Observational stress analysis at school: Classroom teaching as an example of interaction work

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Abstract

This article shows that action theory can be successfully applied to the analysis of interaction work. There are both theoretical and methodological arguments for analysing work stressors using instruments based on action theory. For example, data of self-reports on perceived stressors cannot provide insights into the causal effects of work conditions and stressors on psychological strain. Therefore, adequate methods for analysing work-related stressors are necessary. Especially for service work, there is a need for the construction of job analysis instruments that explicitly define the requirements and stresses of interaction work without relying on self-reports or other subjective data alone. Action theory provides an approach for developing such instruments (RHIA-instruments – instruments to identify regulation barriers) that can be applied to interaction work.

The approach of the RHIA-instruments was tested and applied to teaching *(RHIA-Unterricht)*. The instrument allows regulation barriers and capacity-overtaxing factors in classroom teaching to be analysed. It can be used for process analysis of stress during teaching, for statistical analysis of correlations between work stress and other working conditions, such as class size or teaching methods, and for the analysis of single lessons, for example, in school development processes. Reliability and validity of *RHIA-Unterricht* is comparable with existing RHIA-instruments.

Keywords:
action theory – interaction work – teachers – occupational stress – working conditions – job analysis – observation methods

1 Teacher stress and strain: Methodological issues

Teacher stress has been researched a lot. A number of studies have been conducted, particularly, to unravel the emotional consequences of teacher stress, such as burnout (Bauer, Stamm et al., 2006; Friedman, 2000; Krause & Dorsemagen, 2007; Montgomery & Rupp, 2005; Rudow, 1999). There is now widespread agreement in research that a teacher's work is psychologically stressful.

However, there is a lack of knowledge when it comes to understand the *sources* of stress. Why do so many teachers suffer from burnout whereas others do not? Is it the teacher personality or are external factors responsible for stress? Although several studies suggest a variety of factors (e.g., personal factors such as self-efficacy) they usually fail to provide empirical evidence for their impact on explaining the causes of stress (Vandenberghe & Huberman, 1999).

This lack of evidence is due to two problems related to each other (Guglielmi & Tatrow, 1998). First, research on teacher stress and strain is usually not embedded in a theoretical framework to understand the sources of stress and strain. Second, the research mainly relies on questionnaire data. As a consequence, the information collected refers exclusively to the subjective perception of the interviewed teachers so that only their reports on their personal experiences can be gained, influenced by their subjective explanation of the events. Lens and Neves de Jesus (1999), for example, have argued that teacher stress is very likely a „result from the interaction between individual and situational variables" (p.195), and subjective measures of stress tend to be biased by the person's causal attribution, for instance.

To give an example: What does a researcher learn when he asks a teacher in a study: „How stressed do you feel by big classes?" He will learn about the teacher's subjective evaluation of the stress caused by a big class. An evaluation which is most probably influenced

by his felt strain. Therefore, by studying stress and strain using one and the same method, results run the risk of being tautological and end up in trivial correlations (Frese & Zapf, 1988). Hence, questionnaire data cannot fully explain how working conditions are connected with work stress and burnout.

What is missing are methods relying on objective data. What does *objective* mean?

Objective methods, for example, sound level measurement, would study stress *independently from subjective judgements.* With the aid of such methods, information can be gained to analyse sources of teachers' stress *independently* from their subjective impression. In this way, the use of objective data on stress, combined with subjective data on strain and adequate study designs, can help to provide valuable insights into the *causal associations* between stress and strain.

In their research agenda, Maslach and Leitner (1999) mark several shortcomings of the extant research on teacher stress and propose starting points for further studying teacher stress and strain. They postulate

(a) a strong focus on teacher-pupil-interaction as an important part of teachers' work, which is supposed to influence stress,
(b) the use of different sources of data, especially external observation,
(c) the use of qualitative methods (which could again be observation) to get a better understanding of what happens in observational ones classes.

External observation, as a method of collecting data at the workplace, has several advantages (see also Greiner, Krause et al., 1998; Leitner & Resch, 2005; Montgomery & Rupp, 2005). First, data are less confounded with a working person's individual characteristics or attitudes. Second, through observations additional information is gathered that the working person would not be able to provide. Third, a combination of objective and subjective measures allow more finely-grained analyses than only one single measure would do.

