

These appendices belong to the article

“Identifying and validating characteristics of High-Performing Schools: a quantitative study in Dutch education”

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APPENDIX 1: OVERVIEW RESULTS LITERATURE SEARCH

This Appendix provides a detailed overview of the potential HPS factors and characteristics of a high performance school, as identified from the literature.

Potential HPS factor	Potential HPS characteristic	Category	Description	Sources
Management	Supportive management	Coaching/ development	Social support from one's supervisor; Instructional leadership; Trust given to staff members; Knowledgeable about instructional, assessment and classroom practices; Attention paid to questions of peaceful and harmonious coexistence; Personal relationships with teachers; Promotion of a sense of well-being	Evers <i>et al.</i> (2011); Intxausti <i>et al.</i> (2016); Pandla and Gupta (2020); Stöcklin (2011); Waters <i>et al.</i> (2003)
	Inspirational management	Coaching/ development	Ability to foster the commitment and motivation of the teaching staff ; Inspiring of teachers to accomplish excellence; Positive leadership; Autonomy and accountability; Being social responsible; Having a vision	Intxausti <i>et al.</i> (2016); Kashiramka <i>et al.</i> (2021); Sahu <i>et al.</i> (2013); Waters <i>et al.</i> (2003); Woods and Macfarlane (2022)
	Management promotes people development	Coaching/ development	Attention by one's supervisor for a broader career development; A leadership succession plan; Meeting teachers' educational concerns and needs; A positive attitude to training and lifelong learning; Good people development/ coaching skills; Encourage participation	Evers <i>et al.</i> (2011); Giles and Hargreaves (2006); Hallinger and Hosseingholizadeh (2020); Intxausti <i>et al.</i> (2016); Ngang <i>et al.</i> (2015); Sahu <i>et al.</i> (2013)
	Effective management	Quality	Effective and high quality school leadership; Outstanding principals; Having quality certifications; Effective leadership style (collaborative; responsible for teachers and students; people-centered leadership; flexible, inspirational, supportive and collegial;	Agirdag and Muijs (2023); Blase <i>et al.</i> (2010); Gurr <i>et al.</i> 2018; Hallinger and Hosseingholizadeh (2020); Lindahl (2010); Ngang <i>et al.</i> (2015); Padilla <i>et al.</i> (2020); Sahu <i>et al.</i> (2013); Shannon and Bylsma (2007)

			involving teachers in collective decision-making; team-working); Good planning and organizing; Proactive management style	
	Management promotes improvement and innovation	Quality	Effective improvement; Proficient in resource allocation; Challenging of the status quo and looking for better ways to do things; Driving force behind change initiatives; Showing initiative	Ngang <i>et al.</i> (2015); Padilla <i>et al.</i> (2020); Sahu <i>et al.</i> (2013); Waters <i>et al.</i> (2003)
	Management is a good communicator	Communication	Leaders transmitting vision and plans; Continuously communicating status and goals; Open communication lines with staff; Good presentation skills; Consistent dialogue around goals and vision; High visibility; Highly accessible; Frequent contact with students	Campbell Wilcox and Ives Angelis (2011); Ngang <i>et al.</i> (2015); Samad <i>et al.</i> (2014); Stöcklin (2011); Waters <i>et al.</i> (2003)
Organization / Business Operations	A clear and shared stakeholder-focused purpose, mission, vision and strategy	Mission/Vision/ Strategy	A clear, shared vision and school culture, committed to providing the highest quality education to all students; A shared vision for student success and strategic plans; A clearly defined mission shared by all professionals; Clear stakeholder-focused strategic direction; Development of a shared vision of what the school could be like; Development of shared understanding of purpose	Agirdag and Muijs (2023); Campbell Wilcox and Ives Angelis (2011); Intxausti <i>et al.</i> (2016); Ng and Chan (2008) ;Padilla <i>et al.</i> (2020); Pandla and Gupta (2020); Shannon and Bylsma (2007); Stöcklin (2011); Sweetland and Hoy (2020); Waters <i>et al.</i> (2003); Woods and Macfarlane (2022)
	Ambitious, long-term goals	Mission/Vision/ Strategy	Ambitious goals, Setting long-term goals; Integration with the strategy ; Clear communication of vision and goal	Agirdag and Muijs (2023); Hallinger and Hosseingholizadeh (2020); Inspectie van het Onderwijs (2024); Samad <i>et al.</i> (2014); Schleicher (2018); Ambitious, with concrete goals that are monitored
	Adequate organisational facilities	Facilities/ resources	Adequate organizational facilities; A good infrastructure and facilities (labs, library, IT)	Evers <i>et al.</i> (2011); Kashiramka <i>et al.</i> (2021); Sahu <i>et al.</i> (2013); Stöcklin (2011)
	Adequate resources	Facilities/ resources	Adequate provisions; Efficiently managed internal resources; Coordination of resources; Technology available and integrated in the	Blase <i>et al.</i> (2010); Campbell Wilcox and Ives Angelis (2011); Evers <i>et al.</i> (2011); Kashiramka <i>et al.</i> (2021); Ng

