Internal quality assurance in education: an instrument for the assessment of interpersonal teaching skills

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INTERNAL QUALITY ASSURANCE IN EDUCATION: 
AN INSTRUMENT FOR THE ASSESSMENT OF 
INTERPERSONAL TEACHING SKILLS¹.

PERRY DEN BROK, MIEKE BREKELMANS

1 INTRODUCTION

Recent developments in education, such as increased budgetary freedom of 
schools, more demanding and active parents or students, and publication of ratings 
of school performance in newspapers and on the Internet, force schools to provide 
more and more information on their quality and their efforts to uphold it. Because 
of this increased external pressure on quality assurance, schools and similar 
institutions also increase their efforts in internal quality assurance. As a consequence, there is a growing need for instruments that contribute to the 
process of internal quality assurance.

A major role in the quality of a school and the learning of its students is played by 
the teacher. This argument is supported by research from several educational 
domains, such as educational effectiveness research (e.g. Creemers, 1994), 
learning environments research (e.g. Fraser, 1998) and educational psychology 
(e.g. Shuell, 1996). This paper discusses an instrument that can be used for internal 
quality assurance and that assesses the quality of interaction between students and 
teachers. Interaction is one of the most important factors in teaching, as it directly 
relates to order in the classroom, one of the most common problem areas in 
education according to teachers (Veenman, 1984). The instrument is called the 
Questionnaire on Teacher Interaction (QTI), and is one of the most widely used 
instruments for assessment of teachers – but also school management – in the 
Netherlands, Australia and United States.

The structure of this paper is as follows. First, the theoretical framework behind 
the instrument is presented. Second, a description of the actual instrument is given, 
followed by an outline of the procedure used in working with the instrument. 
When discussing this procedure, the role of students is also discussed. Finally, 
avenues for improvement of teacher quality and applications of the instruments, 
including some research, are provided.

¹ This paper is based on a workshop on internal and external quality assurance in 
education, given by P. den Brok for the EG-funded TEMPUS project STAMP (European 
Standards for Advanced Manufacturing Technologies and Intellectual Property, IB_JEP-
14092-1999, project leader: Ing. Peter Kosc, CSc., Technical University of Kosice), 
October 2001 in Kosice and the Hague (the Netherlands).
2 THEORETICAL FRAMEWORK

Because teachers communicate in many ways, they naturally develop different types of relationships with students. Some teachers are businesslike and others lenient. Some are distant and others friendly. To describe these characteristics more clearly, the communication model of Timothy Leary (Leary, 1957; see Wubbels & Levy, 1993), a clinical psychologist, was adopted. Leary stated that people communicate according to two dimensions – a Dominance/Submission (or Influence) dimension (for example, who is controlling the communication), and a Cooperation/Opposition (or Proximity) dimension (how much cooperation is present between the people who are communicating). Occasionally, the dimensions have been given different names by educationalists, such as ‘warmth’ and ‘power’, or ‘authority’ and ‘affiliation’. We can record the behaviour of all participants in an interaction according to these dimensions on a graph like the one shown in Figure 1.

![Figure 1. The model for interpersonal communication.](image-url)

The communication of both (or all) parties in interaction can be recorded on the chart according to how cooperative they are, who is controlling the interaction and to what degree. Let's imagine a dialogue between a mother and her young son on the subject of crossing the street. As the parent explains the process she is engaging in Dominant communication, since she is controlling the interaction. If her explanation is presented in a patient, comfortable manner, her communicative approach would also be highly cooperative. Thus, she would be displaying
a highly Dominant - highly Co-operative style. This behaviour would be located in the DC quadrant. If, however, the child has just nearly been run over by a bus the parent is likely to be agitated and possibly angry. She might even scream at the boy to be more careful. Her communication in this case would still be Dominant but also highly Oppositional, and would be located in the DO quadrant.

Researchers subsequently applied the model to teaching (Wubbels & Levy, 1993). They built a paradigm which divided Leary’s original two dimensions into the eight different sectors shown in Figure 2, which demonstrates how the Leary model can be translated to the classroom.

Figure 2. The model for Interpersonal Teacher Behaviour (from: Wubbels & Levy, 1993).

The figure shows how the interactions described above may be represented in the model. The eight sectors are labelled DC, CD, etc. according to their position in the co-ordinate system (much like the directions on a compass). For example, the two sectors DC and CD are both characterised by Dominance and Co-operation. In the DC sector, however the Dominance aspect prevails over the Co-operation aspect. Thus, a teacher displaying leadership (DC) might be explaining something to the class, organising groups, making assignments, and the like. The adjacent helpful/friendly (CD) sector includes behaviours of a more co-operative and less dominant character, and the teacher might be seen assisting students, or acting friendly or considerate. The boundaries between sectors are not strict, as there is overlap between neighbouring categories. For example, behaviour such as listening to students has both Helpful/Friendly and Understanding characteristics. On the other hand, sectors opposite each other on the chart describe opposite behaviour (Student Responsibility/Freedom vs. Strict, for example). Table 1 lists examples of teacher behaviour for each of the eight sectors of the model.

