

Competence Profile School Management (CPSM) – an inventory for the self-assessment of school leadership

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Abstract The professional demands on school leaders have changed drastically and have become highly complex in the last few years. The professionalization of school leaders is high on the agenda. Human resource management includes different aspects of professionalization. One major domain is the preparation, induction and continuous professional development of individual leaders and leadership teams. Another is personnel marketing and selection, which includes the question of attracting capable future leaders and of appointing the right candidates. However in Europe there is a need for standardised tools which provide systematic feedback to professionals interested in assessing their strengths and individual development needs. Suitable instruments are still scarce. The Competence Profile School Management CPSM (German: KompetenzProfil SchulManagement; KPSM) is the first online-based self-assessment in the German language which has been designed to fit the school context and is based on psychometric principles. It offers participants the possibility to reflect their strengths and weaknesses in different requirement areas of school leadership; and to compare their individual results with peers from the school context, thus gaining valuable information on their individual profiles when planning their professional development and careers. After sketching the theoretical and empirical background, this article presents information about the aims and purpose of CPSM, the tool's development, its test scales and test formats, the results of the pilot study and those of the evaluation study. Then, the further development of the tool in terms of modifications and add-ons are outlined, before, finally, the tool's contribution to practice and research is discussed.

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1 Introduction

The pivotal role of the school leader as a factor in effective schools has been corroborated by findings of school effectiveness research over the last decades (see Moos and Huber 2007; Huber and Muijs 2010; Huber 2010b). School improvement researchers have also demonstrated increasing recognition of the importance of school leaders for all stages of the school improvement process (see Huber and Muijs 2007, 2010; Huber 2010b). The school leader is most often cited as the key figure in the individual school's development, either blocking or promoting change, acting as the internal change agent and overseeing the processes of growth and renewal. Moreover, the school leader's role has to be seen in relationship to the broader cultural and educational contexts in which the school is operating. Since schools are embedded in their communities and in their particular national educational system, and these in turn are embedded in a particular society, schools and their leaders have to cope with, to support or otherwise react to the social, economic and cultural changes and developments taking place. Schools, and consequently the expectations on school leaders, also change as a result of more subtle and indirect forces in society—social, political and economic changes—that are gathering pace across the world. Moreover, direct changes in the educational system have a particularly strong impact on the school leader's role (see Huber 2004a; Huber and Muijs 2010).

In most countries, the tasks and structures of schools and of the education system are changing. These change processes strongly influence the leadership of schools (see Huber 2004a; Huber 2008a, 2010a). On top of traditional tasks, new responsibilities are emerging. Being a school leader means fulfilling diverse and complex tasks which are connected to professional and personal demands. It is the "fit" between job characteristics and a person's skills, attitudes, and ability to learn (potential) that matters.

Consequently, more and more attention is being given to the role of school leaders in creating the conditions for an effective school. There is broad international agreement about the need for school leaders to have the capacities needed to improve teaching, learning, and pupils' development and achievement. For these reasons, it is essential to select and develop suitable individuals for school leadership positions. To establish and modify appropriate selection processes and training and development opportunities has become a major focus of professionalization tendencies in many European countries.

Despite the fact that certain characteristics, abilities and attitudes towards leadership tasks become increasingly important when having to cope with school leadership tasks, teachers do not receive feedback about these qualities on a regular basis. A teacher has a fairly good idea about how much time he or she has to invest for the lesson preparation. Nevertheless, a teacher probably has no insight about (for

example) his or her ability to handle criticism compared to that of colleagues. We lack standardized tools which serve as an orientation for teachers interested in school leadership or for reflecting on personal strengths and weaknesses for experienced members of school leadership teams. In this context, self-assessments can make a useful contribution.

There is good reason to support future school management personnel as early as possible in the job orientation process. While selection is often seen as a one way process of an institution selecting suitable candidates, the overall quality of the work experiences for all parties included is influenced by first of all being able to attract the right candidates and then to help people get an idea whether the new position will suit them. Therefore, supporting processes of orientation and self-selection are equally important.

These processes are or can be integrated into systematic means of professionalization (see Huber 2004a). The professional development of teaching personnel has changed in the last years. At present, internationally, continuous professional development (CPD) no longer relies solely on classical course formats, self study or practical approaches, but also on other learning opportunities and approaches to learning such as professional learning communities, the portfolio approach, and self-assessment/feedback tools. In all these measures—particularly if they are linked—emphasis is put on transfer, reflection and the exchange of what has been learnt with one's colleagues. Application- and action-orientation are central in order to achieve the sustainability desired or required.

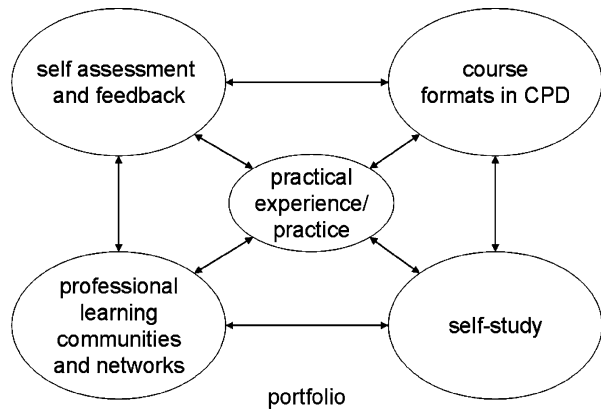
CPD has to take over a diagnostic function much more explicitly so that it can become more needs-oriented and differentiated to the individuals taking part. Moreover, this can promote the individuals' motivation to participate more actively and to learn, that is, for instance, to acquire knowledge, link it with the prior knowledge base and try out new ways of behaviour to broaden the spectrum of options for action. So far, however, elements of self-assessment and feedback have not been integrated sufficiently. In order to provide demand-oriented offers, the prior knowledge, subjective theories, attitudes, expectations, goals and the motivation of the potential participants have to be inquired into. These are the starting point for the conception of CPD and the learning approaches have to be linked to them. It is highly recommended that participants go through a self-assessment for an individual potential analysis in order to receive a feedback on relevant requirement areas and requirement dimensions. Formatively used, the tool provides a good starting point for identifying areas which need improvement and for planning CPD (in terms of a needs-assessment).