			school; Availability of sustainable funds and resources; Ensurement of necessary material and equipment for teachers	and Chan (2008); Padilla et al. (2020); Waters et al. (2003)
	Safe and orderly school environment	School environment	Safe and orderly school environment; Good ambience (learning environment); A school-wide vision and approach to behavior which promotes a safe, orderly, and inclusive environment	Agirdag and Muijs (2023); Blase <i>et al.</i> (2010); Khanal et al. (2020); Padilla et al. (2020); Pandla and Gupta (2020); Sahu et al. (2013); Voight et al. (2013); Waters et al. (2003)
	Well-planned and coordinated work process and routines	Processes	Well-planned work processes; Well-organised coordination; Good planning; Smooth functioning; Established routines regarding the running of the school; Reduced bureaucracy and decentralized decision-making	Hallinger and Hosseingholizadeh (2020); Intxausti et al.(2016); Lee (2008); Padilla et al.(2020); Sahu et al. (2013); Sweetland and Hoy (2020); Waters et al. (2003)
	Administrative and operational controls to track performance and achievements	Controls	Administrative and operational controls to track performance and achievements; Measurable goals and benchmarks; Concrete goals for the functioning of the school; Close analysis and discussion of data to make decisions and improve student performance; Well-planned financial management (Annual budget planning; Action plans to support the school's directions and track performance; A robust and rigorous self-evaluation and review	Blase et al. (2010); Campbell Wilcox and Ives Angelis (2011); Inspectie van het Onderwijs (2024); Kashiramka et al. (2021); Lee (2008); Ng and Chan (2008); Sweetland and Hoy (2020); Waters et al. (2003); Woods and Macfarlane (2022)
	Implemented quality management systems	Quality	Implemented quality management systems; Enforcement of clear structures, rules and procedures	Fernández Díaz <i>et al.</i> (2016); Ng and Chan (2008); Waters et al. (2003)
	A learning culture	Culture	Focus on knowledge creation and sharing; Well-developed organizational memory; Information shared through effective communication; Culture of Continuous Learning for Adults	Lindahl (2010); Samad <i>et al.</i> (2014); Stöcklin (2011)
	A collaborative culture	Culture	High levels of collaboration and communication; Open interactions; A team-based, problem-solving approach; School connectedness and social relationships;	Agasisti et al. (2012); Agirdag and Muijs (2023); Dolejs (2006); Giles and Hargreaves (2006); Khanal et al. (2020); Ngang et al. (2015); Schleicher

