Managing Experts by Managing Diversity: Individual Motivations for Sharing Expertise in Work Teams

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Abstract

One of the great challenges in information-sharing and knowledge management in teams is the sharing of expertise. In this paper, a model of expertise in teams is suggested that conceptualizes expertise not only as professional knowledge but also as expert role from a status perspective. The model predicts that experts will reduce their contributions to the team goals if their expert status is threatened in any way, but will increase their knowledge sharing behaviour if their status in the team is confirmed. The hypotheses were confirmed in two experimental studies (N_1=98, N_2=144), showing that explicitly declaring status differences increased expert contributions. These contributions could be further enhanced by giving individual performance feedback to experts, and were decreased under team feedback conditions. The findings are consistent with recent research showing that diversity can contribute to team performance if the diversity is recognized within the team.

INTRODUCTION

One of the great challenges in information-sharing and knowledge management in teams is the sharing of expertise. From a management perspective, expertise is the most valuable knowledge in teams and organisations, and team processes should support the sharing of expertise. From an individual perspective, the sharing of expertise is highly ambiguous. On the one hand, sharing specialist knowledge ensures expert status in the team and contributes to the team goal. On the other hand, sharing specialist knowledge might also endanger that very status, because the expertise could now be exploited by others. The ambiguity of sharing expertise in teams is what is known as a mixed-motive situation in social dilemma research.

In psychology, we find two different traditions in research on expertise: In cognitive psychology there is plenty of research on learning processes and knowledge development. Expertise is usually investigated from an individual and cognitive perspective and defined as exceptional individual performance (Ericsson & Smith, 1991). Studies in this area traditionally look at why certain individuals are able to develop exceptional levels of skills and knowledge in a specific knowledge domain, such as mathematics, music, or chess. The goal of these types of studies is to identify individual learning strategies and personality traits that might explain the exceptional abilities of these experts. The overall focus is on cognitive skills, and much less on motivation or environmental influences. The group context is usually missing entirely.

In work and organisational psychology, expertise is often defined as professional knowledge. In this tradition, expertise is not necessarily equivalent to exceptional performance, but often means that experts can more easily contextualise their knowledge and have a better understanding of the work environment. This type of expert knowledge is to a large extent defined as meta-knowledge about work processes, awareness of complex task demands, and cognitive monitoring. It influences the capacity, but also the quality of problem-solving strategies and decision-making skills of experts in the work context (Hacker, 1998). In this area of research we find studies looking at the matching of expertise to tasks and task characteristics (Brandon & Hollingshead, 2004; Brauer, Chambres, Niedenthal, & Chatard-Pannetier, 2004) and how task experience might affect recognition of expertise and group performance (Littlepage, Robison, & Reddington, 1997). A number of further studies look at how expert knowledge can be coordinated in teams (Faraj & Sproull, 2000) and how teams with experts develop shared mental models and transactive memory systems (Cannon-Bowers, Salas, & Converse, 1993; Hollingshead, 2000; Hollingshead & Fraidin, 2003). A further body of research investigates the relation between member expertise and team performance (Bonner, Baumann, & Dalal, 2002).

Only a few studies consider expertise from the perspective of expert roles (Sassenberg, Boos, & Klapproth, 2001; Stasser, Stewart, & Wittenbaum, 1995; Thomas-Hunt, Ogden, & Neale, 2003), which traditionally is a perspective more prominent in sociology than psychology (Mieg, 2001). However, these studies tend to look at the distribution of expertise in groups from a hidden-profile perspective. While the investigation of shared versus unshared information in groups is very important, it tends to neglect status aspects and motivational aspects of expertise as has been stated before (Wittenbaum, Hollingshead, & Botero, 2004). In groups, role and status definitions are fundamental to the way problems are solved, tasks are completed, and decisions are taken.

A model of expertise in teams

I would therefore like to suggest a model of expertise in teams with a double perspective: For one, expertise can be defined as professional knowledge in a certain field of work. This is the most common definition of expertise in social and organisational psychology. However, as stated above expertise also entails a certain status in a team, a perspective which has been less researched in psychology. Experts have because of their expertise a different and often higher status in teams than novices. They might also assume a certain leadership role through their expert status, although they are not team leaders per se. In this paper, I will argue that a double perspective of expertise as specialist knowledge and as team role with expert status will help understanding more fully the social dilemma of knowledge sharing for experts vs. novices in a team context.