An ideal type of continuous professional development takes various learning opportunities and approaches to learning into account (Fig. 1 see also Huber 2009a).

Course formats Course formats are part of the basic methods of continuous professional development. Used innovatively, they take into account that -learning-in terms of modifying one's patterns of behaviour and thinking is to be comprehended as inspiration and information, reflection and exchange, experiment and realization.

Self study Self study, too, is a format of continuous professional development that has been made use of for a long time. In self study methods, the respective topics of the seminars are prepared and explored. 'Good' printed study material is up to date,

Fig. 1 Approaches to learning in CPD including portfolio (see Huber 2009a)



mirrors the state of the art of academic discourse and comprises authentic documents taken from practice, provides the participants with basic and background knowledge, but also with practical transfer support.

Practice Some CPD programmes offer various opportunities of directly integrating the practice into their studies. Of course, practice is always the starting point and goal of CPD measures, particularly when they are needs- and practice-oriented, but it is also a very interesting learning place in itself. The idea is that the real working context as clinical faculty alone comprises the appropriate complexity and authenticity necessary to lead to adequate learning processes. Working on individual projects, classroom observations, shadowing and mentoring provide the opportunity to work on complex problems taken from the practice.

Professional learning communities and networks Professional learning communities and networks are central components in situated learning opportunities and provide chances for an intensive reflection on one's own action and behaviour patterns. In these situations teachers are likely to start from their individual cognitions and beliefs, which control their behaviour patterns, and from their subjective theories, and modify their ways of acting accordingly. Increasingly, professional learning communities and networks become a fixed part of CPD programmes. If teachers are integrated in learning communities and networks outside their own schools, there is an increased opportunity to widen their view and thus, change processes are supported.

Portfolio At the beginning of their continuous professional development, the participants often start a portfolio. The portfolio is suitable to combine teaching and learning with self-evaluation. It documents the development process and supports the individual's professional development planning.

In all these measures—particularly if they are linked—emphasis is put on transfer, reflection and the exchange of what has been learnt with one's colleagues. Application- and action-orientation are central in order to achieve the sustainability of learning desired or required. However one aspect is missing, which is the part of assessment-based feedback. This may not be underestimated as an important learning approach.

Self-assessment and feedback It is highly recommended that participants go through a self-assessment for an individual potential analysis in order to receive a feedback on relevant requirement areas and requirement dimensions. Formatively used, the tool provides as a needs-assessment a good start for planning CPD.

The professional development of teaching personnel has changed in the last years. Here, two preconditions are essential: On the one hand, as mentioned above, CPD has to take over a diagnostic function much more explicitly. By integrating elements of self-assessment and feedback, the prior knowledge, subjective theories, attitudes, expectations, goals, and the motivation of the potential participants can become the starting point for the conception of CPD, to which the learning approaches have to be linked. On the other hand, sustainability has to be drawn attention to much more strongly. How can the step from knowledge to action and the transfer from theory and practice be successfully made? How can what was learned be realized at school? Hereby, the practice-orientation of CPD plays an important role.

Another reason for the importance of self-assessments is evident in the field of human resources development. Even the scope of the best training is limited. As it is known from research on person-job-fit (Caldwell and O'Reilly 1990; Kristof-Brown et al. 2005; Lauver and Kristof-Brown 2001), training effects will be restricted if an individual's motives, values and interests do not correspond with the requirements of the position he or she is going to hold. So far, we have lacked opportunities for teachers and school leaders to find out whether they fit with the personal demands of the modern school leadership role. Internationally, there have been very few tools specifically designed for the school context that help determine the person-job fit regarding a leadership position. The Competence Profile School Management (German: KompetenzProfil SchulManagement; KPSM) is the first online-based self-assessment for school leadership in the German language.

This article presents information about the aims and purpose of CPSM, the tool's development, the test scales and test formats it comprises, the results of the pilot study and those of the evaluation study. Then, further developments of the tool in terms of modifications and add-ons are outlined, before, finally, the tool's contribution to practice and research is discussed.

2 Aims and purpose of the self-assessment CPSM

The aim of CPSM is to offer a tool which can help to analyse the potential of individuals for school leadership roles. It can serve as an orientation for teachers who are interested in school leadership tasks or as a basis for clarifying personal strengths and weaknesses for newly appointed or experienced members of school leadership teams.

The results of the self-assessment represent a person's self-image regarding personality aspects and a person's cognitive abilities. The results are always seen in relation to a relevant reference group. The resulting profile thus enables participants to answer the question: Where do I have to place myself regarding the posed demands compared to others? Therefore the self-assessment offers participants the possibility to reflect on, in an objective context, their own strengths and weaknesses in the different requirement areas for school leadership (Table 1).

Table 1 Benefits of the Competence Profile School Management (CPSM)

Why do participants benefit from the self-assessment?

- It serves as an orientation tool to observe one's own self-perception from a different perspective.
 - It offers the chance to compare one's motives and abilities with those of relevant peers.
 - It provides a basis for reflection on personal strengths and weaknesses.
 - It serves as a stimulus to discuss issues of educational leadership.
 - The results may prompt participants to ask for specific feedback.
 - The results may serve as an impulse to assess one's own demand for education and training.
-

3 Development of the tool

The first version of CPSM was comprised of 30 dimensions, grouped into six job requirement areas. The job requirement areas and assigned requirement dimensions have been deducted from:

- theoretical work (theories of school leadership; see Huber 2004b, 2005b, c; Moos and Huber 2007),
- studies of the job profiles of school leadership (in the German speaking context, see Huber 2003, 2005a, 2007, 2008; Huber and Schneider 2007), and
- reviews of international studies from the field of school effectiveness and school improvement (see Huber 2004a, 2008; Huber and Pashiardis 2008; Huber 2009b, c; Huber and Muijs 2010; Huber 2010b).