			Promotion of cooperation among staff; Involvement of staff in policy and decision-making; High team spirit	(2018); Shannon and Bylsma (2007); Stöcklin (2011); Sweetland and Hoy (2020); Voight et al. (2013); Waters et al. (2003)
	A supportive culture	Culture	A school-wide vision and approach to behavior which promotes a safe, orderly, and inclusive environment; A supportive, warm climate with a strict approach to discipline; Schools recognizing student and teacher achievement within a context of support; Stimulating and inclusive environment	Agirdag and Muijs (2023); Blase et al. (2010); Dolejs (2006); Hallinger and Hosseingholizadeh (2020); Samad et al. (2014); Woods and Macfarlane (2022)
	A culture of excellence	Culture	High level of autonomy in strategic decision-making; Fostering a professional and innovative culture, High expectations for success; A customer-oriented environment; Provide quality services that satisfy customer's needs; Recognition of excellent staff; Teachers' pay that reflects professional standards; Recognition of and financial incentives for good performance; Data-based decision-making; Academic culture that inspires and motivates ongoing reflection; Establishment of centers of excellence	Agasisti et al. (2012); Agirdag and Muijs (2023); Kashiramka et al. (2021); Lee (2008); Pandla and Gupta (2020); Padilla et al. (2020); Sahu et al. (2013); Schleicher (2018); Stöcklin (2011); Sweetland and Hoy (2020); Waters et al. (2003)
Teachers/staff	Carefully selected teachers/staff	Quality of teachers/staff	Thoughtfully selected teachers and strong instructional leaders (both administrative and teacher leaders); High number of teachers retained; Improvement in faculty quality	Bell and Cordingley (2014); Dolejs (2006); Giles and Hargreaves (2006); Kashiramka et al. (2021); Khanal et al. (2020); Schleicher (2018)
	Focus on staff learning and development	Quality of teachers/staff	Well-planned staff development plan; Environment that promotes learning among staff; Opportunity to learn; Improvement of the performance of teachers who are struggling; Development of staff to its full potential; Staff that continuously educate themselves; Provision of informal learning opportunities; Ensurance of necessary staff development	Agirdag and Muijs (2023); Bell and Cordingley (2014); Blase et al. (2010); Campbell Wilcox and Ives Angelis (2011); Dolejs (2006); Hallinger and Hosseingholizadeh (2020); Lee (2008); Ng and Chan (2008); Padilla et al. (2020); Pandla and Gupta (2020); Sahu et al. (2013); Samad et al. (2014);

			opportunities; Training and development and placement ; Primary focus on learning; Educators embracing broader learning objectives than their own subject matter; High investment in mentoring and coaching	Schleicher (2018); Stöcklin (2011); Waters et al. (2003); Woods and Macfarlane (2022)
	Professional teachers/staff	Quality of teachers/staff	Self-motivated and committed teachers; Sense of responsibility for students' learning outcomes; Strong classroom skills; Staff with high level of interest, self-motivation, enthusiasm and determination; Staff with a professional attitude	Hallinger and Hosseingholizadeh (2020); Khanal et al. (2020); Padilla et al.(2020); Stöcklin (2011); Sweetland and Hoy (2020)
	Collegial colleagues	Quality of teachers/staff	Social support from one's close colleagues; Staff open-minded and tolerant to each other; Staff aware of cultural differences; Collegial interactions; Mutual respect and trust between management and teachers; Good interpersonal relationships	Evers <i>et al.</i> (2011); Hallinger and Hosseingholizadeh (2020); Stöcklin (2011); Sweetland and Hoy (2020); Waters et al. (2003)
Education	Educational vision	Content	A shared vision on education and a translation of this into ambitions and concrete goals; Clarity about what students should be able to do; Explicit academic goals that are aligned with and often exceed country standards; Thinking outside the box in matching students' needs to resources; Improvement in research output; Clear focus on explicit pedagogical strategies linked to student achievement	Bell and Cordingley (2014); Campbell Wilcox and Ives Angelis (2011); Dolejs (2006); Giles and Hargreaves (2006); Hallinger and Hosseingholizadeh (2020); Inspectie van het Onderwijs (2024); Kashiramka et al. (2021); Ng and Chan (2008); Schleicher (2018); Sweetland and Hoy (2020)
	Curriculum	Content	A rich and creative curriculum; Alignment of curriculum, instruction, and assessments with core objectives; Curriculum set in coordination with teachers; Introduction of new programs and their accreditation; Concrete goals for curriculum, instructions and assessments; Collaboration with outside organizations as a way to enrich the curriculum	Agirdag and Muijs (2023); Bell and Cordingley (2014); Hallinger and Hosseingholizadeh (2020); Kashiramka et al. (2021); Khanal et al. (2020); Padilla et al.(2020); Sahu et al. (2013); Shannon and Bylsma (2007) ; Waters et al. (2003); Woods and Macfarlane (2022)