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Table 1. Examples of teacher behaviour for the eight sectors of the Model for Interpersonal Teacher Behaviour.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Examples of teacher behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEADERSHIP (DC)</td>
<td>organizes, gives directions, sets tasks, determines procedures, is aware of what’s happening, structures classroom situation, explains, makes intentions clear, holds class attention</td>
</tr>
<tr>
<td>HELPFUL/FRIENDLY (CD)</td>
<td>assists, shows interest, shows concern, is able to take a joke, inspires confidence and trust</td>
</tr>
<tr>
<td>UNDERSTANDING (CS)</td>
<td>listens with interest, empathizes, shows trust, is accepting, looks for ways to settle differences, is patient, is open</td>
</tr>
<tr>
<td>STUDENT RESPONSABILITY/FREEDOM (SC)</td>
<td>gives opportunity for independent work, is lenient, allows students to go at own pace, waits for class to settle down, approves of student activity</td>
</tr>
<tr>
<td>UNCERTAIN (SO)</td>
<td>acts hesitant, apologizes, has ‘wait and see’ attitude, is timid</td>
</tr>
<tr>
<td>DISSATISFIED (OS)</td>
<td>is disapproving, questions seriously, looks unhappy or glum, criticizes</td>
</tr>
<tr>
<td>ADMONISHING (OD)</td>
<td>gets angry, is sarcastic, expresses irritation, forbids, admonishes, punishes</td>
</tr>
<tr>
<td>STRICT (DO)</td>
<td>keeps a tight rein, checks, judges, demands silence, sets rules, gives hard tests</td>
</tr>
</tbody>
</table>

It is important to note that teachers can exhibit acceptable behaviour in each sector. There are situations in which it is appropriate for a teacher to be dissatisfied, or uncertain, or admonishing (or any other category). It appears that most teachers have communication styles with behaviours in every category.

3 THE INSTRUMENT

To assess interpersonal teacher behaviour, the Questionnaire on Teacher Interaction (QTI) was designed according to the two-dimensional Leary model and the eight sectors. It was originally developed in the Netherlands, and a 64-item American version was constructed in 1988. Items were formulated, based on large numbers of interviews with both teachers and students, and the construction process of the questionnaire included many rounds of careful testing (Wubbels & Levy, 1993). The original version for Secondary Education teachers formed the
basis of several new versions, such as a version for Primary Education teachers, for Higher Education teachers (the Questionnaire on Lecturer Interaction, or QLI), for supervisors, and one for school managers (the Questionnaire on Principal Interaction, or QPI). In the version for school management, teachers rate the interpersonal behaviour of their managers. The instruments exist in the following languages, among others: Dutch, English, German, Hebrew, Russian, Slovenian, Swedish, Finnish, Spanish, Mandarin Chinese, Singapore Chinese and Indonesian.

The QTI has a five-point response scale, ranging from "Never" or "Not at all" to "Always" or "Very". It is scored on the basis of eight sectors or two summarising dimensions of Influence (or DS) and Proximity (or CO). The Dominance/Submission (DS, also known as influence) dimension is primarily comprised of behaviours in the sectors closest to the DS axis - strict, leadership, uncertainty and student responsibility/freedom. The sectors which mostly make up the Co-operation/Opposition (CO, or proximity) dimension are helpful/friendly, understanding, dissatisfied and admonishing. In Table 2 typical items are provided for each of the eight sectors of the QTI².

**Table 2. Typical items of the English version of the QTI.**

<table>
<thead>
<tr>
<th>Scale (sector)</th>
<th>Typical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC – leadership</td>
<td>This teacher acts confidently.</td>
</tr>
<tr>
<td>CD – helpful/ friendly</td>
<td>This teacher is friendly.</td>
</tr>
<tr>
<td>CS – understanding</td>
<td>This teacher is patient.</td>
</tr>
<tr>
<td>SC – student responsibility/freedom</td>
<td>We can influence this teacher</td>
</tr>
<tr>
<td>SO – uncertain</td>
<td>This teacher is hesitant.</td>
</tr>
<tr>
<td>OS – dissatisfied</td>
<td>This teacher is suspicious.</td>
</tr>
<tr>
<td>OD – admonishing</td>
<td>This teacher gets angry quickly.</td>
</tr>
<tr>
<td>DO – strict</td>
<td>This teacher is strict.</td>
</tr>
</tbody>
</table>

The QTI has acceptable reliability and validity when used in grades 7 to 12 (Wubbels & Levy 1993). A recent review on the validity and reliability of over 20 studies that have used the QTI during the last 17 years (Den Brok, 2000) showed that reliability of the eight scales (sectors) is sufficient and consistent across classes. Moreover, the review showed that the theoretical structure of the interpersonal model was represented in the items and scales of the instrument.

