



AALBORG UNIVERSITY
DENMARK

Aalborg Universitet

Managing Changes with focus on Employee Involvement and Learning

Kofoed, L.B.; Rosenørn, T.U.; Jensen, Lars Peter

Publication date:
1999

Document Version
Også kaldet Forlagets PDF

[Link to publication from Aalborg University](#)

Citation for published version (APA):
Kofoed, L. B., Rosenørn, T. U., & Jensen, L. P. (1999). Managing Changes with focus on Employee Involvement and Learning: An experimentarium as a learning arena.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- ? Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- ? You may not further distribute the material or use it for any profit-making activity or commercial gain
- ? You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

MANAGING CHANGES WITH FOCUS ON EMPLOYEE INVOLVEMENT AND LEARNING.

- AN EXPERIMENTARIUM AS A LEARNING ARENA

by

Associate professor Lise Busk Kofoed, Aalborg University, Department of Planning and Development, Fibigerstræde 13, DK 9220 Aalborg Ø, Denmark.

Telephone: + 45 96 35 83 32. E-mail: kofoed@i4.auc.dk

and

Associate professor Torben Rosenørn, Aalborg University, Department of chemistry and Applied Engineering Science, Niels Bohrsvej 8, DK 6700 Esbjerg, Denmark. Telephone + 45 79 12 76 66. E-mail: tur@ae.auc.dk

Associate professor Lars Peter Jensen, Aalborg University, Department of Control Engineering, Frederiks Bajers vej 7C, DK 9220 Aalborg Ø, Denmark.

Telephone +4596358740. E-mail: lpj@control.auc.dk

ABSTRACT

The initiating question guiding this study is how employee participation can be established during an organisational change process in order to ensure the employees' involvement in the design of their future work environment. A case study where an "experimentarium" (learning lab) was set up in a medium size Danish company (200 employees) is presented in this paper. The study shows that management as well as employees have to learn respectively to manage and to participate in the change process and to deal with the unforeseen problems during the change process. The case study demonstrates that it is feasible to generate employee participation in designing their future working environment in the experimentarium when careful attention is given to the influence of situational factors and the work in the experimentarium is supported by management. Furthermore a common learning process was started in the experimentarium, and it is shown that the role of managers and supervisors is very important for the outcome of the learning. Results from work in experimentaria show that management and employees have unclear, different and not communicated expectations to each other and that this is a barrier for a successful change - and learning process. Reliability, confidence, visibility and communication skills are the most wanted management qualifications seen from the employee's point of view. Flexibility, reliability, willingness to learn and to take more initiatives and responsibility are qualifications management wants the employees to acquire. These qualifications are to a certain extent obtained by the employees in the experimentarium.

Key words: Experimentarium, change process, management's qualifications, employee participation.

Introduction

Employee involvement in technological and organisational change processes is considered important to the overall effectiveness of the process, especially when employees are given the opportunity to influence the changes as well as the resulting outcome on their future work

situation. Particularly changes, which take working environmental aspects into consideration, create a need for active participation of all actors in the change process (Lund 1995, Remmen 1998). Participation is also a strategic means to get relevant information for the new organisational design and to secure motivation during the change process (Glass 1998). However, experience in the fields of technological and organisational change has demonstrated that employee involvement in constructive change processes can be difficult. An important precondition for participation in changes is that the employees learn to participate, and management learn to manage participation (Busk Kofoed and Simonsen 1998). There is a need for methods of change management which can foster motivation, commitment, and willingness to work with both the possibilities and problems inherent in the change process. Furthermore, these methods must acknowledge that while different actors in a company may be useful resources in the change process, the varied interests between different groups and within groups often produce conflicts which influence the progress of the process. Our study – a change process in one company - addresses the question: How can employee participation be established in real life during an organisational change process in order to ensure the employee's involvement in the design of their future work environment? This paper presents a possible answer, an "experimentarium" (learning lab) as a frame/setting for implementing learning processes supporting organisational change in a company choosing to utilise employee participation while directing attention to the work environment. The paper further presents some of the pedagogical background for the methods used in and the content of the experimentarium and finally discusses and concludes on the experimentarium as a learning arena in relation to change processes.

THE CASE

The case study is from a medium size Danish processing company with a high turnover rate. At the start of the planned change process, there were approximately 250 employees, with more than one half of those involved in production. The company must improve its competitiveness and efficiency in all facets of its operations before the end of the century. The stated goals for improvement were: optimising production and creating a more flexible organisation, some planned technical and logistical changes, and a new organisational structure with the total work force being reduced by approximately 20%. Further management wanted to change the organisation to be a learning organisation with a high level of change preparedness in order to cope with the ever changing conditions and demands in the surrounding society.

In 1995 the company replaced its existing production system with a more technologically advanced computer-based system.. In spite of the new fully automated system, the company had retained the same number of employees in the production department. Except for the implementation of the new automation system and other minor technical changes, the company has remained virtually unchanged during the past thirty years. The company culture is focused on safety issues, and there are a number of fixed rules and procedures connected to the production and administration. The chain of responsibility and level of competence follow a very hierarchical structure.