Taken together, using qualitative and quantitative methods in combination with objective and subjective data seems to be promising in better understanding the psychological effects of stress and strain. At the same time, a more methodologically sound way in studying stress could also improve the development of theoretical models and help to reveal the aspects most relevant in explaining stress and strain (Guglielmi & Tatrow, 1998).

In the following, we present our suggestions both for theoretical and methodological starting points to develop a precise understanding of the mechanisms underlying teacher stress and strain. We will describe the RHIA-instruments, which are based on action theory, and identify work-related stress during work process. Finally, we show that applying action theory to interaction work like teaching is possible and we introduce the instrument *RHIA-Unterricht*.

2 Theoretical and methodological framework

2.1 Action Theory

According to the *stress-strain-concept* (Rohmert, 1984) which influenced ISO 10075 (1991), mental stress is „the total of all assessable influences impinging upon a human being from external sources and affecting it mentally" (p. 1). Mental strain is „the immediate effect of mental stress within the individual (not the long-term effect) depending on his/her individual habitual and actual preconditions, including individual coping strategies" (p. 1). The association between stress and strain is not linear in the sense that the same stressful external influence may evoke different sorts of strain reactions within the working person or a certain strain reaction may have been evoked by different sorts of stressful working conditions. Near-term strain reactions may lead to long-term strain reactions. Individual characteristics are seen as protective or aggravating factors.

The concept underlines the necessity of differentiating between stress as the influencing and strain as the resulting factor. However, it provides no theoretical assumptions with respect to the repertory of potential stressors. Therefore, we need a concept of human action at work as it has been developed by action theory (Oesterreich & Volpert, 1986; Hacker, 2005).

Action theory describes work from a psychological perspective as accomplished by goal-oriented action. In terms of action theory, work is psychologically regulated by the worker and therefore needs a conscious goal. The work goal is reached by means of a planning, execution and feedback cycle. The structure of action is determined by the possibilities of mental regulation processes, that is, cognitions (Frese & Zapf, 1994).

In this sense, the crucial link between stress and strain lies in the *process* of mental action regulation (see Figure 1). If we conceive work as a process of goal-oriented human action, work tasks will imply *demands* on the worker. These demands must be mentally regulated in the process of fulfilling the task. Within this process, stress will arise when the worker is confronted with *working conditions* that overburden human regulation ability or when *no resources* for effective coping within the work organisation exist. If we measure psychological processes in this way, we will

gain information about average or typical but not individual psychological processes (Frese & Zapf, 1988).

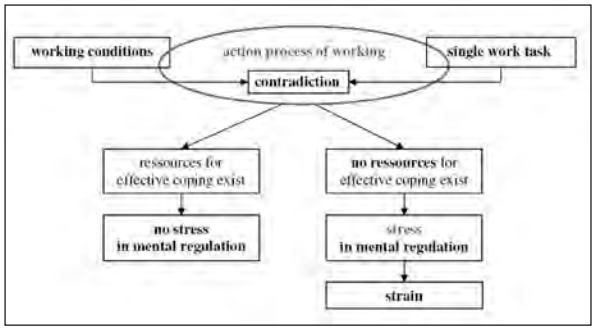

Figure 1: Action-theoretical concept of stress

In the work process, stress is mainly created by *regulation hindrances* that arise when the goal-oriented process of working is obstructed, that is, when goals and conditions conflict with each other and require extra work from the worker. In other words, stress factors are defined as those characteristics of the work task that hinder the regulation of mental processes because of poor technical or organisational design. Strain can then be a consequence of regulation hindrances. Stress emerges out of working conditions and in the process of working. Analysis of task-related stress according to action theory can be accomplished with the *RHIA-instruments* and can open the view to design work independently from individual coping abilities. The RHIA-instruments will be described in the following.

2.2 The RHIA-Instruments

Defining work on the basis of action theory, researchers have developed particular job analysis instruments that identify and quantify task-related mental stress. The RHIA-instrument – an instrument to identify regulation barriers – already exists for analysing industrial work (Oesterreich, Leitner & Resch, 2000), office work (Leitner, Lüders et al., 1993; which was translated from the German by Birgit Greiner for the use in the Whitehall II study), and, particularly, work of bus drivers (Greiner, Ragland et al., 1997). The abbreviation „RHIA“ stands for „*R*egulations*hi*ndernisse in der *A*rbeitstätigkeit“ (English: regulation barriers at work).

