Feedback as a Supporting System for Work Groups

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Abstract
As a reaction to the turbulence companies find themselves in today, group or team work has been introduced by a large number of companies. Human resource systems, however, mostly stay unchanged. They are still often individually orientated and thus are not adequately designed to act as supporting systems for work groups. This paper focuses on feedback and performance appraisal instruments and their potential in enhancing and improving the performance and co-operation of work groups. Empirical results from case studies in three different companies are presented which show the quantity and quality of feedback as well as the appropriateness of different appraisal systems in the context of self-regulating group work. As an alternative to common appraisal systems and as a possible solution for the improvement of feedback quantity and quality, a “group feedback system” is developed and analysed.

Keywords
Feedback, Work groups, Teamwork, Performance appraisal, Human resource management

1 SUPPORTING SYSTEMS FOR WORK GROUPS
Work groups or teams (in our understanding the two terms can be used interchangeably) are an important element of modern work organisation. Since the beginning of the 1990ies they are a common answer to the turbulence companies find themselves in. In today’s industry, self-regulating work groups are now widely spread. They consist of approximately 3 to 15 workers who work interdependently on a common task. The concept of self-regulation comprises the principles of job enlargement, job enrichment and job rotation and adds the aspects of constant co-operation and social interaction (Bungard and Antoni, 1995). The groups take responsibility and control of their own actions and performance (Saavedra and Kwun, 1993; Levy and Steelman, 1997).

How well a self-regulating group performs depends on both the quality of the group design and on the organisational context provided by the management (Hackman, 1987; Hofmann and Bungard, 1994; McIntyre and Salas, 1995). Self-regulation does not mean that regulation from outside the group becomes unnecessary. The organisational context has to be designed according to the principles of group work and self-regulation and must be able to support work groups. With the introduction of group work however, human resource systems as an essential element of this organisational context, mostly
stay unchanged. They are still designed for individuals and therefore are not able to support work groups adequately. Group orientated intervention methods and instruments have to be designed and analysed (Pritchard et al, 1988).

At Mannheim University an ongoing research project, which is financed by a national grant (Project D2 in the Special Research Field SFB 467 “Transformable Business Structures for Multiple Variant Series Production” of the German Research Society DFG), works on finding alternatives for the design of human resource systems according to the needs of industrial work groups. A model was developed that shows the criteria that human resource systems have to fulfil in order to evolve into „supporting systems“ for work groups (Hey et al, 1997). Figure 1 shows the human resource systems that are dealt with in „USG“ Research Project.

![Figure 1 Supporting systems for work groups](image)

This paper focuses on the supporting systems of performance appraisal and feedback. The question is how these systems can be designed to meet the needs of work groups.

2 FEEDBACK IN WORK GROUPS

Although there is no “feedback theory” in itself, feedback plays an important role in several psychological and other theoretical concepts. The term feedback comes from cybernetics, a discipline which looks at feedback loops as part of the regulation process in closed systems. The feedback loop model was later transferred to the social sciences and applied to organisations as open systems. Miller, Galanter and Pribram (1960) described human behaviour and especially human information processing through feedback loops with their TOTE sequences. In behaviourism feedback is essential for learning and works as an operant reinforcer. In goal-setting-theory people use feedback to evaluate their performance relative to their goals (Locke and Latham, 1990). Communication psychology developed rules for giving and receiving feedback, which are used in training programmes (Antons, 1992), and for organisational development the survey-feedback method is a constituent (Comelli, 1985; French and Bell, 1990).

In studies within an organisational context, feedback generally shows positive effects. There are a number of studies which claim performance improvements for individuals (Ilgen et al, 1979; Pearson, 1991). In regard to groups however, the number of studies is limited (Nadler, 1979; Pritchard et al, 1988). The lack of research on group feedback presents a major obstacle for those attempting to encourage the improvement of group work (Conlon and Barr, 1989). The success of self-regulating work groups relies on the persistence of certain behaviours, including periodic job exchange, participation in planning sessions, and group decision making. The willingness of group
members to actively engage in such co-operating behaviours depends, to a large extent, on the feedback they receive regarding the group process (Barr and Conlon, 1994). Group work consists of more than just performance. Co-operation and the development of the work group’s social dimension is at least as important as its performance (work-related dimension). Thus, feedback is a prerequisite not only for group performance but also for co-operation and for social learning processes within the group (Comelli, 1985; Blickensderfer et al, 1997). This is why groups should receive performance as well as interpersonal feedback. Both kinds of group feedback are shown in figure 2.