Insert Figure 1 Here

Expertise in teams could therefore be defined as expert knowledge on the one hand and expert status on the other hand (see figure 1). The model predicts that experts should be more willing to share their expertise with other team members if their status as experts is confirmed in the team. However, if their status as experts in the team is threatened in any way, their willingness to share their expertise should decrease. A threat to the expert status could be that the contribution of expertise to the overall team performance is not visible anymore, because performance feedback is only given at the team but not at the individual level. The group engagement model would be predict that team members are generally less willing to engage in collective efforts if their individual contribution is not visible anymore (Tyler & Blader, 2003). The above model takes this argument from the group engagement model a step further by predicting that this should be even more the case for expert team members than for novice team members, because experts are very sensitive to potential threats of their expert status and will consequently reduce their group engagement significantly more than novices under conditions of status threat.

Research on transactive memory systems has also shown that experts tend to feel more responsible for the group goal if they are aware that others do not have the same knowledge as they do (Hollingshead, 2000). With respect to information sharing, this would mean that experts should contribute more to the common good if they know that they are the only expert in the group. It also means that their status of expertise is confirmed.

Knowledge is also power. As has been shown in number of studies (Poppe, 2003; Van Dijke & Poppe, 2004), people try to accumulate more power in relation to others on the same hierarchical level, also as a means to distinguish themselves from others. However, this tendency decreases if power differences in groups are recognized in terms of hierarchical differences. In the case of expertise, this would mean that the tendency to use knowledge to exert power should decrease if expert status is recognized in terms of knowledge and skills differences.

One way to conceptualize the potential costs and benefits of sharing expertise in teams is the social dilemma approach. A social dilemma is defined by a conflict between individual and collective interests, as has been shown in large number of studies on cooperative behaviour in groups (van Lange, Liebrand, Messick, & Wilke, 1992; Weber, Kopelman, & Messick, 2004). In the case of experts in teams, the potential costs of sharing expertise consist of losing the expert status in the group, either because other team members have now also access to the expert knowledge and will exploit that knowledge for their own individual benefits, or because the expert contribution to the team effort is not visible anymore and gets lost in the overall team performance. Potential benefits of sharing expertise are that expertise can only be recognised by the other team members or by supervisors if experts show what they know and contribute their expertise to the team goal. Just holding back expert knowledge cannot be the solution for experts in teams, because they might also endanger their expert status by isolating themselves within the group. Whether experts decide to share their expertise or not should therefore depend very much on their perception of feedback and recognition structures of expert performance in relation to the team performance.

In virtual teams, where information is exchanged electronically, status issues might be of even greater importance than in face-to-face contexts. If there is little information about the other contributors, people would be expected to try do distance themselves from others even more by acquiring a different and higher status in the group.

Hypotheses

Based on prior research and the theoretical arguments above, I would like to put forward the following hypotheses: 1. In a virtual team context, knowledge alone about having expert status in a team should lead to an increase in information sharing behaviour. However, experts would not be expected to differ much from team members in leadership positions in their responsibility for the team performance. This would only be expected to happen if their expert status is threatened and their expertise is represented by an actual knowledge advantage over the novices in the team. In that case, much more would at stake for the expert to lose in terms of status and recognition. Therefore, expert status will be represented not only nominally, but also by actual expert knowledge that gives the experts a performance advantage over novices in a second study. 2. Because of the ambiguity of sharing expertise from an individual perspective, arguments for both more and less sharing of knowledge for experts than for novices can be found. Without further incentives, experts and novices are therefore expected to show a similar general willingness to share their knowledge with other team members if experts have an actual knowledge advantage. 3. Performance feedback induces social comparison processes and makes individual and team contributions visible, which should enhance group engagement and therefore increase knowledge sharing behaviour for all team members. 4. However, if feedback on team and individual performance are compared, experts and novices are expected to react differently: Experts should increase their knowledge sharing behaviour more than novices under individual performance feedback, because their expert status in the team is confirmed. Under group feedback, experts are expected to show the same level of knowledge sharing or even decrease their engagement compared to novices, because their expertise is not visible anymore and their expert status in the group is threatened.

In both studies the same experimental paradigm of a consulting team in a travel agency was used (Moser, 2003, 2007). Participants were members of a virtual team, which allowed controlling for what exactly participants knew about the other team members without inference of variables such as gender, age, or likeability with respect of the other team members.