The starting point for all job analyses with RHIA-instruments is the *task of the worker*. When work shall be done, the organisation defines at first what the worker should do: the task. This task cannot be carried out independently. It must be achieved with regard to organisational conditions. However, all workers with the same task carry out their job in a similar action process. So the task defines the goal of the work and which kind of mental regulation is required for reaching the work goal.

The concept of the *unhindered path* of work actions describes how mental regulation can be disturbed. In Figure 2, the five boxes A, B, C, D, and E describe steps in the action process or activities of the worker during working. The black box between C and D stands for any kind of obstacle that disturbs the action process. The unhindered path is not necessarily an easy one. It can surely demand complicated considerations and decisions, which is resembled by the zigzag course of this path (Oesterreich, Leitner & Resch, 2000).

Figure 2 also shows some examples of workers' reactions to disturbance: Repeating certain steps in action process occurs when the computer has a breakdown, for instance, and one has to create all documents again that have not been saved before. An example for additional steps in the action process is when a secretary is copying documents until the copier produces a jam, and she has first to remove the jam before going on with copying. Risky behaviour is performed by the worker when too many impulses are occurring in the work process and the worker is forgetting about checking important information, for example, certain inspection values, before continuing work.

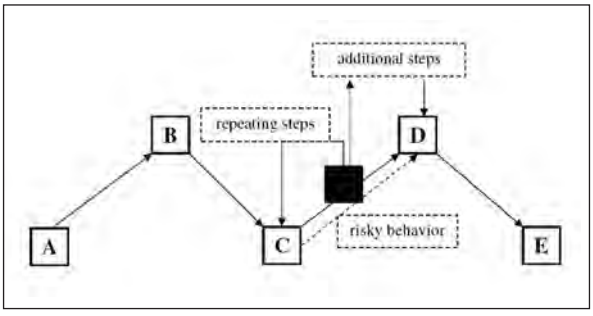

Figure 2: Barriers in the unhindered path of work action (modified from Oesterreich, Leitner & Resch, 2000)

Besides these examples, the concept of the unhindered path of work actions defines all possible reactions of the worker when barriers occur:

1. The worker has to repeat the whole working process from the beginning.
2. The worker has to repeat certain steps in the action process, but not the whole process.
3. The worker has to make a detour to reach the goal of work and therefore insert new additional steps in the action process.
4. The worker has to put more effort into the work to reach the goal.
5. The worker cannot act in an appropriate manner on the regulation obstacle. He reacts with risky behaviour, e.g. forgetting about important checking procedures or risking other kinds of damage.

All these reactions result in extra work, which is the central stress variable of the RHIA-instruments. Stress is caused *in the psychological regulation* of action, whereas the duration of the additional or intensified effort, which is caused by the barriers, measures the task-related stress.

Based on these assumptions, all RHIA-instruments consider stressors as disturbances in the general mental regulation process of work. Important are all events which hinder the worker to reach their goals when no resources can be used for coping with these barriers. There are two main stressors:

a) *Regulation barriers*: They are directly related to the task and require extra work to reach the work goal. *Extra work* consists of all actions by the workers which they have to perform to come back to their original goal-oriented path of work.

b) *Capacity-overtaxing factors*: These are stressors that influence the worker in the long term, for example, noise, time pressure, or role ambiguity.

2.3 Selection of adequate methods for research of causal effects

Besides the action theory and the approach of the RHIA-instruments to measure work-related stress, the question arises which general theoretical framework of teacher stress research would be adequate and useful and what methodological starting point it would suggest.

Oesterreich (2008) introduces a model bringing together theoretical assumptions and equivalent methods (see Figure 3). In accordance with action theory, his model includes four steps.

First, we have factors that influence a worker's action: working conditions, personal factors, colleagues, and users. Depending on the factors a study focuses on, different methods would be appropriate. Focussing on external factors, evaluations of external experts supply the relevant information. Whereas interviews with the worker provide information which is influenced by subjective impressions, external evaluation helps to generate more objective information. On the other hand, interviews are the method to be chosen if the researcher wishes to investigate personal, colleague-, or user-related influence on the process of working.

Second, we have stress arising within the process of working. To study this aspect, observation or observational interviews would be adequate methods. We have already discussed that methods like the RHIA-instruments disentangle stress (arising in the process of working) from strain (due to the worker's evaluation of his work situation).