Furthermore, we followed the principle that it is important to consider different kinds of information when trying to predict or assess the aptitude for any given job and its related job requirements. As we know from job-fit research it is important to take into account actual knowledge and abilities, the potential to learn (cognitive capacities) as well as personal characteristics such as job related attitudes and motives. Even though it was decided to not measure actual leadership knowledge, the CPSM tries to integrate the different perspectives of cognitive abilities and personality dispositions (see section on test formats).

The tool was developed in cooperation with eligo, experts in web-based aptitude testing, led by Wottawa, chair of methodology, diagnostics and evaluation of the psychology department at the Ruhr-Universität Bochum, Germany. Using the requirements of educational leadership positions as a base, suitable testing scales were chosen from the eligo portfolio of existing test scales. If necessary, items were reworded to fit the school leadership context; new items were added to broaden or adapt concepts. In the end, 30 testing scales made it into the pilot study, which was conducted in Germany in the fall of 2007.

The scales underwent various pre-tests with experts and potential users in three different ways, one in paper version, e.g. with selected scales to improve them, one

as a cognitive interview to see what the participant is thinking during the test, and finally one that mimicked the actual testing scenario, where the participant did the web-based test and was asked to write down notes on a spare sheet for a feedback after the testing.

After analysis of the pilot data, the second version of the tool (CPSM 2.0) has been reduced to 24 job requirement dimensions (test scales) grouped into six job requirements areas (Table 2; the respective test format is indicated in brackets and explained in the next section).

Table 2 Areas, dimensions (scales) and test formats of the CPSM

Work motivation

- Achievement motivation (Motivational grid)
- Avoiding failure (Motivational grid)
- Readiness to work (Questionnaire)

General skills

- Planning skills (Aptitude test)
- Process thinking (Aptitude test)
- Analytical text comprehension (Aptitude test)
- Analytical thinking (Aptitude test)
- Speed of thought (Aptitude test)

Self management

- Self monitoring (Questionnaire)
- Stress resistance (Questionnaire)
- Self efficacy (Questionnaire)

Approach to change

- Power motive (Motivational grid)
- Ambiguity tolerance (Questionnaire)
- Active pursuit of innovation (Questionnaire)

Social approach

- Affiliation motive (Motivational grid)
- Team orientation (Questionnaire)
- Empathy (Questionnaire)
- Readiness to criticism (Questionnaire)

Leadership

- Leadership motivation (Questionnaire)
 - Enthusiasm (Questionnaire)
 - Assertiveness (Questionnaire)
 - Strive for social acceptance (Motivational grid)
 - Avoiding influence by others (Motivational grid)
 - Recognizing limits of feasibility (Questionnaire)
-

4 Test formats

Using the statistical procedures of meta-analysis, Schmidt and Hunter (1998) aggregated results across different studies of over 85 years of research into the validity of different selection methods. The main conclusion is that cognitive ability tests have consistently been found to be the best predictors of job performance (validity coefficients in the order of 0.51 for predicting job performance). Moreover, they found that the inclusion of a personality test or other measures in the selection procedure, alongside cognitive ability tests, further improved the prediction of job performance. These findings and others indicate that successful job performance is dependent on a variety of factors including a wide range of different kinds of abilities and personal characteristics (not just general mental ability and not just personal attitudes or motives). This principle of including different sources of information as well as using different test formats guided the development of the CPSM tool. We integrated achievement tests to focus on various forms of cognitive ability as well as different personality measurements.

4.1 Achievement Tests (AT)

In achievement tests participants are supposed to strive for their best possible performance. Achievement tests often focus on specific abilities for instance the ability to think abstractly, the ability to concentrate, or the ability to think deductively in connection with diagrams and texts. By means of objective criteria, achievement tests measure the performance of the participants while they are performing certain tasks within a certain time frame.

In the CPSM tool we integrated five different achievement tests, all focusing on various aspects of cognitive abilities: an in-basket format to assess planning skills; a test on deductive reasoning in relation to processes (process thinking); two verbal oriented tests on deductive reasoning skills (analytical thinking and analytical text comprehension, see Fig. 2); and a test that focuses on the general intellectual skill of speed of thought.

Personality tests intend to measure the characteristic patterns of behaviour, thoughts, or feelings of a person. Test scores are seen as indicators for the individual degree of the intended personal trait (e.g. sociability, leadership motivation, or team orientation). Several test formats are available to measure personal traits. CPSM uses the classical questionnaire format (Q) as well as a motive grid (MG):

4.2 Questionnaire format (Q)

The participants conduct a self description. They evaluate how far a given statement concurs with their own experiences and attitudes. Thereby, they opt for a rating on a scale from 0 to 100 (see Fig. 3.)

4.3 Motive Grid (MG)

The motive grid is a situational testing procedure (following Sokolowski et al. 2000) to measure different basic motives such as the affiliation motive, power

The screenshot shows the 'Kompetenzprofil Schulmanagement KPSM 1.0' interface. It includes a header with the KPSM logo and the text 'Inventar zum online-basierten Self-Assessment für pädagogische Führungskräfte'. A paragraph explains the task: 'In the course of this test, you will be given six pairs of statements as premises and a number of statements as conclusions. Your task will be to decide for each statement whether it is to be considered true, false or indeterminate on the basis of the given premises alone. Please give your answer by clicking on the statement in question and either dragging it to the box on the left (this classifies the statement as "false"), dragging it to the box on the right if the statement is "true", or leaving the statement in the box in the middle and clicking on it (which classifies the statement as "indeterminate"). Please note, that a statement, that is not highlighted, will not be considered as classified.' Below this, a link says 'Please solve the following example now.' The main area contains two premises in a box: 'All Saracens are monks.' and 'All monks are patient.' Below them is the question: 'Are the following statements true, false or indeterminate?'. Three boxes are shown: 'False' (red), 'Indetermina' (white), and 'True' (green). Three statements are being classified: 'Some patient people are Saracens.' is dragged to the 'True' box; 'No Saracens is patient.' is dragged to the 'False' box; and 'Some monks are not Saracens.' is left in the 'Indetermina' box. Navigation arrows are at the bottom right.