![Group feedback diagram](image)

**Figure 2** Group feedback

### 3 EFFECTIVENESS OF FEEDBACK

Although many studies show positive effects, feedback is not effective by itself. Its effectiveness depends on the following three dimensions (Ilgen et al, 1979):

- **the source of the feedback**
- **the recipient**
- **the message.**

In an organisational context, workers generally receive their feedback from two different sources, from their supervisor and from their colleagues. As to the recipients of feedback, we differentiate between the workers as individuals and the work group as a whole. Feedback sources and recipients will be further considered in section 7 in regards to performance appraisal.

The feedback message which will be considered here has to meet certain criteria in order to have the desired consequences. The following criteria were derived from communication psychology and goal-setting-theory. According to these theories, feedback has to be:

- **specific:** Feedback information is not given in a global manner but refers to different aspects of a task or a behaviour (Ilgen et al, 1979; Taylor et al, 1990). This means that feedback statements include facts and examples and help prevent misunderstandings.
- **direct:** Feedback is given directly to the person or group it is meant for. It is given in a two-way communication process and is not transmitted via third persons (Waung and Highhouse, 1997).
immediate: Feedback is more effective when it is given soon after a behaviour or performance occurs. It must show the contingency between a behaviour and its consequences (Ilgen et al., 1979).

regular: Feedback is not given on a single case basis, e.g. when a mistake has occurred. Employees receive feedback regularly and get used to receiving and giving feedback. Feedback is integrated into everyday work (Taylor et al., 1990).

positive and negative: Feedback contains praise and criticism, it does not focus solely on mistakes. (Ilgen et al., 1979; Pavett, 1983).

non-threatening: Feedback is given in a non-threatening, fair and respectful way. The recipient can accept the feedback message (Blickensderfer et al., 1997).

The literature describes much more than just these six criteria, but in one way or the other the ones listed here appear in most criteria listings pertaining to the feedback message. Therefore, we will use these criteria for our further analyses.

4 EMPIRICAL ANALYSES

In order to investigate the supporting systems from the perspective of the work groups and to find out about their demands, case studies were conducted in three different companies. After preliminary studies in all three companies, which included document analyses and comprehensive interviews with work groups, supervisors, middle managers and process consultants, a standardised questionnaire was developed and pre-tested in each company. Workers rated their supporting systems on Likert-type scales from 1 (lowest) to 5 (highest). Some items allowed workers to indicate their actual satisfaction, in others they were asked about the ideal level from their point of view. Table 1 gives the description of the sample.

<table>
<thead>
<tr>
<th>branch/ product</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>number of groups</td>
<td>8</td>
<td>8</td>
<td>27</td>
<td>43</td>
</tr>
<tr>
<td>workers in sample</td>
<td>73</td>
<td>235</td>
<td>79</td>
<td>387</td>
</tr>
</tbody>
</table>

| return rate    | 93%       | 82%       | 18%       | 48%   |

The questionnaire included numerous items about the quantity and quality of the feedback work groups receive. The results are presented in the following section. In general, there were no significant differences between the 3 companies, therefore most of the results in this paper are given for the whole sample (N=387).
5 FEEDBACK RESULTS

5.1 Quantity of feedback

The first part of the feedback items addressed the question of how much feedback the group received and how much individuals received. Figure 3 shows the results over all three companies (N=387).

Generally, the ideal level, meaning the wish for feedback, is significantly higher than the actual amount of feedback received. Except for the performance feedback groups receive, the actual levels, for every type of feedback, are below the average rating of three. This is particularly true for individual feedback. The group as a whole receives more feedback than the individual. One reason for this could be the fact that with the introduction of group work, output and productivity figures are not calculated for individuals anymore and are instead given for the whole group. Interpersonal feedback is given and demanded nearly as much as performance feedback. This shows the importance of both kinds of feedback from the empirical point of view. The conclusion out of this analysis is that, from the workers’ perspective, there is an enormous lack of performance and interpersonal feedback.
5.2 Quality of feedback

Although individual feedback is also relevant for the workers, the following questions focused on group feedback. In the context of self-regulating work groups, the group is more important as a feedback recipient, since feedback can be a major supporting system for the groups. As to the effectiveness of the received group feedback, workers were asked if they thought the feedback they were given led to improvements and if they thought it was effective and led to changes. Figure 4 shows the results for the three companies taken together (N=387).