Strain would be the third and fourth aspect to be studied: To examine short-term strain and emotional reactions, self-reports are indicated. For the research

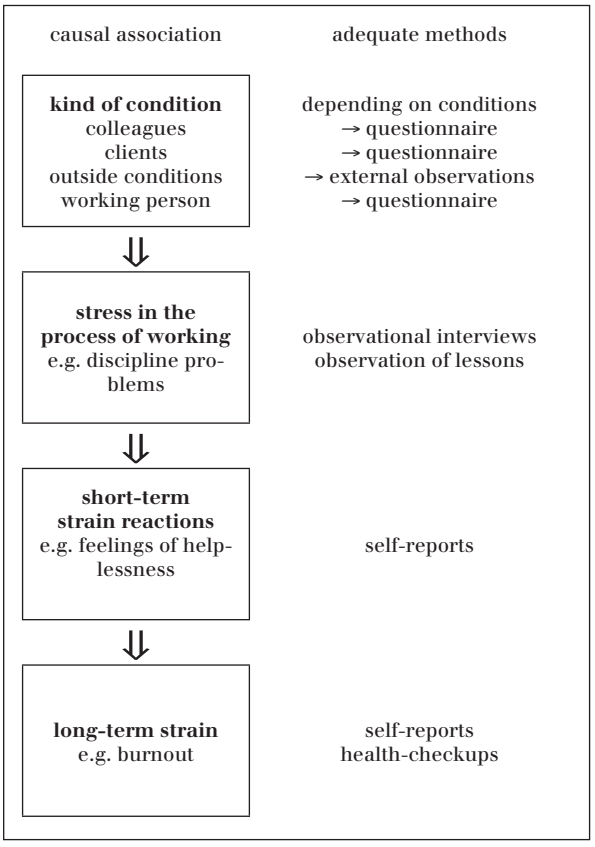

Figure 3: Proposed causal association of teacher stress and strain constructs (see Oesterreich, 2008)

of possible long-term consequences of stress and strain, health check-ups and again self-reports would be in favour.

As the model indicates, the adequate method depends on the aspect to be studied: Whereas researching the subjective side of stress and strain requires subjective methods, gaining knowledge on the external influencing factors makes it necessary to evaluate the situation more objectively, which means: from one or many „outsiders" such as external observers. By choosing methods in this manner, we can avoid trivial correlations caused by methodological artefacts.

The study of Leitner and Resch (2005) is a good example of investigating these associations and showing the advantage of job analysis instruments to gain knowledge about causal mechanisms. Leitner and Resch (2005) studied the short- and long-term effects of work-related stress – analysed with the RHIA-instrument for office work – on strain. In their crossed-lagged partial correlation study, they compared data of work stressors (second wave after one year) with eight health indicators (two follow ups after 2 and 8 years) of office workers (n = 222). The results were quite striking: First, the comparison of the two possible causal pathways showed that „the direct effects of the stress factors on … six health indicators… are

therefore significantly larger than the correlations that indicate the reverse effect“ (Leitner & Resch, 2005, p. 23). Second, five of seven health indicators showed stable and significant partial correlations for the two follow-up-measures. These findings imply that the work stressors determine the health condition more likely than the other way around.

Of course, the question of objectivity of observation data is in some way controversial (for more details, see, e.g., Frese & Zapf, 1988; Faßnacht, 2006).

2.4 Conclusion

We discussed some methodological and theoretical reasons:

1. By using self-reports, we will discover more of what we already know. Teachers are stressed and we do not know which variables are more important than others, for example, certain personal traits or certain work conditions. Even so, action theory makes work-related stress analysable independently from subjective self-report data.
2. For industrial and office work, effects of work-related stressors on strain were successfully analysed by using methods based on action theory, that is, the RHIA-instruments.
3. Hence, there is a need to develop job analysis instruments for work, such as teaching, which can produce new knowledge about stressors in the work process.

We show in the following that the application of the job analysis instruments based on action theory to so called *interaction work* is possible and necessary. As we have already seen in Figure 3, Oesterreich (2008, with reference to Oesterreich & Resch, 2003) stresses that the influence of colleagues and/or users on the process of working must be, additionally, taken into account, with regard to professions which are characterised by a high amount of interaction with other people. Whereas action theory was originally developed for the field of industrial work, we today need a theoretical framework which is applicable for the third sector (service work) as well. This work sector mainly consists of being in interaction with other people. That means colleagues and users in many professions are important parts of working conditions and of the working process. Teaching is one such profession of interaction work.