Fig. 2 Screenshot analytical thinking (linguistic)

The screenshot shows the 'Kompetenzprofil Schulmanagement KPSM 1.0' interface. It includes a header with the KPSM logo and the text 'Inventar zum online-basierten Self-Assessment für pädagogische Führungskräfte'. The main area displays the statement 'Sometimes you have to work until late at night.' and the page number '2 / 16'. Below the statement is a horizontal scale from 0 to 100. A blue arrow points to the number '67' on the scale. The scale is labeled 'That doesn't apply at all' on the left and 'That is absolutely right' on the right. A 'Save' button and navigation arrows are at the bottom right.

Fig. 3 Sample item questionnaire format

KPSM Kompetenzprofil Schulmanagement KPSM 1.0
 Inventar zum online-basierten Self-Assessment für pädagogische Führungskräfte

[Impressum](#)

The project meeting:

I disagree | I agree

| | |
|---|---|
| You can make a fool of yourself in this situation. | 6 |
| Seek an exchange of opinions with colleagues in this situation. | 9 |
| It is fun to try and live up to this challenge. | 5 |
| Better keep to the background in such situations. | 1 |
| Want to have influence in this situation. | 2 |
| Cannot give up control in this situation. | 0 |

Save

Fig. 4 Screenshot motive grid

motive and achievement motive with regard to their hope and fear components. Situations or professional settings are presented by means of a drawing and a brief heading together with standardized statements as it is known from the classical questionnaire format. The participants estimate, how they would judge such a situation, and accordingly how they would act in such a situation; the participants opt for a rating of given statements on a scale from 0 to 10 (see Fig. 4).

5 Administration of the CPSM

Being an online-based tool, CPSM provides participants the liberty to conduct the assessment from any location. It includes a password protected access permitting a singular administration. It provides a procedure without third person observation or third person knowledge; all entries are transmitted in encoded form. The duration of the assessment varies from person to person.

Figure 5 shows in a bar chart the frequency distribution of the time required for the administration for the 30 testing scales from the pilot group. Times vary highly; participants needed between 79 and 486 min. A further indicator for the high differences in duration is the standard deviation of almost an hour (55.6 min). The median falls between 2 and 3 h (168 min).

Since the self-assessment is administered on a computer, the duration times represent the time of being connected with the tool online and may include

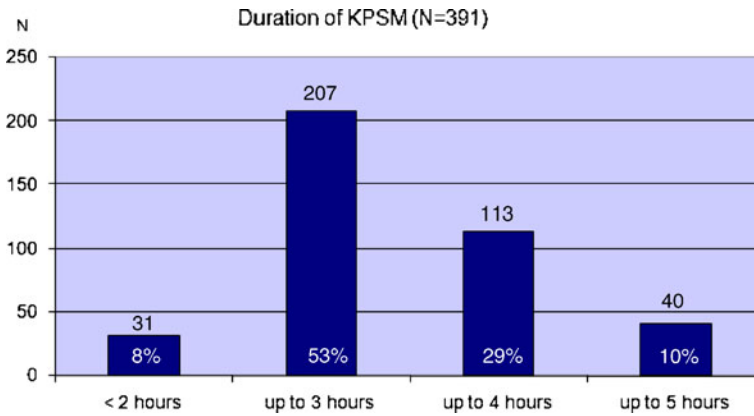


Fig. 5 Time required for administration (minutes)

interruptions (e.g. phone calls). The presented times, therefore, stand for the maximum duration of the administration. Furthermore, Future participants are expected to have their time required for administration reduced by around 20% due to the reduced number of test scales in the actual version of the tool.

Immediately after finishing the self-assessment, the participant receives an email on how to download the personal feedback report (password protected). The feedback report comprises extensive feedback on all of the six requirement areas with the 24 requirement dimensions. It includes explanations of how to read the report, understand the test scores, interpret one's test scores (percentile rank), and a description of the individual requirement dimensions. With the formative purpose of the tool in mind, the report doesn't provide a summative score or statement about a person's actual fit to take over a leadership position. Rather the feedback texts describe possible advantages and disadvantages that come along with the personal score in a given test dimension. Thus, it is still up to the personal reflection to integrate the results into an opinion (with help of workshop exercises, a coach or trainer if wanted) on how close a fit with a leadership position might be.

6 Results of the pilot study: Standardization and psychometric measures

The pilot study was conducted in Germany in 2007 and 2008 within the Thuringian development programme for teachers interested in school leadership. The participation in the self-assessment was carried out in the first module of the first phase (i.e. the orientation phase) on a voluntary basis. Separate enrollment in the study was required and the participants paid a small fee. The participants received a data protection notice which guaranteed that the results of the self-assessment would not affect the participants' career. They were also assured that the feedback report would serve as information for individual evaluation purposes only and would not be shared with authorities within the school system or elsewhere.

6.1 Sample

The norm group consists of 396 participants. 70% are women and 30% men. The ages range from 27 to 59 years, the average age is 43 years ($SD=5.00$). Around 32% of the teachers interviewed work in the “Regelschule” (non-selective secondary schools), 21.3% in the Gymnasium (selective grammar schools) and 21.1% in vocational schools. A minority of 3% teachers work in comprehensive schools in Thuringia. On average, the teachers teach 17 lessons per week ($SD=5.86$). On average, the participants have been teaching for 17.5 years including their years of school-based teacher training. On average, the interviewees have worked at three different school sites. 21% claim to have worked as class teachers and 10% are experienced as heads of department. Furthermore, 51% have working experiences beyond the school context. 51% of them claim to have gathered these experiences before working as a teacher.

6.2 Results

The pilot study included 30 test scales of which 24 were kept in the second version of the tool: CPSM 2.0. The data analysis showed that the items of six scales were answered fairly homogeneously by the participants with almost no variance and were eliminated from the tool. The six excluded dimensions were consensus orientation, cooperation, employee-orientation, self-management, self-assurance, and goal orientation.

6.3 Objectivity

The PC-based test administration ensures a highly standardized test procedure. All the CPSM test scales guarantee inter-scorer objectivity through the fully automatic coding of answers and calculation of test results and the automatic generation of the feedback report. At the same time this forms a basis for objectivity in interpreting the test results when the tool is used appropriately.