![Figure 4](image)

**Figure 4**  Effectiveness of group feedback

All three ratings are below average, that is, workers feel that only a part of the feedback they receive leads to improvements. This is true for improvements in performance (work-related dimension) as well as improvements in co-operation (social dimension). This means that the groups not only do not get enough feedback but the feedback they do receive is not effective. Accordingly, workers give a low rating of the overall effectiveness of feedback.

In order to find out why some group feedback is effective and some is not, workers were asked to rate how much the feedback they received met the feedback criteria discussed in section 3. Figure 5 gives the results.

The results show that none of the feedback criteria are met satisfactorily. Although most of the time feedback is non-threatening, there are many cases where groups cannot accept the feedback they receive. One reason for this could be that positive and negative feedback is not balanced. From the interviews we know that the groups hardly receive any positive feedback. If they get any feedback at all, it covers mistakes they made. The other criteria are also not met. Feedback for the groups is not regular and it is not given
immediately after a certain performance or behaviour. The groups do not receive it directly nor is it specific enough, that the workers can draw conclusions from it. It is not surprising, when viewed from a worker’s point of view, that this feedback is only marginally effective.

![Figure 5 Feedback criteria](image)

The sum of these deficiencies leads us to the conclusion that work groups urgently need support through more and better feedback. It can be argued that supervisors and group members need to be trained in the exchange of feedback. One possible approach would be team development measures, which are already conducted in many firms. Supervisors and group members could practise giving and receiving feedback in special training programmes and learn about the importance of performance and interpersonal feedback in everyday work.

Training in feedback is certainly important, but on the other hand it seems necessary to develop human resource instruments that are able to foster the exchange of feedback and to not just have the exchange of feedback dependent on the willingness of the persons involved. Performance appraisal systems, that are used by most companies today, consider feedback to be one of their main goals. Therefore we will look at performance appraisal in the following section as a possible means for improving group feedback.

6 PERFORMANCE APPRAISAL
Performance appraisal systems can be classified by three dimensions. Similar to feedback, we can distinguish between the group and the individual as a recipient. Classically the feedback source is the supervisor. However the feedback source can also
consist of the group itself. It is very important to distinguish between the two main purposes of an appraisal.

A great number of companies use performance appraisals for selection purposes. In most of the cases workers are rated by their supervisor on a variety of work-related and/or social dimensions. The ratings are quantified and used for decisions about the individual’s future career and salary. But appraisals can also be used for development purposes. In this role they are meant to support leadership and co-operation and are used to discover strengths and weaknesses in working and interpersonal behaviour (Murphy and Cleveland, 1991).

The purpose of an appraisal influences its perception and acceptance by the ratees (Levy and Steelman, 1997) and it has a great influence on the rating itself (Bernardin and Beatty, 1984; Blickensderfer et al, 1997). This means that information collected for selection purposes is not equal to that collected for development purposes (Levy and Steelman, 1997). The two appraisal purposes imply different psychological processes. Raters who believe that their rating will be used for administrative decisions are more lenient than those who believe that their rating will help the ratee’s personal development (Murphy and Cleveland, 1991).

![Figure 6 Performance appraisal systems](image)

Both purposes, selection and development, are in conflict with each other. In an appraisal used to make promotion recommendations and salary decisions, the rater has to focus on comparisons between individuals, in contrast, appraisals for development
purposes require within-individuals comparisons. This conflict not only exists for the rater but also for the ratee, whose co-operation is very important for determining employee training and development needs. Despite these conflicts, a lot of companies pursue both goals at the same time with a single performance appraisal instrument.

This problem is also obvious when we look at common performance appraisal instruments. Figure 6 shows their classification using the three dimensions source, recipient, and purpose. Individual appraisals are widely used. The supervisor rates the employee and uses this to help determine the ratee’s salary. In contrast, some companies conduct individual appraisals which are not used for salary or career decisions. In order to make this distinction clear, we will call this kind of appraisal “individual feedback”.