STUDY 1

It was the aim of study 1 to test whether the assigned status of expert in a virtual team would increase the willingness to share information with others and contribute to the common good. It is hypothesised that team members who are aware of their expert status should contribute more to the team goal than members who are not aware of any differences in the team. In this study, team members with nominal expert status will be compared to team members with nominal team leader status. Experts would not be expected to differ from team leaders in their responsibility for the team goal, if their expert status is not threatened and their expertise is not represented by an actual knowledge advantage over the novices in the team. Consequently, identification with the team and attitude towards cooperation should increase in the leadership condition, because being promoted to team leader should increase the perceived responsibility for the team goals and team performance. In the expert condition however, team identification and attitude towards cooperation should not increase compared to the control condition, because experts contribute more to the goal to confirm their status, but not to take on responsibility for the whole team.

METHOD STUDY 1

Participants

98 undergraduate and graduate students of the University of Goettingen participated in study 1 (64 women, 32 men, 2 missing values; age: M = 22.67, SD = 3.01). On average, they have been studying for 4.39 semesters (SD = 2.49, range 1 to 10 semesters). Participants took part in a lottery as compensation or received credits for their undergraduate study requirements.

Design

An experimental paradigm of a consulting team in a travel agency (Moser, 2003, 2007) was used to test the hypotheses above. The team members had to answer client inquires as fast as possible, using lists to look up the required hotel information and calculating the prices for the clients. Team members could only communicate through a database system, where the results of client requests could be saved on a voluntary basis and be made accessible to all team members. The experimental paradigm thus represented a social dilemma: if enough team members put the results of their calculations into the database for everyone, both the individual team members and the team could profit and perform faster. If only a few shared their calculations, they would be exploited and could not profit from others. Knowledge sharing behaviour was measured by the number of individual contributions to the database.

In the expert condition, participants were told that they have been working in the team for a long time, and have achieved the highest costumer satisfaction in the team. They were therefore promoted to the status of ‘expert’ in the team. In the leadership condition, participants were told that they have been working in the team for a long time, and had just been promoted to the status of ‘team leader’. In the control condition, no information at all was given about the team members.

Procedure

Participants were randomly assigned to one of the experimental conditions, with 28 participants in the expertise condition, 38 participants in the promotion condition and 32 participants in the control condition, respectively. Participants were working in individual cubicles at computer terminals. Other participants were working in different rooms at the same time and all participants were under the impression that they were interactively connected when completing the experimental task. In fact, all interaction was simulated on the computer. Afterwards, participants filled out a short on-line questionnaire with measures of perceived reciprocity, team identification, manipulation check measures, and socio-demographic information. They were then debriefed and thanked.

Measures

Manipulation check. As manipulation check, the participants were asked whether they were an expert or a leader in the team, respectively.

Contributions to the database. Information sharing behaviour was assessed through the number of contributions to the database system during completion of the experimental task.

Perceived reciprocity. Perceived reciprocity was assessed with 6 items from the KCI Knowledge Cooperation Inventory (Moser, 2002, in press), e.g. ‚We help each other with our knowledge, because in the end everybody benefits from the exchange‘; α = .74.

Identification with the group. Team identification was assessed with a scale of three items (Ellemers, Kortekaas, & Ouwerkerk, 1999); e.g., “I would like to continue working with this team.”; α = .83.

All items were rated on a 6-point scale ranging from 1 = strongly disagree to 6 = strongly agree.

RESULTS STUDY 1

Manipulation check

Of the 98 participants in total, only 78 gave the correct answer to the manipulation check. Therefore, the following analyses will be based on these 78 participants only.

Contributions to the database

As expected, participants in the expert condition (M_{expert} = .76, SD_{expert} = .30) and in the leadership condition (M_{leader} = .74, SD_{leader} = .33) contributed significantly more information to the database than the participants in the control condition ($M_{control}$ = .40, $SD_{control}$ = .43), $F(2, 65) = 7.10$, $p = .002$, $\eta^2 = .179$. Experts and team leaders did not differ in their contributions.

Perceived reciprocity

Perceived reciprocity also differed significantly between conditions ($F(2, 64) = 3.71$, $p = .030$, $\eta^2 = .104$). The post hoc tests shows that it is only the participants in the leadership condition (M_{leader} = 5.02, SD_{leader} = .64) who showed a significantly more positive attitude towards reciprocal cooperation than participants in the control condition ($M_{control}$ = 4.58, $SD_{control}$

= .44), $p < .05$, but not the participants in the expert condition ($M_{expert} = 4.73$, $SD_{expert} = .63$). This is consistent with the hypothesis.