6.4 Reliability and validity

The test scales of the 24 requirement dimensions show good reliability coefficients (Cronbach’s alpha) mostly between .70 and .86. According to the German test standards DIN33430,¹ reliability scores ideally range from .70 to .85. Overall, 19 test scales have achieved or excelled this range (see Table 3).

The reliability of the scales “readiness to criticism” and “pursuit of social acceptance” are slightly below the required level of .70. The test scale “self-monitoring” failed the aspired level of .70 more clearly. However those test scales have been used successfully in other projects before, showing satisfactory alpha coefficients. Thus, we expect a better alpha coefficient in a reanalysis of data in an even more heterogeneous sample. Furthermore, we have new items currently under revision to improve scale homogeneity.

¹ Requirements for proficiency assessment procedures and their implementation. German Standard.

Table 3 Reliability of the CPSM scales (Cronbach's Alpha)

| Name of scale | Cronbach's Alpha |
|----------------------------------|------------------|
| Active pursuit of innovation | .78 |
| Achievement motivation | .80 |
| Affiliation motive | .74 |
| Ambiguity tolerance | .80 |
| Analytical thinking (linguistic) | .71 |
| Analytical text comprehension | .50 |
| Assertiveness | .71 |
| Avoiding failure | .80 |
| Avoiding influence of others | .80 |
| Empathy | .76 |
| Enthusiasm | .71 |
| Leadership motivation | .74 |
| Planning skills | .86 |
| Power motive | .73 |
| Process thinking | .63 |
| Pursuit of social acceptance | .69 |
| Readiness to criticism | .67 |
| Readiness to work | .79 |
| Recognizing feasibility limits | .77 |
| Speed of thought | .84 |
| Self-efficacy | .82 |
| Self monitoring | .58 |
| Stress resistance | .75 |
| Team orientation | .71 |

The alpha coefficients of the scales “analytical text comprehension” and “process thinking” are clearly below satisfactory level as well. Nevertheless, they were kept in the tool, for the following reasons:

The alpha coefficient is a measurement of internal consistency. However, it is not surprising that the alpha coefficient is low for the two test scales mentioned. Both test scales were developed not primarily to measure a single psychological construct but as samples of tasks from the practical world. The array of test items represents a higher diversion than it is common for ability test that often focus on specific narrow constructs. Consequently, the result of such an approach to the test development is that lower test consistency scores can be expected (see Lienert and Rantz 1994, p. 200) In the future, studies on the retest-reliability of these test scales must be conducted.

A further indication of the usefulness of the scales was that both scales show substantial significant correlations with other ability test scales in the tool, especially correlations with the highly consistent scale “planning skills” (see Table 4).

Table 4 Achievement tests inter-correlations ($N=396$)

| Scale | 1 | 2 | 3 | 4 | 5 |
|--------------------------------------|---------|----------|---------|----------|---------|
| (1) Speed of thought | 1 | .19(**) | .25(**) | .30(**) | .38(**) |
| (2) Analytical text comprehension | .19(**) | 1 | .31(**) | .33 (**) | .44(**) |
| (3) Analytical thinking (linguistic) | .25(**) | .31 (**) | 1 | .21(**) | .32(**) |
| (4) Planning skills | .30(**) | .33 (**) | .21(**) | 1 | .47(**) |
| (5) Process thinking | .38(**) | .44(**) | .32(**) | .47(**) | 1 |

** $p < .01$

Additional studies on the psychometric measurements of the tool shall be conducted, especially focusing on retest reliability, construct and criterion related validity.

7 Results of the evaluation study

All the persons that had been invited to participate in the self-assessment pilot were explicitly invited again via email to provide feedback on their perception of the self-assessment. Among them were persons who had not finished the self-assessment or had not even started it. The data collection was conducted in the first quarter of 2008 via a standardised online questionnaire also including some open questions. The questionnaire focused on the participants' experiences, the information about the self-assessment they had received beforehand, the test administration, the results and their usefulness, and further professional perspectives and development planning. Besides the rather technical issues of the tool or procedural aspects, the key aspect of the usefulness of such a tool relates to its social validity and acceptance. Therefore, in the following sections, the emphasis will be put on issues of the expected and experienced usefulness of the results. The inquiry period covers the first quarter of 2008.

7.1 Sample

As a whole, 264 participants of the pilot study took part in the evaluation study. Of those, 95% had finished the self-assessment completely. Only a small number of participants did not start or had had to interrupt the assessment procedure due to lack of time ($N=7$) or problems with their internet access ($N=3$), two participants reported on motivational problems.

7.2 Results

7.2.1 Fit

Of special importance is the question how well the participants see themselves reflected in the results. We asked the participants to rate how well the explanations of test scores matched their own self-image. Contrary to some spontaneous assumption, the aim is not that the participants get the impression that the results

fit completely with their own self-image. To the contrary, due to the standardization and norming procedures, it is expected that the results show some differences and discrepancies and—hence—provide new insights. Thus, it is very positive that the percentage of extreme rankings (category 1: not fitting at all and 4: completely fitting) on a four-point scale is very low. Only 1% state that the results do not fit at all (category 1). 5% state that the test results completely fit to their self-image (category 4). For 60% the results predominantly fit with their self-image (category 3). And for 34% of the participants, the results did not fit with their own self-image in some aspects (category 2).

7.2.2 *Expectations*

There are quite homogeneous expectations towards a self-assessment: 73% of the participants expect an improved assessment of their personal strengths. 38% expect a better judgment of demands on school leadership positions. 27% took part out of curiosity. 31% expect some inspiration for suitable positions (6% chose the category “another purpose”). Thus participants mention expectations which completely correspond to the tool’s aims and formative purpose. Furthermore, the participants were asked if their expectations were met: 79% responded in a positive way (expectations were rather met, met or exceeded), and 21% claimed that their expectations were rather not, not, or not at all met.