Group work questions the exclusive use of individual appraisals. The group as a self-regulating entity which works highly independently, does not give the supervisor much opportunity to observe individuals. Group appraisals are less common, but with the implementation of group work and the importance of feedback for the group as a whole they have been introduced by a number of companies (Murphy and Cleveland, 1991; Saavedra and Kwun, 1993). An advantage is that the rating includes synergetic processes which take place inside the group. Group feedback for development purposes takes place in everyday work but is not as widely regarded as a goal for appraisal instruments.

Peer appraisals in which the group members rate each other have already been discussed in the context of self-regulating group work. Compared with group supervisors, colleagues have, quantitatively and qualitatively, more opportunities to observe the performance and behaviour of the individual worker than the group supervisor are therefore often considered the better raters (Bernardin and Beatty, 1984; McEvoy and Buller, 1987; Saavedra and Kwun, 1993; Latham and Wexley, 1994). A disadvantage is that friendship can bias peer evaluations and because of this peer appraisals are much less accepted. If the appraisals are connected to salary decisions, employees easily get into the situation of the prisoner’s dilemma game: The better they rate their colleague, the less credits they themselves receive. For development purposes peer appraisals or peer feedback can be a very useful instrument if the group’s social development and its members’ ability of giving and receiving feedback is already highly developed (Hofmann and Bungard, 1994).

A more basic instrument which will work with more or less developed groups is our “group feedback system” which will be discussed in section 8. First, we will take a look at the workers’ perceptions of their actual performance appraisal systems and at their attitudes towards alternatives.

7 PERFORMANCE APPRAISAL RESULTS
7.1 Actual performance appraisal instruments
Out of the three companies participating in our case studies, only two conducted performance appraisals. The appraisals, with the supervisors rating the workers individually, were both conducted annually. The rating criteria were similar, but the companies differed in the goals pursued with the appraisals. Company A used the appraisal for development purposes, Company B for determining an individual monetary bonus. Figure 7 shows the effectiveness and the workers’ satisfaction with their individual appraisals.
All three ratings are significantly higher in Company A, where the annual appraisal is conducted by the supervisor in order to give the worker feedback and in order to receive feedback from him or her. Workers feel that the performance improvements induced by the appraisals are satisfactory. The influence on individual behaviour is only moderate. This is probably due to the fact, that a significant amount of this behaviour takes place inside the group and is therefore beyond the supervisor’s ability to observe. Workers in Company A are satisfied with their appraisal system. In contrast, those in Company B, where the rating result is transferred into a monetary bonus, are not satisfied. From the interviews we know that supervisors are anxious to lower a worker’s rating because they fear conflicts with the workers’ council and with the individual worker. For good workers, they try to increase the rating gradually every year. However they have a fixed budget, so an “old” group member has to leave or retire before the rating of another member can be raised. The appraisal has lost its motivational and feedback effect and does not lead to much improvement in performance or behaviour.

Unfortunately, individual appraisal systems existed only in two of the three companies. In order to find out how workers view other appraisal instruments, we let them rate the alternatives.

### 7.2 Alternative appraisals

Workers were asked who the recipient of an appraisal should be, for what purpose an appraisal should be conducted and how large their influence on the appraisal instrument should be. Figure 8 contains the results.
Workers in all companies wanted individual appraisals. This is consistent with the result in section 5.1 that individual feedback is still important in work groups. The rating of an eventual group appraisal was only moderate. In all three companies the groups’ performance is evaluated by their output and other figures and perhaps the workers felt that this kind of evaluation is more objective than a rating by their supervisor. This could be due to the fact that most of them receive individual annual appraisals and consider these to be very subjective. Looking at the preferred appraisal purpose, we can draw the conclusion that appraisals are needed for development purposes. Apart from that group members want to have a strong influence on the appraisal instruments they are confronted with.

In order to meet the described demands of the work groups and to avoid problems other appraisal instruments pose, we developed a “group feedback system” which will be presented in the following section.