Identification with the group

The same pattern was found for team identification as predicted, $F(2, 64) = 4.56$, $p = .014$, $\eta^2 = .125$. The participants in the leadership condition ($M_{leader} = 4.37$, $SD_{leader} = .83$) identified themselves significantly more with the team than the participants in the control condition ($M_{control} = 3.71$, $SD_{control} = .79$), $p < .05$, but again not the participants in the expert condition ($M_{expert} = 3.92$, $SD_{expert} = .72$).

Insert Figure 2 Here

DISCUSSION STUDY 1

The results show that knowing about one's expert or leader status already leads to an increase in group engagement as predicted. However, the differences between the leadership and the expert conditions also show that the motivation for experts to share information is to be found in the explicit confirmation of their expert status rather than in taking on leadership responsibilities, and changes little in their attitude towards the team in terms of identification and team goals. Leaders in contrast show a similar increase in contributions to the database system, but probably for different reason. Unlike experts, team leaders showed an increase in team identification, and also an attitude change towards cooperativeness and reciprocity, which was not found for experts.

One limitation of study 1 is certainly to be seen in the rather week manipulations of expertise and leadership, which were both only awarded nominally, and did not correspond with actual expert knowledge or leadership functions. This might also account for the number of participants that failed to answer the manipulation check items correctly.

STUDY 2

It was therefore the aim of study 2 to represent expert status not only nominally as in study 1, but also by actual expert knowledge that gives the experts a performance advantage over novices. Because sharing expertise is ambiguous from an individual perspective, experts and novices are expected to show the same general willingness to share their knowledge with other team members if experts have an actual knowledge advantage and no specific incentives are given for knowledge sharing. Performance feedback induces social comparison processes (Festinger, 1954) and makes individual and team contributions visible, which should enhance group engagement and therefore increase knowledge sharing behaviour for all team members (Buunk, Zurriaga, Peiro, Nauta, & Gosalvez, 2005). However, if feedback on team and individual performance are compared, experts and novices are expected to react differently: Experts should increase their knowledge sharing behaviour more than novices under individual performance feedback, because their expert status in the team is confirmed. Under group feedback, experts are expected to show the same level of knowledge sharing or even decrease their engagement compared to novices, because their expertise is not visible anymore and their expert status in the group is threatened.

METHOD STUDY 2

Participants

144 undergraduate and graduate students of the University of Goettingen participated in study 2 (80 women, 62 men, 2 missing values; age: M = 23.73, SD = 3.91). On average, they have been studying for 5.00 semesters (SD = 3.48, range 1 to 24 semesters). Participants took part in a lottery as compensation or received credits for their undergraduate requirements.

Design

As in study 1, the experimental paradigm of a consulting team in a travel agency (Moser, 2003, 2007) was used to test the hypotheses above. Again, the team members had to answer client inquires as fast as possible, using lists to look up the required hotel information and calculating the prices for the clients. Team members could only communicate through a database system, where the results of client requests could be saved on a voluntary basis and be made accessible to all team members. The paradigm thus represented a social dilemma: if enough team members put their calculations into the database for everyone, both the individual team members and the team could profit and perform faster. If only a few shared their calculations, they would be exploited and could not profit from others.

In contrast to study 1, experts had access to additional lists already giving the calculations for the most frequent client requests (e.g. families with two children staying 7 nights and requiring a swimming pool), thus representing their expertise by an actual knowledge advantage. Due to their experience, experts were therefore able to perform better than novices and had the option to share or withhold their expertise from team colleagues. Knowledge sharing behaviour was measured by the amount of individual input into the database.

The design was a two-factorial experimental design with the factor ‘expert’ vs. ‘novice’ and the factor feedback with three different feedback conditions, ‘individual feedback’, ‘team feedback’, and ‘no feedback’ (control condition).

In the expert condition, participants were told that they have long-standing experience in consulting, and thus know which combinations are the most frequent costumer requests. They have set up tables with the results for the most frequent requests and are able to process the costumer requests much faster, which can be found as list among their materials. The tables were set up before the database system was set up.

In the novice condition, participants were told that they are new to the team and have little experience in consulting. They know that certain combinations of costumer requests are more frequent, and are aware that other team members have developed a high expertise and don’t have to calculate the frequent requests again each time, which puts them at an advantage.