3 Theoretical and methodological consequences

3.1 Interaction Work

Like many professions in fields of social work (e.g., health care), teaching is mainly shaped by interactions with other human beings. Büssing and Glaser (2001) have introduced the concept of *interaction work* for nursing and similar professions, which tries to describe the characteristics of service work. Interaction work is accomplished by and in contact with other human beings. The product of work is not a material one but produced throughout interaction (see also Resch, 1999). The work goal includes therefore a cognitive and/or emotional transformation of the customer. For example, the customer should be better informed about a certain problem (counselling), should be cured from a mental sickness (psychotherapy), or should have learnt new mathematic procedures (teaching mathematics).

The approach of Büssing and Glaser (2001) applies the concepts of action theory to service work. Hacker (2006) points out that interaction work is as goal-oriented as work in offices or in manufacturing. Even though it contains emotion work and higher adjustment of goals in accordance to the interaction between customer and service worker, interaction work should not be reduced to being intuitive and more or less improvised.

Teaching can, in general, be characterised as *dialogical work* which requires complex processes of communication and cooperation (Glaser, 2005) between the teacher and the students. Teachers not only have to prepare the contents of their lessons (mathematical procedures or terms), but also have to provide the conditions that enhance the cooperative process between the class and themselves.

There is no clear differentiation between „dialogical work“ and „interaction work“ until now. The concept of dialogical work was introduced by Hacker (1986) and developed further by Resch (1999) for the analysis of house work and non-profit work. In contrast, interaction work was newly discussed and established by Büssing and Glaser (2001) referring in great parts to the research on emotion work (e.g., Zapf, 2002). Both terms mainly describe the job requirements of communication during work in general, whereas it is still controversial how much interaction work has to contain to be called „interaction work“. As Hacker (2005, p. 125) points out, an essential aspect for interaction work lies in the goal of working which is reached *during* interaction and is therefore not a material product. For example, the development of a new concept of Adaptive Cruise Control for vehicles requires a lot of interdisciplinary communication between the different workers, such as developers and

testers. However, the product is material, that is, a new or better technology. The work of a teacher has also distinct parts of work which is not dialogical, like the preparation of the lesson or different kinds of administration work. These are different work tasks. With reference to teaching as a task, the goal of the teacher is that students learn, which can be tested but not to be set in stone. The product of teaching is created during interaction between students and the teacher.

Job requirements of teaching have not been analysed and defined in detail yet (see an interesting approach given by Bromme & Haag, 2004). Research on teacher stress is until now mainly based on self-reports and not on observations of teacher-student-interactions in the classroom. However, there is a first approach to conduct the action theory based RHIA-instruments on interaction work. In the following, we therefore describe the application of job analysis instrument RHIA to the work of teaching.

3.2 RHIA-Unterricht: observational stress analysis at school

The RHIA-instrument was developed for the analysis of teaching by Krause (2002, 2004) and is called *RHIA-Unterricht* (Krause, Meder & Dorsemagen, 2007).

Theoretical Background

The RHIA-instrument for teaching describes the task of the teacher as the provision of learning situations during the lessons. The teacher can only initiate learning; the learning itself must be done by the students. The teacher has to try to create an optimal environment by means of interaction with the class. He or she prepares certain tasks, explains and answers questions, prevents discipline problems or intervenes when they occur, and tries to keep the students involved in the topic.

Yet, the cooperative process between the students and the teacher can be disturbed. This happens when the students' remarks are not related to the lesson objectives that the teacher tries to reach by undertaking certain teaching units. For instance, when students talk to each other about leisure time or when a student is looking out of the window and not following the class. These students cannot benefit from the learning environment during this time which would be necessary to reach the teaching goal. The teacher can only make sure that the students are able to reach the learning goals by advising them to follow the lesson.

Because of the work characteristics of school lessons, the original stress factor concept had to be extended. Work barriers are to be characterised predominantly as *disturbances of the cooperative process* (between the teacher and the pupils).

From a pedagogical perspective, one can ask why a student remark could be seen as a barrier at all. If teachers manage to prevent discipline problems by means of a good and effective classroom management, they face fewer barriers during teaching and therefore fewer stressors. The conclusion might be that a good teacher can pick up all remarks of students and try to integrate them in the given time of a lesson. However, action theory does not only ask what the teachers *should* fulfil as their task but also if the current work conditions are in accordance with these tasks. Relating to the usual school organisation with lessons of 45 minutes in classes with more than 25 pupils and a strict curriculum per year, there is in most cases no time to respond to each remark of the students in a pedagogical manner.