8 DEVELOPMENT OF A GROUP FEEDBACK SYSTEM

8.1 Description of the system

So far we have seen, that work groups need performance as well as interpersonal feedback. Unfortunately, there is a lack of feedback both in quantity and quality. Performance appraisal instruments can foster the exchange of feedback, but they have to be designed adequately to serve as supporting systems for the work groups. On the individual level feedback is given through individual appraisals which have shown themselves to be more effective when they are used for development purposes. We have also seen, that the supervisor is not the only person who is able to rate performance and behaviour. The workers themselves are a valuable source of appraisal.
On the group level adequate appraisal instruments have to be found. Therefore we developed a group feedback system. In this system the group is the recipient as well as the source of the appraisal, in effect, the group evaluates itself. Of course, this is done for development purposes due to the known problems that come up when appraisals are connected to compensation decisions. In addition, it is hard to imagine a group making sensible decisions concerning its own bonus.

The procedure for conducting group feedback (see fig. 9) is similar to that for survey feedback in organisational diagnosis: All group members fill in a questionnaire that contains questions about the group’s working and interpersonal behaviour. After the data collection the results for the group are calculated. These results are fed back to the group and discussed by the group members in a workshop. On the basis of this feedback the group can draw conclusions for its future work and co-operation and develop alternatives to its actual behaviour.

![Figure 9 Group feedback system](image-url)

The group feedback system helps to foster the exchange of interpersonal and work-related feedback. It is a means of helping work groups develop. Preconditions for an effective use of the instruments are an open organisational culture and the preparation and qualification of the group members in the use of the instrument. Groups should be involved in the development of the questionnaire and in the implementation of the system. The group members decide when the instrument should be used, for example, when new themes for the regularly held group meetings have to be found. The instrument is a tool for the groups and its use should not be compulsory. In addition to that, individual data has to be kept anonymous. This can be insured by sending the completed questionnaires to an external institute for data analysis.

In the introduction phase, an external or internal moderator will present the system to the group members. He or she will also serve as a moderator in the feedback workshop and help the group members interpret the data. In most cases, the integration of the supervisor is useful and advisable. The supervisor can fill in the same questionnaire from his or her perspective, so that the group not only gets feedback out of the perspective of the group members but also out of the perspective of the supervisor. This will help group members to stay realistic in their ratings and not to over-estimate themselves. The introduction of the instrument should be accompanied by systematic process evaluation.
8.2 Group feedback results

At the time of our case studies in the three companies, a group feedback system had not been introduced. In order to assess the acceptance of a group feedback system, we described the system shortly in our questionnaires and asked some questions about it. Figure 10 shows the results.

![Figure 10 Ratings of a possible group feedback instrument](image)

Group members can imagine that a group feedback system could lead to improvements in performance, in group co-operation and in the relationship with the supervisor. Comparing the results to the other results from our questionnaire and in considering that group members did not have any experience with such a system, the ratings are relatively high. The groups prefer the integration of the supervisor in the system and want to participate in the development of the instrument. They believe that a group feedback instrument could be useful for them.

These results show that groups can well imagine using a group feedback instrument. If the system is designed according to the demands of the work groups, it can help to fill the gap between the actual level of feedback groups receive and the ideal level of feedback. Thus, the system will work as an appraisal instrument for development purposes at the group level.
9 CONCLUSIONS

Although the development of the group feedback system was already a conclusion derived from the preceding theoretical and empirical analyses, a short summary will be given here to reconsider the main results.

Generally, human resource systems do not change with the introduction of work groups. They continue to be individually orientated and therefore cannot serve as supporting systems for the work groups. It was argued that feedback is an important supporting system, because work groups need feedback on their work and performance as well as on their interpersonal processes and on co-operation inside the group.

Case studies were conducted in three different companies with 387 workers. These studies revealed that groups receive a lot less feedback than they need. Moreover, the feedback they receive is not seen as effective. Deficiencies in feedback quality, specifically in the fulfilment of the feedback criteria, were discovered.

Performance appraisal systems were analysed as a possible solution for the feedback problem. They were classified by three dimensions, the source, the recipient, and the purpose of the appraisal and analysed in the context of self-regulating group work. We saw that appraisals for selection purposes are problematic for several reasons. This was confirmed by the workers’ ratings which showed that individual appraisals are more effective and more satisfying when they are use for development purposes.

Finally, in search of a group appraisal instrument for development purposes, a group feedback system was developed and outlined. This system is able to enhance the exchange of interpersonal and work-related feedback inside the group and between the group and its supervisor. Groups show a positive attitude towards the introduction of a group feedback system.

Meanwhile, Company A introduced the system described here. Ongoing process evaluation will have to prove the benefits of the system and show dangers and pitfalls in its use.

References