In the individual performance feedback condition, participants were informed that after completion of the task they would receive feedback about how well they performed in relation to other costumer consultants and how much they contributed to the database system.

In the group performance feedback condition, participants were informed that after completion of the task their team would receive feedback about how well they performed in relation to other consulting teams and how much the team contributed to the database system.

In the control condition, no information at all was given about the team members and no performance feedback at all.

Procedure

As in study 1, Participants were randomly assigned to each one of the six experimental conditions, with 24 participants in each condition. Again, participants were working in individual cubicles at computer terminals. Other participants were working in different rooms at the same time and all participants were under the impression that they were interactively connected when completing the experimental task. In fact and as in study 1, all interaction was simulated on the computer. Afterwards, participants filled out a short on-line questionnaire with manipulation check measures and socio-demographic information. They were then debriefed and thanked.

Measures

Manipulation check. As manipulation check, the participants were asked whether they had expert knowledge or not, respectively. Feedback manipulations were checked by asking whether feedback was announced or not before starting the task.

Contributions to the database. Information sharing behaviour was assessed through the number of contributions to database system during completion of the experimental task.

RESULTS STUDY 2

Manipulation check

Manipulation of 'expert' versus 'novice' conditions was successful for both manipulation check items. Equally, the manipulation check for the feedback condition were successful. All 144 participants were thus included in the analyses.

Contributions to the database system

Results showed that without feedback, novices and experts did not differ in their knowledge sharing behaviour as predicted ($F(1,144)=0.03$, $p=.86$, $\eta^2=.00$).

Contributions to the database system with individual vs. team feedback

If feedback was given on individual and team performance, overall knowledge contributions increased for both novices and experts ($F(2,144)=3.04$, $p=.05$, $\eta^2=.04$). As predicted, their was a significant interaction effect with expertise, showing that experts shared more knowledge when individual feedback was given than novices and less when team feedback was given ($F(2,144)=3.13$, $p<.05$, $\eta^2=.04$). Novices in contrast showed the opposite pattern of less contributions under individual feedback, and increased contribution if group feedback was given (see figure 3).

Insert Figure 3 Here

GENERAL DISCUSSION

The results of study 1 show that just the awareness of one's expert or leader status already leads to an increase in group engagement as predicted. However, the differences between the leadership and the expert conditions also show that motivation for experts is more likely to be found in the explicit recognition of their expert status, and less in them taking over leadership responsibilities. This is supported by no or only little changes in the attitude of experts towards the team and identification with team goals. Leaders in contrast show a similar increase in contributions to the database system, but probably for quite different reasons. Unlike experts, team leaders showed an increase in team identification, and also an attitude change towards cooperativeness and reciprocity, which was not found for experts.

In study 2, it was shown that experts and novices react very differently to status threats and the social comparison processes that are induced, if team versus individual performance feedback is given. This can be explained from a social dilemma perspective: experts in a team risk losing their expert status if performance feedback is only given on the team level. Novices have nothing to lose in terms of status but stand to gain if they are members of successful teams and thus show exactly the opposite reactions to team and individual feedback.

The results of both studies can be interpreted meaningfully if expertise at work is not only conceptualized as professional knowledge, but also as expert status within a team. As such, and as was shown in study 1, expert status in teams includes aspects of leadership roles in teams, but at the same time is not identical to leadership roles and responsibilities.

When looking at possible implications for practice, it might be important to consider the great increase of virtual teams presently working in all types of organizations and with more and more employees working in different locations. Often communication and exchange of information is restricted to database systems similar to the one set up in the experimental paradigm of the travel agency used in both studies. While I believe that it is vital to look at experts from a role and status perspective in all types of teams, it could well be that the importance of expert status in virtual teams is even greater. This could be due to a greater need for individual distinctiveness in virtual teams, because other indicators of status, such as seniority, age, gender, non-verbal communication, and likeability are less visible in a virtual context. The results of the presented studies could also be interpreted in the light of recent findings in research on diversity, where is was shown that diversity can contribute to team performance if the diversity is recognized with the team, but will deplete team performance if an ‘all are equal’ attitude is assumed. In this sense, expertise is also an aspect of diversity and could be explained by the Categorization-Elaboration Model of work group diversity and performance (Bunderson, 2003; van Knippenberg, De Dreu, & Homan, 2004).