Table 1: Systematic of RHIA-Unterricht

Periods of the lesson	Regulation Hindrances (psychological stressors)	
	Regulation Barriers	**Capacity-Overtaxing Factors**
• Teaching in the subject • Pedagogical content • Creating learning (pre)conditions • Administration • Assessment ⇓ Course of the lesson	• Diverging goals • Lack of students skills • Contradictory goals • External obstacle ⇓ Stressors with direct influence on the goal tracking during teaching	• Noise • Few possibilities to avert ⇓ Overstraining conditions in the long run

Taxonomy/Systematic

As you can see in Table 1, observers have three different tasks to perform: They analyse the periods of the lesson, regulation barriers and capacity-overtaxing factors.

The analysis of teachers' stress in the classroom is carried out via videos. Two perspectives are videotaped during the lesson, one focussing the teacher, the other focussing the class. Both perspectives are combined. Afterwards, observers can analyse the three different categories – periods of lesson, regulation barriers and capacity-overtaxing factors – in three sessions. Figure 4 shows that observers code the dimensions of RHIA-Unterricht with special software while watching the video of the lesson on the computer. This procedure has numerous advantages: First, the videos can be analysed more than once and independently by more than one observer. Second, more than one perspective can be watched and analysed. The behaviour of the teacher as well as the behaviour of the students can be documented and compared with each other. Finally, the videos can be used for interventions and trainings with the teachers later on.

Figure 4: Video-Analysis with the instrument RHIA-Unterricht (screenshot)

First, observers analyse the *periods of the lesson*. This can show the chronology of the teachers' work during the course of the lesson. The main part is the *teaching in the subject*, when most of the class is engaged in the subject. Some time periods can be dedicated to pedagogical and educative goals, when the main part of the class is engaged in *pedagogical content* (e.g., they talk about the social atmosphere in the class). Mainly at the beginning and at the end of the lesson, the teachers have to *create learning (pre)conditions*, for example, organising groups of students for group-work or distributing handouts. To some extent, teachers have to clarify *administration* problems (especially when they are form teacher and responsible for the class) or to let the students write a test and give marks (*assessment*).

After coding the periods of the lesson, the observers analyse the psychological stress variables. Like the other RHIA-instruments, *RHIA-Unterricht* surveys the two main stressors *regulation barriers* and *capacity-overtaxing factors*.

The second task therefore is the coding of *regulation barriers*. The observers analyse all striking events during a lesson which lead the teachers to extra work. The teachers have to follow certain detours when students are making remarks or performing actions which have no connection to the lesson goal or are actively disturbing classmates or the teacher in dealing with the lesson subject. The time periods (duration) of these detours are defined as *additional effort*, which measures the extra work occurred.

The number of these barriers and their duration indicate the extent of psychological stress for the teacher in this particular lesson. There are four different categories of barriers:

1. *Diverging goals*: During the teaching students pursue other goals, for example, they talk about leisure activities, write private letter, play games or are not attentive to the lesson. These events can involve one or several students.
2. *Lack of students' skills*: A student cannot follow the lesson and participate actively because of lacking language skills or knowledge. In some cases, a student shows a behaviour disorder (e.g., hyperkinetic disorders, social behaviour disorders).
3. *Contradictory Goals:* When students' behaviour indicates greater pedagogical problems for the teachers, so that they have to decide whether to continue with the lesson as planned or to pursue new important goals. A typical example is when two students are having an argument or starting a fight. After the teacher has calmed the two students down, he/she might want to talk with the students about the social atmosphere in their class and how the students should deal with conflicts between them.
4. *External barriers:* Sometimes, it happens that teaching is interrupted by events which are not caused by students of the class, for example, when another teacher, a secretary or a student from another class enters the classroom with a certain request to the teacher. Technical equipment that does not work can also cause barriers of that kind.

The third task of the observers is analysing the *capacity-overtaxing factors*. In classrooms, one important stressor is *noise*. *RHIA-Unterricht* distinguishes between useful sound which is related to the lesson subject (e.g., the teacher is explaining or asking something and a student is answering) and disturbing kind of noise that is of no use for the teaching process. The category of silence/working atmosphere is coded when no noise or just useful sound occurs. In the other cases, there are two categories of disturbing noise caused by students (background noise/loud noise) and one for noise caused from outside the classroom (non-student noise), for example, noise from the next street or from other students outside the classroom.