7.2.3 *Usefulness and recommendation*

With regard to what kind of benefit they received, participants clearly identified the core aims of self-assessment. The majority of participants claim that by completing the self-assessment they were advised of aspects worth thinking about (75%) and taking into account in future (79%). Also, the self-assessment is regarded to have been interesting by 90% and the same number of participants considers such a self-assessment tool to be useful for teachers aspiring to obtain a school leadership position. The majority (82%) would recommend the tool to colleagues.² Figure 6 shows what participants gained through the personal feedback report. Also, the self-assessment inspired people to take various actions (see Fig. 7). Interestingly, while the range of actions varies widely, only few people claim not having done anything by the time of the evaluation. But we also learn from this result that there is still a way to go in establishing means for orientation and feedback for teachers interested in school leadership. One indicator is that only a few participants discussed the results with their trainer or coach. On the other hand, we are happy to see that at least some participants were looking for professional guidance—given that coaching or career counselling services are not provided in the German Education system. Rather, participants will have to find a suitable coach on their own and pay for the session privately.

² In the analysis of the evaluation results of the next group of ca 500 participants, which we are currently undertaking, an even higher majority of 91% would recommend the tool to colleagues.

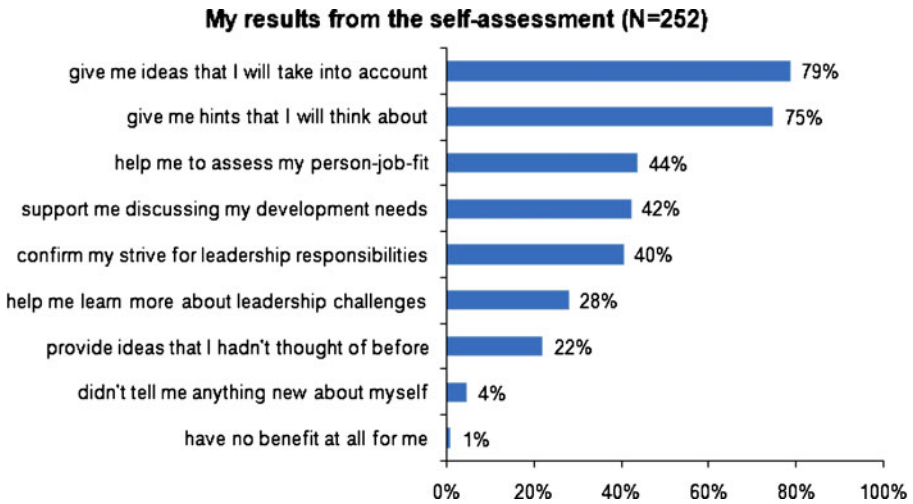


Fig. 6 Usefulness of the personal feedback report

7.2.4 Consequences of the participation

Figure 7 shows quite impressively what participants did after taking part in CPSM.

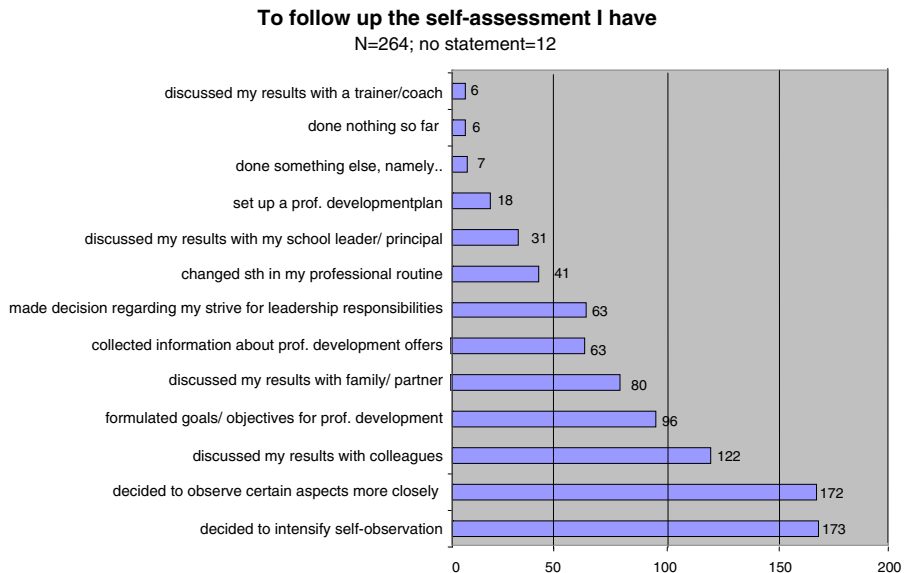


Fig. 7 Consequences of the participation

7.2.5 Evaluation results of CPSM 2.0

A full account of the evaluation of CPSM 2.0, above all further findings regarding social validity (Schuler and Stehle 1983, 1985; Schuler 1990), will be presented by Huber (2011). A first comparison of the evaluation results of CPSM 1.0 and CPSM 2.0 shows an enhanced or stable development. Regarding organisation and technical criteria, both CPSM 1.0 and 2.0 are evaluated equally good. The benefit and usefulness of the individual results are rated similarly well. The perceived fit of result and self-image are the same. The recommendation quota increased from 76% (CPSM 1.0) to over 91% (CPSM 2.0). Recommendations for further improvement given by the participants mainly focused on the duration time for completing the self-assessment. Although it was shorter (by about 20 min) for CPSM 2.0, the time input is still regarded very high (2.5 h) by many (45%) of the participants, who perceive the CPSM self-assessment as too long.

8 Further developments: Add-ons of CPSM

By now, CPSM has been carried out in Germany and Switzerland with a total of 1100 participants. In addition to the online-based self-assessment, workshops and individual counselling sessions are available for participants. These follow-up programs provide an exchange in a professional framework, in which participants have the opportunity to gain a deeper understanding of the test results and to discuss—with peers or experts—possible conclusions.

8.1 Workshop

The workshop linked to CPSM addresses participants who have completed the self-assessment. It includes lectures, group work and discussions regarding the individual feedback report, and furthermore it provides additional information on the tool's background. Participants are given the opportunity to ask further questions about how the test scores come about or how to interpret one's test scores (percentile rank) and the overall results. Individual and group reflection is stimulated. There is group work which allows discussions about which steps may be taken now, about possibilities for individual professional development planning, and where to obtain further feedback.