² The complete instrument, as well as versions for management, supervisors or Higher Education teachers can be obtained from the author.
4 PROCEDURE

If teachers have agreed upon using the questionnaire for their assessment, usually the following procedure is followed. Teachers normally wait a few months into the school year, until everyone gets to know one another, before administering the questionnaire. To receive feedback from the widest range of student groups, teachers usually select two classes that vary in age, learning ability or some other characteristic (ironically, QTI scores from the different classes generally don’t vary as much as teachers think). Each student answers the questionnaire items in terms of how he or she perceives the teacher (student perception). The teacher also completes the instrument (self perception). By gathering both perspectives, teachers can compare results and gauge the quality of class atmosphere and how well they are communicating with students. Teachers are also asked to describe their ideal behaviour through the instrument (ideal perception), thereby providing them with a professional development roadmap for change.

Because many teachers get nervous from the idea that they are being assessed, and in order to have the assessment obtain the proper success, a number of conditions have to be met. First, it is advised that the school management participates in a similar procedure, even before teachers are being assessed. This can be done by using the Questionnaire on Principal Interaction (QPI) to assess their own interpersonal management style through gathering teacher perceptions and self (management) perceptions. By following such a procedure, they set an example for teachers, and they experience the difficulties and conditions that are needed for such evaluation activities. Second, large scale assessment of the teachers on a school or university requires that an open and safe atmosphere exists, in which teachers feel their information will not be abused or (immediately) lead to serious consequences. Third, teachers should subscribe to the goals of assessment. If not, chances are that while data on quality of teaching is being gathered, this does not lead to improvement. Fourth, a careful procedure is needed for gathering the data, in such a way that anonymity of teachers and students is guaranteed and social desirable answering is being prevented. Finally, schools should have the means available for such assessment procedures, such as storage and processing of data but also analysis capacity, and disturbance of the educational process should be kept to a minimum. With respect to this last issue, completion of the QTI takes students about 20 to 30 minutes.

One may ask why students should be used as a source when assessing teachers, or, in a similar vein, why teachers should be used to assess school management. Why not only ask the teachers (or school managers) directly? Using students as a source of information has several advantages. Usually, students have visited and observed many lessons of their teachers, as well as those of other teachers. As such, they have more experience in observing the teacher than external (expert) observers, for example. Consequently, their observations are usually very stable. Then, when one uses mean student perceptions (e.g. aggregations of the opinions of all the students in a class) judgements are composite, meaning that not one but many assessors are being used. Using such composite judgements has the advantage that the influence of personal beliefs and characteristics, such as personality of the observer, remains
limited. Composite judgements of students also display high validity and reliability. Third, research has shown that students’ perceptions are usually closer to those of external (expert) observers than those of teachers. Apparently, teachers incorporate their own ideas on what constitutes good teaching and what is expected from them in their perceptions, while such expectations and beliefs have less influence on students’ perceptions. A fourth reason for using student perceptions is that not the actual behaviour of teachers affects what students learn and how they achieve, but the perception students have of this behaviour (den Brok, 2001). In other words, students react upon what they observe and interpret from their teachers’ behaviour. Last, by using students (or teachers in the case of school managers) it is acknowledged that the consumers of our education, the students, are taken seriously and regarded as important. In this way, all participants in the educational system are made responsible for its quality.

5 QUALITY IMPROVEMENT

After completion of the instrument, teachers receive a personal report on their outcomes. In that report, scale (sector) scores of themselves, their students and their ideal are reported, both in a numerical (statistical) and graphical way. Additionally, graphical information is provided on the average teacher communication style according to a large sample of teachers and students. Apart from sector (scale) scores, teachers obtain information with respect to mean ratings for each of the separate items of the instrument. An example of a small piece of such information is presented in Table 3.

Table 3. Example of an excerpt of a teacher report (the piece contains part of the information of the DC or Leadership scale(sector).