Another overtaxing regulation is the absence of *possibilities to avert*. This category refers to the necessity to have every now and then a break during work. When the teacher has to keep his attention risen all the time, the ability to concentrate will be reduced and therefore, the quality of reaction, too. The stress by capacity-overtaxing factors can escalate through accumulation during the teaching day.

Psychometric Properties of RHIA-Unterricht

Based upon a pilot study with 46 lessons, *validity* was tested by Krause (2002) for two criteria. First, teachers answered a questionnaire about perceived stressors in confrontation with their own lesson-videotapes (n = 26). Although the sample was quite small, correlations between the perceived stress during the particular lesson and the number of regulation barriers (r = .51, p < .01), the duration of loud noise (r = .34, p < .05), and the duration of all disturbing noise (r = .52, p < .01) were significant. Other variables showed at least the expected direction (positive correlation). This supports the validity referring to similar variables.

Furthermore, teachers filled out a mood state questionnaire developed by Nitsch (1976) called „Eigenzustands-Skala“ before and after their lesson was videotaped (n = 20). The pre-post-differences where correlated with the variables of *RHIA-Unterricht* for each lesson. All correlations showed the predicted direction, but because of the small sample size significant correlations could not be expected so far. Significant associations were found between the items of exhaustion/fatigue („Defizienz“), though, and the number of regulations barriers (r = .51, p < .05) as well as the duration of loud noise (r = .51, p < .05). This supports the validity referring to plausible effects.

Taken into account that observational data and self-report data usually correlate in a low to medium manner, these results indicate a quite good validity of *RHIA-Unterricht*.

The *reliability* was tested by interrater-agreement of two raters for the different variables (n = 46). For instance, the intraclass-correlation for the number of the regulation barriers per lesson was r = .89 (p < .001), whereas in 70% of the cases the observers referred to identical regulation barriers. The interclass-correlation for the duration of the regulations obstacles per lesson was r = .69 (p <.001) (for more details, see also Krause, 2004). The reliability is therefore comparable with other RHIA-instruments.

4 Conclusions and Outlook

The instrument *RHIA-Unterricht* is an application of action theory to the teaching profession and its tasks. It provides an understanding of task-related stressors during teaching in classrooms that are independent from the individual teaching style or stress coping strategies. It is suitable to analyse quite validly and reliably regulation barriers within the cooperative process between teachers and their class as well as capacity-overtaxing factors like noise.

The results of an analysis using *RHIA-Unterricht* showed disturbances in the work process during a lesson. It is now possible to design studies which correlate certain working conditions like class size and applied teaching methods with the amount of work-related stress variables. Detailed analysis of phases during the lesson, in which work-related stress accumulates, is also possible and can be connected with ratings of quality of instruction measures (e.g., classroom management). To give an example: Kruse, Krause, and Uffelmann (2006) examined whether different teaching methods were associated with different stress levels. Contrary to widely held beliefs, the stress level during student-centered lecturing had a higher level than during teacher-centered lecturing („talk and chalk“ teaching). Detailed process analysis proved that most barriers had occurred during transitional periods, for example, when pupils had to start or end working together in groups.

RHIA-Unterricht can be used for scientific research (about many lessons) but also for individual analysis (for single lessons), for example, in lesson/school development processes. It provides a good starting point for job analysis of teachers, especially on a process level.

Surely, there is still research to be done in this field, particularly analysing the job requirements of a teacher in detail – also with regard to the complexity of the teacher-student-interactions in the classroom.

Action-theoretical stress analysis can not only be transferred to teaching but also on the whole work of teachers that includes preparation of lessons, team work with the colleagues (Stegmann, 2008), or communication with parents and school administration.

Resch and Fenzl (2008) gave fundamental impulses in this direction by carrying out task analysis via interviews for the teacher work outside school. One could think of observational job analysis built on their results about the tasks of teachers outside of the classroom as well (see also Ulich, Trachsler, Wülser & Inversini, 2003). Furthermore, Schüpbach (2008) takes a perspective of the socio-technical system approach to describe primary and secondary tasks of teachers.

Objective, task-related measurements of work analysis can also be suitable in other fields of interaction work like health care, psychotherapy, or councelling. Observation methods such as RHIA-instruments show new useful possibilities for the psychological analysis of work-related stress in interaction work by and in contact with people.

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