8.2 Counselling session

Another additional offering is the individual counselling session. It provides the opportunity for an in-depth personal reflection. The results of the self-assessment can be discussed more thoroughly. The results of the self-assessment are commented on from the perspective of the individual and professional situation and the career management of the participant. The goal is to deepen the insights provided by the self-assessment in order to identify strengths and potential fields of development and to detect possibilities for further steps in the professional development or specific personnel development measures. Furthermore, specific situational context aspects may be reflected upon and discussed, which are

connected to the individual school's working environment (external characteristics of the organisation) and which may have an impact in terms of strain and stress. A counselling interview takes about 90–120 min. The number of interviews differs according to individual demand.

Further of these offerings additional online-based modules are in preparation, regarding a knowledge test module for various topics of school management and a module for a comparison of self-image and external image.

8.3 Knowledge test module “practice knowledge for school management”

Besides abilities, skills, attributes, and motives, it is the know-how that affects a person's professional success. It is possible to develop knowledge modules for different topics of school management. Even though it is not assumed that relevant knowledge for school leadership tasks may be displayed as a whole in the form of a knowledge test, participants still may get the opportunity to check their own level of knowledge of selected central fields of knowledge of school management. Thereby, it is possible that the contents may be developed according to guidelines of the qualification programme. Thus, the participants get the chance to assess their knowledge in comparison to general guidelines—once the standardization has been conducted—compared to others. The technical implementation of knowledge modules may be carried out quickly on the basis of existing technologies and experiences in the field.

8.4 External image module

Apart from assessing analytical abilities in the performance tests, the CPSM self-assessment assesses the self-images of participants in connection with the different requirement dimensions compared to those of others. In this respect a test score shows how a person describes her-/himself and where she or he has to place herself/himself compared to others. In addition to this, it may be useful to be able to compare this self image to an external image of the respective person. Supplementary to the self-assessment CPSM, participants will soon have the ability to invite persons of their choice as critical friends to fill in an external image inventory, which describes their external perception of the participant with regard to selected requirement dimensions. A specially designed procedure allows a comparison of the CPSM feedback report with the external images of the critical friends. This comparison of self-image and external image may additionally shed light on the participant's own strengths and fields of development. Conceptual preparatory work for the content and technical possibilities for the implementation will soon be completed.

9 Resumé and looking ahead

In view of the demands on school leadership personnel and their relevance for the quality and development of schools, issues of their selection, qualification and professionalization are becoming increasingly urgent. Teachers interested in

school leadership expect support concerning responses to questions of their person-job-fit, such as in which requirement areas of the aspired position they already have enough potential at their command and where they still have needs for development. The Competence Profile for School Leadership (German: KompetenzProfil SchulManagement; CPSM) is the first online-based self-assessment in the German language that has been specially adapted to the school context and developed according to psychometric principles. A special focus is also given to its social validity and acceptance in the field.

About 400 participants joined the pilot study. Based on the pilot data basic psychometric properties of the testing scales were explored, 24 out of 30 test scales showed a good variance and were included in the actual version of the CPSM self-assessment tool. Of those, 20 test scales show a level of consistency of Cronbach's alpha of .70 or higher (therefore meeting the German test standards DIN 33430). Three test scales show alpha coefficients slightly below the mentioned level; the achievement tests "process thinking" and "analytical text comprehension" show even much lower coefficients. However, it was argued that for now the two cognitive scales are not excluded from the tool due to their focus on practical demands rather than on specific psychological constructs. Furthermore they show moderate but significant correlations to the highly consistent test scale "planning skills". In sum, the administration of CPSM by the pilot group shows that

- a self-assessment such as CPSM gains a great amount of popularity, since more than 400 persons made use of this optional offer and would recommend the tool to colleagues as stated by 82% of the participants in the evaluation study,
- the first adaption in the German speaking part of such a tool to the school management context can be regarded as successful content wise, since so far no feedback has indicated any lack of fit of questions or test scales,
- out of 30 scales, 24 scales have already proven useful in the first run,
- most participants have reasonable expectations corresponding with the purpose of the tool,
- results are claimed to be meaningful to the participants by providing new insights (ideas they will take into account in the future or at least think about).

Putting the emphasis on issues of the expected and experienced usefulness of the results, the evaluation study shows that regarding

- the fit, it is very positive that for 60% the results predominantly fit to their self-image and that the percentage of extreme rankings (not fitting at all and completely fitting) on a four-point scale is very low,
- the meeting of expectations, 79% of the participants responded in a positive way,
- the tool's usefulness and recommendation, the majority of participants (75%) claim that by the self-assessment they were advised of aspects worth thinking about and taking into account in future (79%) and would recommend the self-assessment to colleagues(82%),
- consequences of the participation, 66% decided to intensify self-observation, 65% decided to observe certain aspects more closely, and 36% formulated goals/objectives for professional development.

From the practical point of view, further evaluations on the perceived usefulness and the acceptance of the tool shall be carried out. As a further development, add-ons of the tool are planned. Among them are additional online-based modules regarding a knowledge test module and a module for a comparison of self-image and external image.

From the scientific point of view the first results seem promising. Nevertheless, the first psychometric examination shows that further development and improvement of some of the testing scales is necessary. Concretely, studies on retest reliability and criterion validity of the procedure are due.

Possible cultural differences are an important aspect of assessment procedures being used beyond the national level. So far we have received feedback about possible item sensitivity in lingual nuances or cultural variations only sporadically. However, with more diverse samples we will investigate potential regional and cultural difference. If systematic differences are found, new reference groups shall be implemented to address these differences.