	Methods/Instructions	Content	Content and Instruction That Ensure Student Achievement of Agreed-on Academic Standards; Effective, research-based methods and strategies; Flexibility in developing and revising schedules and resource allocation where data shows the most need	Bell and Cordingley (2014); Blase <i>et al.</i> (2010); Campbell Wilcox and Ives Angelis (2011); Inspectie van het Onderwijs (2024); Lindahl (2010)
	Improvement in teaching	Quality of teaching	Maximizing learning time; Participation in learning networks and cooperation with comparable schools; Enablement of the teachers to figure out what they need to teach their students; Implemented educational quality management plans; Exceptional teaching, learning, assessment and feedback; Learning teams to enhance educational practices; Innovative and proactive interventions to keep students on-track	Agirdag and Muijs (2023); Blase <i>et al.</i> (2010); Campbell Wilcox and Ives Angelis (2011); Fernández Cruz <i>et al.</i> (2016); Inspectie van het Onderwijs (2024); Schleicher (2018); Woods and Macfarlane (2022)
	Quality control of teaching	Quality of teaching	Multiple Sources of Data as Diagnostic Tools to Assess, Identify, and Apply Instructional Improvement; Monitoring student progress; Evaluation strategies; Presence of structured tests to measure student' achievement; Real consequences of the evaluation results (feedbacks and consequent interventions); Frequent monitoring of student progress; Educators interpreting student achievement data to make decisions about teaching; Frequent monitoring of the quality of learning and teaching; High priority on subject knowledge; High teacher accountability; Feedback and reinforcement; Exceptional teaching, learning, assessment and feedback	Agasisti et al. (2012); Agirdag and Muijs (2023); Bell and Cordingley (2014); Blase <i>et al.</i> (2010); Dolejs (2006); Lindahl (2010); Pandla and Gupta (2020); Woods and Macfarlane (2022)
	Effective teaching strategies	Quality of teaching	Careful orientation to lessons; Clear and focused instruction; Effective questioning instructions; Review and reteaching as needed; Academic support; Support for teaching and	Bell and Cordingley (2014); Blase <i>et al.</i> (2010); Hallinger and Hosseingholizadeh (2020); Intxausti et al.(2016); Sweetland and Hoy (2020);

			learning processes; Teacher empowerment in the academic domain; Application of smart educational technologies; Use of group and peer learning; Clear policies for supporting teachers; Importance of modelling learning ; Focus on collaborative learning; Protection of instructional time from interruptions and distractions	Voight et al. (2013); Waters et al. (2003)
	High expectations of students	Stakeholder focus	High standards and expectations for all students; High Expectations and Standards for the Academic and Social Development of All Students; Belief that all students can meet high standards; Relentless focus on engaging and involving students; Maintaining high standards and expectations for all students; High expectations for students; High expectations of students, that are supported by teachers; Goal of exceeding country standards; Use of reward systems to motivate students; High, concrete goals and expectations set for students	Agirdag and Muijs (2023); Campbell Wilcox and Ives Angelis (2011); Hallinger and Hosseingholizadeh (2020); Lindahl (2010); Schleicher (2018); Shannon and Bylsma (2007); Voight et al. (2013); Waters et al. (2003); Woods and Macfarlane (2022)
	Supporting student diversity	Stakeholder focus	Specific services for disabled and foreign students; Sufficient and good facilities for students with additional support needs; Diversity of student needs met with differentiated pedagogical practice, without compromising on standards; Personalized education experience so that all students can meet high standards; Educators using differentiation strategies to reach students at all levels; High-level classes offered to large variety of students; Support for low-achieving students; Improvement in performance of academically weak students, students from disadvantaged background and female students	Agasisti <i>et al.</i> (2012); Campbell Wilcox and Ives Angelis (2011); Dolejs (2006); Hallinger and Hosseingholizadeh (2020); Inspectie van het Onderwijs (2024); Kashiramka et al. (2021); Schleicher (2018)

