. 205-211.
- Mehta, T.G., Atkins, M.S. and Frazier, S.L. (2013), “The organizational health of urban elementary schools: school health and teacher functioning”, *School Mental Health*, Vol. 5 No. 3, pp. 144-154, doi: [10.1007/s12310-012-9099-4](https://doi.org/10.1007/s12310-012-9099-4).
- NSW Department of Education (2024), *School Excellence Framework – Version 3*, NSW DoE, Sydney.
- Ontario Ministry of Education (2013), *School Effectiveness Framework (K–12): a Support for School Improvement and Student Success*, Queen’s Printer for Ontario, Toronto.
- Reynolds, D., Sammons, P., De Fraine, B., Van Damme, J., Townsend, T., Teddlie, C. and Stringfield, S. (2014), “Educational effectiveness research (EER): a state-of-the-art review”, *School Effectiveness and School Improvement*, Vol. 25 No. 2, pp. 197-230, doi: [10.1080/09243453.2014.885450](https://doi.org/10.1080/09243453.2014.885450).
- Senge, P.M. (1990), *The Fifth Discipline: The Art and Practice of the Learning Organization*, Doubleday/Currency, New York, NY.
- Stevenson, L., Honingh, M. and Neeleman, A. (2021), “Dutch boards governing multiple schools: navigating between autonomy and expectations”, *School Leadership and Management*, Vol. 41 Nos 4-5, pp. 370-386.
- Stichting Kwaliteitsnetwerk mbo (2024), *Kijk Op Kwaliteit: Samen Werken Aan Mbo-Eigen, Toekomstbestendige Onderwijskwaliteit [Focus on Quality: Working Together on Vocational Education-Specific, Future-Proof Educational Quality]*, Kwaliteit in Kleur, deel 3, Utrecht.
- TX Education Agency (2021), *Effective Schools Framework (ESF) Materials*, TEA, Austin, TX.

### Appendix 1. The HPS, HPO and perceived school results factors and characteristics

This appendix provides an overview of the HPS and HPO factors and their accompanying characteristics and the Perceived School Results items.

**High-performing schools factors and characteristics***Quality of the school's organization*

- The school has a clear and shared stakeholder-focused purpose, mission, vision and strategy.
- The mission, vision and strategy of our school are shared and supported by the employees.
- The school has ambitious, long-term goals.
- The school uses clear frameworks within which employees can and may act.
- The school has adequate organizational facilities.
- The school has adequate resources.
- The school has a safe and orderly school environment.
- The school has well-planned and coordinated work processes and routines.
- The school regularly assesses the performance of students and teachers to determine their progress/growth.
- The school has implemented quality management systems.
- The school has a learning culture.
- The school has a collaborative culture.
- The school has a supportive culture.
- The school has a culture of excellence.

*Quality of the school's management*

- The school's management provides good support.
- The school's management inspires.
- The school's management promotes the development of people.
- The school's management is effective.
- The school's management promotes improvement and innovation.
- The school's management is good at communication.

*Quality of the school's employees*

- The school has carefully selected its teachers and supporting staff.
- The school puts a focus on staff learning and development.
- The school has a team of teachers with various specialisms (such as language coordinator, math coordinator, cultural coordinator).
- The teachers and supporting staff are professional.
- The colleagues are collegial.

*Quality of the school's educational approach*

- The school has a clear educational vision.
- The school has a clear curriculum.
- Clear teaching methods and instructions are applied in the school.
- There is attention for improving education.
- There is regular quality control of education.

- The applied learning strategies are effective.
- There are high expectations of students.
- Student diversity is supported with different learning approaches.
- There is a lot of attention for the well-being of students.
- There is a lot of cooperation and commitment with society.
- There is a lot of cooperation and commitment with parents of the students.
- There is a lot of cooperation and commitment with external parties (such as suppliers, interest groups, etc.).

### **High-performance organization factors and characteristics**

#### *Continuous improvement*

- The school has adopted a strategy that sets it clearly apart from other organizations.
- In the school, processes are continuously improved.
- In the school, processes are continuously simplified.
- In the school, processes are continuously aligned.
- In the school, everything that matters to performance is explicitly reported.
- In the school, both financial and non-financial information is reported to both managers and employees.
- The school continuously strengthens its core competencies.
- The school continuously innovates its products, processes and services.

#### *Openness and Action-Orientation*

- In the school management frequently engages in dialogue with employees.
- Employees of the school spend much time on knowledge exchange and learning.
- Employees of the school are always involved in important processes.
- Management of the school unit allows making mistakes.
- Management of the school welcomes change.
- The school is performance-driven.

#### *Management quality*

- Management of the school is trusted by all employees in the unit.
- Management of the school has integrity.
- Management of the school is a role model for employees in the unit.
- Management of the school applies fast decision-making.
- Management of the school applies fast action-taking.
- Management of the school coaches employees to achieve better results.
- Management of the school focuses on achieving results.
- Management of the school is very effective.
- Management of the school applies strong leadership.
- Management of the school is confident.
- Management of the school is decisive with regard to non-performers.
- Management of the school always holds employees responsible for their results.

*Employee quality*

- Management of the school inspires employees to accomplish extraordinary results.
- Employees of the school are continuously stimulated to become more flexible and resilient.
- The school has a diverse and complementary workforce.
- The school grows through partnerships with suppliers and/or customers.

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*Long-term orientation*

- The school maintains good and long-term relationships with all stakeholders.
- The school is aimed at servicing the customers as best as possible.
- Management of the school has been with the organization for a long time.
- New management is promoted from within the school.
- The school is a secure workplace for employees.

*Perceived school results factor and characteristics*

- I am very satisfied with the quality of the school.
- I am very satisfied with the performance of the students.

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