Looking ahead, the tool provides interesting opportunities for research in the field of school leadership. Using CPSM provides the opportunity possibility to explore whether different “types” of school leaders with systematic differences in their test profiles exist. Also, it will be interesting to see if results in the self-assessment tool vary systematically depending on background variables such as teaching subject, age, professional experience, gender, educational values, or social context variables such as school size or with urban vs. rural schools. Furthermore, comparing results of leadership personnel from different professional settings (e.g. educational vs. economic context) could reveal useful insights in understanding the characteristics of educational leadership personnel. Finally, using CPSM at multiple stages offers a possibility to explore different kinds of changes over time: on one hand changes over time for one person (e.g. before and after taking over leadership and management functions), and on the other hand changes over time for a number of people (i.e. a certain cohort, e.g. in terms of trends). To sum up, the tool shows that besides conducting research on the tool, there is the chance to carry out research with the tool in the field of school leadership to gather data. Hence, the instrument developed will be further modified and used as a self-assessment tool and in leadership research.

Finally, we would also like to address some limitations of such a tool. The most important aspect is to not confuse CPSM results with an overall summative statement on a person’s fit for educational leadership tasks. Methodologically, the best way to ensure profound diagnostic decisions lies in combining trait-related, behaviour-related and outcome-related data (see trimodal concept of personnel decisions, Schuler & Höft 2004, 2006). CPSM addresses only trait related information and does not take actual behaviour or achieved outcomes into account. Consequently, defining a person’s fit for school leadership tasks cannot be based on CPSM (or any other single source) alone. Secondly, CPSM focuses on general requirement aspects and does not address functional knowledge. Thirdly, any general requirement profile will be incomplete. Additional requirements derive from the national, regional or local context of a school and should be considered as well. But it does not make sense to include specific job requirements into a standardized assessment procedure. This shows clearly the limitations of such a tool for summative decision making.

In sum, given the need for CPD to offer diagnostic tools as well, CPSM makes a contribution to supporting processes of orientation and self-selection for the potential candidates of leadership positions. The use of online-based self-assessments on a voluntary basis allows participants to get feedback on their strengths and weaknesses in a time- and cost-effective manner. It is an easy-to-access starting point for a structured personal reflection on the individual readiness to join an educational leadership role.

Appendix: Descriptions of the test scales of CPSM 2.0

The Competence Profile School Management (CPSM 2.0) consists of 24 job requirement dimensions (test scales) grouped into six job requirements areas. The respective test format (see legend) is indicated in brackets.

Work motivation

- *Achievement motivation*: This dimension measures the extent to which people show hope of success and experience performance-related situations as a challenge and seek to demonstrate their capability. (MG)
- *Avoiding failure*: This dimension measures the differences between people regarding their emotional reactions to performance related situations. Thereby, it is of interest to what extent a person fears failure and mistakes and worries about possible consequences. (MG)
- *Readiness to work*: This dimension describes a person's willingness to deploy her/his resources (time and energy) to achieve professional goals and to pay the price for their commitment, e.g. by giving up part of their leisure time. (Q)

General skills

- *Planning skills*: This test is a PC-based planning exercise (booking schedule for a school's lab); it assesses a person's skill to conduct a plan that meets the given targets and that considers all constrictive criteria at the same time. (AT)
- *Process thinking*: This test assesses a person's ability to discover the logic inherent in flow charts, draw adequate conclusions, and add missing process elements in a way that makes sense by taking premises into account. (AT)
- *Analytical text comprehension*: The test on analytical text comprehension assesses a person's ability to understand a short text on a generally understandable set of facts (e.g. on the topics of business, history or society), and to deduce conclusions from its contents. (AT)
- *Analytical thinking (linguistic)*: Based on two premises participants judge statements as true or false. The test assesses a linguistic dimension of analytical thinking. Scores on this scale allow inferences as to the ability to discover existing relations between concepts. (AT)
- *Speed of thought*: This test assesses the ability to mentally sort series of numbers under time pressure. Good performance on this kind of task indicates a high speed in the performance of thought processes. (AT)

Self management

- *Self monitoring*: This dimension measures a person's capacity to perceive his own actions from a distant perspective, assess them and adapt them to the needs and expectations of others. (Q)
- *Stress resistance*: The dimension describes how people experience and react to situations where they have to deal with great stress. (Q)
- *Self efficacy*: The dimension describes how people see their confidence in one's own ability to successfully deal with new situation and to do one's work well. (Q)

Approach to change

- *Power motive*: This dimension measures the extent to which people make use of opportunities and seek to exert an influence on other people or situations. (MG)
- *Ambiguity tolerance*: The dimension assesses how open a person is towards not clearly defined situations (e.g. due to lack of information) and will react with greater or lesser discomfort. (Q)
- *Active pursuit of innovation*: This dimension assesses a person's openness to change, the inclination to view change in teaching methods as well as with regard to the organisation of the school as something positive and to actively initiate change. (Q)

Social approach

- *Affiliation motive*: This dimension describes to what extent a person shows hope of a affiliation and seeks out the company of others considering it important and worthy to seek contacts with others. (MG)
- *Team orientation*: Some people would rather work alone, while others prefer to cooperate in teams. This dimension indicates a person's preference for either work style. (Q)
- *Empathy*: This dimension measures a person's ability to put herself/himself in someone else's place. (Q)
- *Readiness to criticism*: This dimension assesses to what extent a person is willing to express criticism and to see criticism as necessary in order to achieve good work results. (Q)

Leadership

- *Leadership motivation*: This dimension describes to what extent a person assumes responsibility, leading roles, and as a centre of attention actively shapes processes and interaction. (Q)
- *Enthusiasm*: This dimension measures a person's ability to rally others to a cause. It implies that he/she is prepared to show emotions also at work so as to inspire real, even emotional agreement and enthusiasm in others. (Q)

- *Assertiveness*: This dimension describes a person's inclination to clearly state her/his own viewpoint, demands and expectations of others in potential conflict situations. (Q)
- *Pursuit of social acceptance*: The dimension assesses the emotional reactions in interaction (e.g. nervousness or discomfort) that may be caused by actual rejection or even just the fear of being rejected by others. (MG)
- *Avoiding influence by others*: People differ in the extent to which they fear power of others and seek to avoid the influence of others on their own sphere of responsibility. (MG)
- *Recognizing limits of feasibility*: This dimension assesses whether a person assumes that people can do anything if they only make an effort or whether they tend to primarily recognize the inherently problematic nature of a given situation. (Q)

Legend:

(AT) Achievement test (MG) Motive grid (Q) Questionnaire

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