	Increasing student well-being	Stakeholder focus	Investment in students' well-being; Focus on student well-being; Caring relationships between teachers and students	Ng and Chan (2008); Schleicher (2018); Voight et al. (2013)
	Focus on the community	Stakeholder focus	Engagement of the Community to Create Shared Responsibility for Student and School Success; Parent and community involvement; High level of parental and local community involvement; Curriculum transparent to parents, community members and teachers; School is the heart of the community; Involvement of the community in school's affairs; Effective home and community relations; Parent and community involvement; Advocatement of the school with parents and in the community; Promotion of institute's initiatives	Agirdag and Muijs (2023); Blase et al. (2010); Campbell Wilcox and Ives Angelis (2011); Lindahl (2010); Padilla et al.(2020); Sahu et al. (2013); Waters et al. (2003)
	Focus on the parents	Stakeholder focus	Parent and community involvement; Positive home-school relations; High level of parental and local community involvement; Approachable for parents; Curriculum transparent to parents, community members and teachers; Effective home and community relations; Effective school council meetings; Close communication between school and homes; Parent and community involvement; Advocatement of the school with parents and in the community	Agirdag and Muijs (2023); Blase et al. (2010); Campbell Wilcox and Ives Angelis (2011); Hallinger and Hosseingholizadeh (2020); Khanal et al. (2020); Padilla et al.(2020); Pandla and Gupta (2020); Waters et al. (2003)
	Focus on partnerships	Stakeholder focus	Efficiently managed external partnerships; High-quality partnerships; Collaboration with the local authority and other agencies; Extensive community networks and partnerships with local organizations	Agirdag and Muijs (2023); Bell and Cordingley (2014); Ng and Chan (2008) ; Woods and Macfarlane (2022)
Potential school result factor	Potential school result item		Description	Sources

School results	Results versus comparable schools			Agasisti <i>et al.</i> (2012); Intxausti <i>et al.</i> (2016); Ng and Chan (2008); Pandla and Gupta (2020); Sweetland and Hoy (2020); Teddlie and Reynolds (2000); Waters <i>et al.</i> (2003)
	Results versus the national average			Bell and Cordingley (2014); Campbell Wilcox and Ives Angelis (2011); Samad <i>et al.</i> (2014); Teddlie and Reynolds (2000)
	Financial results versus comparable schools			Lee (2008); Samad <i>et al.</i> (2014); Teddlie and Reynolds (2000)
	Internal satisfaction with school quality			Intxausti <i>et al.</i> (2016); Lee (2008); Samad <i>et al.</i> (2014); Waters <i>et al.</i> (2003)
	Satisfaction with student performance			Intxausti <i>et al.</i> (2016); Lee (2008); Ng and Chan (2008); Pandla and Gupta (2020); Sweetland and Hoy (2020); Waters <i>et al.</i> (2003)
	External satisfaction with school quality			Lee (2008); Voight <i>et al.</i> (2013); Teddlie and Reynolds (2000); Waters <i>et al.</i> (2003)

APPENDIX 2: THE QUESTIONNAIRE

This appendix provides an overview of the HPS and HPO factors and their accompanying characteristics, and the school results items.

HPS factors and characteristics

Quality of the school's organization

- The school has a clear and shared stakeholder-focused purpose, mission, vision and strategy
- The school has ambitious, long-term goals
- 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 applies administrative and operational controls and benchmarks to track performance and achievements
- 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
- The school puts a focus on staff learning and development
- 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.)

HPS 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 strengthen its core competencies.
The school continuously innovates its products, processes and services.

Openness & 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.

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.

School results

Students from the school achieve better results than students from comparable schools.
Students at the school achieve better results than the national average.
The school achieves better financial results than comparable schools.
I am very satisfied with the quality of the school.
I am very satisfied with the performance the students.
The parents of our students are very satisfied with the quality of the school.