<table>
<thead>
<tr>
<th>Scale: DC Leadership (7 items)</th>
<th>Your Class</th>
<th>Yourself</th>
<th>Your Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. S/He talks enthusiastically about her/his subject.</td>
<td>3.6</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>31. S/He explains things clearly.</td>
<td>3.1</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>36. We learn a lot from her/him.</td>
<td>2.8</td>
<td>4.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

From the example provided above (Table 3), it can be seen that the particular teacher perceives him/herself higher than the students on the items ‘s/he explains things clearly’ and ‘we can learn a lot from him/her’. For the item ‘we can learn a lot from her/him’ there is also a distance between the self perception of the
teacher and his or her ideal. For this teacher, it would be interesting to find out why these differences in perceptions occurred.

How, then, can teachers or schools proceed after they have received their outcomes? Most importantly, teachers should reflect on their outcomes, especially on differences between their ideal, their own perception and their students’ perceptions. Without reflection, chances are that teachers will not change their behaviour, nor gain deeper insight into their own personal communication style with students. This reflection can be organized individually, by looking at the report and its accompanying elaboration on how to interpret results, but also with colleagues in smaller or larger teams. Such reflection can take the form of a small discussion or a more elaborate trajectory involving (peer) coaching or (clinical) supervision.

Other activities may involve comparing personal outcomes with those of other, equivalent teachers, comparing the outcomes of different classes, for example the class the teacher regards as the best and the one he or she regards as the worst. The outcomes and successes of the best class may then be used and implemented in the worst class. Teachers can also compare their own outcomes with those of teachers that are in a different stage of development or have more (or less) experience in teaching. They can compare them with their own data gathered during an earlier time (if available). Then, they can start a discussion with their students on interesting outcomes, such as large differences between their own perception and those of the students. Such a discussion may help them in getting a more accurate idea on how they are perceived by students. This is important, as research shows that effective teachers hardly differ in perception from their students. Finally, teachers can link their outcomes to other sources of information, such as observations (from video), personal logs or lesson material, and collect all of this information in a portfolio. Whatever action is chosen, for improvement it is very important that teachers move beyond just gathering information.

6 APPLICATIONS OF THE INSTRUMENT

At this moment, the instrument is being used in several ways. One of its most important applications is its functioning as a research instrument. During the past 20 years, well over 50 studies have been conducted with the instrument and more than 100 contributions have been published in journals, books or dissertations. As a result, there is a huge database, containing information on the quality of the instrument, on communication styles of teachers and on its relationship to a wide variety of variables, such as to outcomes of education, but also to teacher and student characteristics.

A very important spin off of the research is the fact that information is available on what constitutes ‘quality teaching’. Figure 3 contains a graphical profile on the ‘ideal’ teacher, based on the data of many thousands of students and teachers. In Figure 3 the shaded part indicates the score on that particular sector (scale) as a ratio of the highest possible score. Thus, the larger the shaded part of the sector, the more behaviour in that sector is expected. According to teachers and students,
the best teachers are strong classroom leaders, who are friendlier and more understanding and less uncertain, dissatisfied, and critical than most teachers. The best teachers also allow students more freedom than the norm. In general, good teachers are both highly dominant and highly cooperative.

Of course, quality teaching can also be derived from linking communication styles to student outcomes such as test results or motivation instruments. Research has shown that teachers with high achieving and very motivated students teach in a way that is very consistent with the ‘ideal’ teacher profile. Thus, higher ratings on dominance and cooperation are associated with higher achievement and motivation (den Brok, 2001; Brekelmans, 1989). Small differences exist between what is good for motivation and what is good for high test performance. It seems high test performance is stronger linked to teacher dominance, while high motivation of students is stronger linked to teacher cooperation.

Research has also connected interpersonal communication styles to other variables. It seems that girls perceive their teachers more dominant and cooperative than boys, that experienced teachers are more dominant and a little bit less cooperative than beginning teachers, that people from different ethnic backgrounds perceive teachers differently and that small differences between school subjects exist.

Apart from research, the instrument is also used by schools as a means to support and enhance their policy with respect to personnel (e.g. hiring or firing teachers). In this respect, it is always advised to schools that information of the questionnaire should not be used as the only source to take actions with juridical consequences.
The instrument only provides information with respect to communication skills, which make up a small area of the skills teachers should possess. Furthermore, questionnaire data only provide superficial insight into processes in the classroom, and more information can and should be obtained by means of observation, interviews or other materials.

Third, the instrument is being used in teacher education, both as a means of reflection (as part of a larger portfolio) as well as to provide students with a theoretical starting point behind their teaching. Fourth, the instrument is being used to evaluate the effects of projects aimed at the improvement of teaching. In such instances, teachers and their students are usually asked before and after a project to complete the instrument, and the effects of measures taken for improvement are then derived from the differences in ratings between the two measurements. Finally, the instrument is being used as part of a larger, integral system of (internal) quality assurance. If this is the case, schools use it to obtain information with respect to one or some of their quality indicators.

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