To motivate experts to contribute their expertise in the collective interest of teams and organizations, it seems crucial for team leaders and managers to consider what they can offer their most treasured experts in exchange for their cooperativeness. Recognition of the status as expert seems to be among the highly valued rewards for employees with exceptional professional skills and knowledge.

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Figure 1. A model of expertise in teams

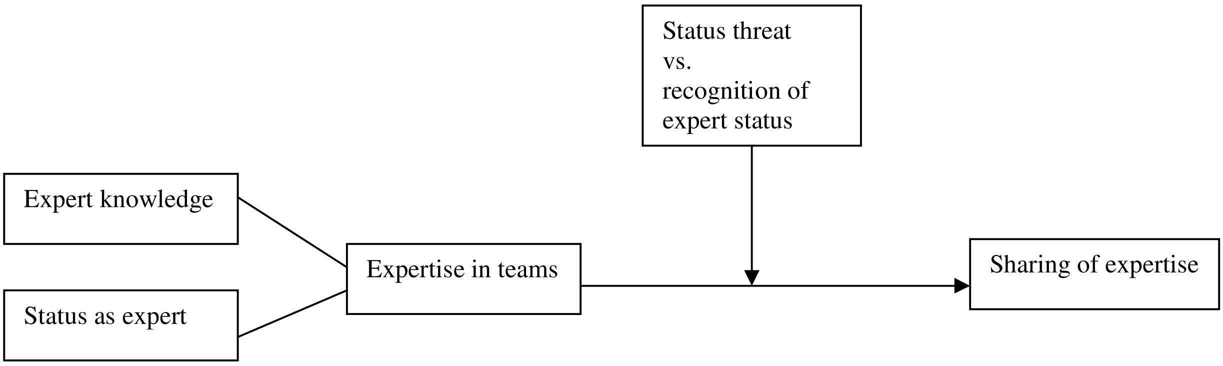

Figure 2. Contributions to the database by leaders and experts

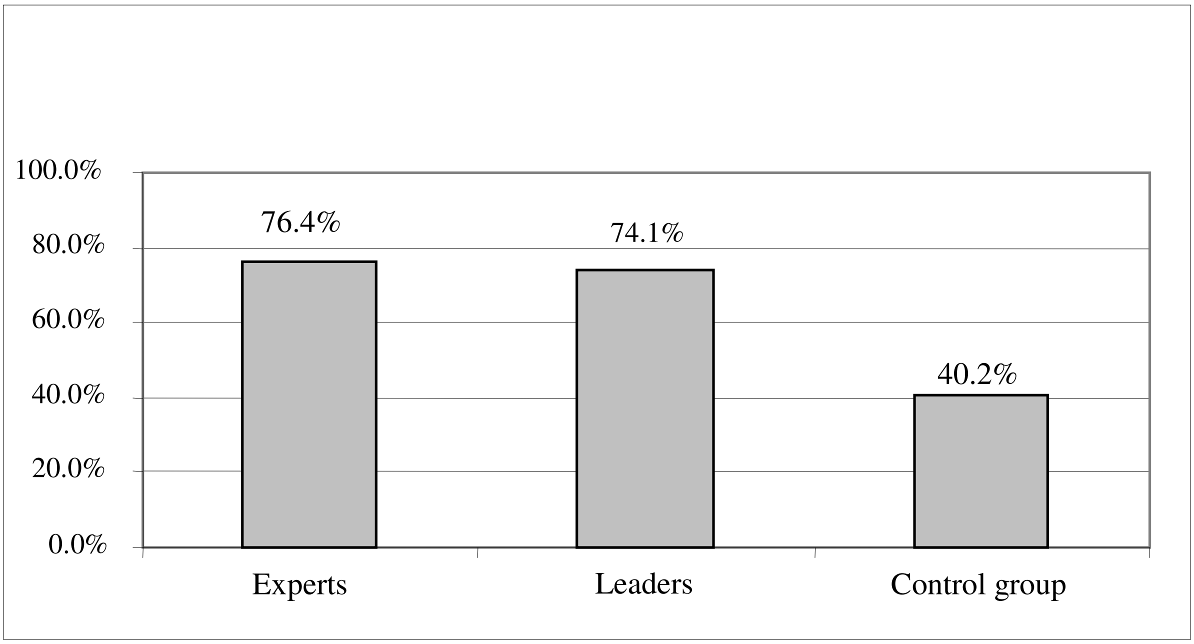

Figure 3. Contributions to database of experts and novices under different feedback condition