In the planning stage of the change process, the general manager was inspired to run the process in a democratic way with emphasis on employee participation as described in Business Process Reengineering (BPR). An international consulting company which assured

a change process without frustration was hired to supervise the change. The approach of the consultants was to activate as many employees as possible in the process and use an analysis of the present situation as the basis for designing and planning the future organisation. Problems surfaced quickly due to the fact that many of the employees and managers did not understand the complexity of the change nor had they received the appropriate information and tools to analyse the future consequences of the changes. This lack of understanding of the proposed organisational structure combined with an existing culture of no changes and fixed procedures created a strong barrier to the employees ability to see any beneficial outcome from the change process. Apparently, the technicians in the production were not able to share top-management's and the consultants vision for them, specifically, that the technicians would become more self-directed and responsible for their own work processes. Rumours began to circulate among the employees regarding the size of the workforce reduction, the lack of job security, and management's "hidden agenda". Eventually the production technicians, which comprised the majority of the total work force, withdrew their participation in the change process due to a total loss of trust in the consultants and management.

In summary, the change process had created an atmosphere with a high degree of resistance, insecurity, distrust towards management, and a prevailing attitude in which there was absolutely no wish to participate in discussions related to any topic other than manpower, regardless of the potential benefits to their work environment. The manner in which the production technicians expressed their frustration demonstrated their need for a much deeper discussion of the potential outcomes of the change process. It was also evident they required the assistance of a skilled facilitator to lead constructive discussions aimed at modifying their reactive attitudes to more proactive ones.

On this basis we would try to establish an experimentarium where the production technicians and their leaders through common learning processes could get the necessary skills for participation and obtain change preparedness

The Theoretical approach of the Experimentaria

We consider learning and change processes to be very connected (Busk Kofoed et. al., 1997). Therefore, to support change activities, e.g. get the silent majority to participate in a change process, we want to develop and establish a framework for learning and development. This framework should offer possibilities for employees from all levels and functions of the company to be in a common learning and development process, where they can benefit from each other's resources and create a common basis for the Company's further development. Such a framework can be made by establishing an "experimentarium". The experimentarium is based on ideas from action learning, and it is established as a 'room', which is removed from daily work. In this room experiments can be made without any direct influence on the production or the product. The purpose of the experimentarium is to give employees on all levels and managers the opportunity to develop and test new ideas, to carry out experiments in a hypothetical situation, and learn to learn together – it means to stage a situation based on trust and willingness to try new ideas and activities.

When working with specific activities the participants are taught to see themselves and their colleagues as experts within their fields, and they have to experience a common learning process. It is important that the participants acknowledge each other's resources so they can take part in a common development process - a process in which everybody in cooperation

can contribute with expertise to solve problems, to create innovations and to learn together. A broader understanding and knowledge of other employees' and colleagues' potentials may cause mutual respect, strengthen the confidence in own resources, and improve cooperation opportunities. This could bring about a willingness to try to change, and see the potentials as well as analyse the problems. These ideas are based on a specific pedagogical approach. The theoretical background we have worked with in relation to organisational learning covers two different approaches to changes: an evolutionary change over a long period and 'here and now' changes from known to unknown in the organisation.

In the first approach a learning method based on a n introduction to the organisations cultures and values over a period of time may be suitable. This method will not make major drastic changes to the organisation but may over a long period due to individual skills or outside pressure create development in methods and even changes in culture and values. This type of learning is described by Lave and Wenger (1991) as Legitimated Peripheral Participation. This possibility will not be discussed further in this paper.

In the second approach 'here and now changes' which are common in an ever changing society changes in values and culture may be required. As a result of this the organisation moves from something safe and known to something unknown. The organisation has not got core values around which the employees can make a peripheral participation.

The organisation will need to agree on all levels on the new values, new responsibilities, and even new organisation. To do this successful double loop learning is necessary (Argyris, 1994).

The development process will require new knowledge and skills and new understanding and attitudes. This must be obtained through a common learning process.

It is very important to emphasise that all actors represent valuable expertise in their respective fields, an expertise which as far as possible should be exploited to benefit the organisation in and after the change process. A further advantage with this approach is that employees who feel that they have something valuable to contribute with feel comfortable and have high self-esteem which is important for the motivation and for the working environment.

Cognitive knowledge on the level of understanding requires that the learner goes through a reflection period and even more so is it when the required learning encompasses affective development. The theoretical approach for the learning processes we apply in the "experimentarium" takes the consequences of this and we have chosen experiential learning combined with reflection as the basis for the learning processes.

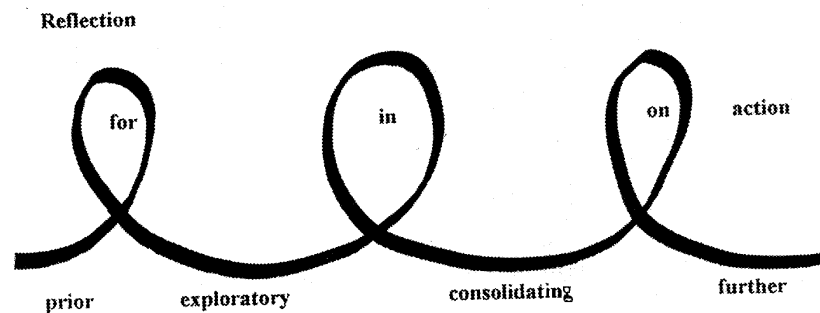
In the "experimentarium" we try to simulate the reality or problems related to the daily working situation as much as possible and try to create a secure environment where mistakes are allowed and regarded as a positive part of the learning process.

The theoretical approach is taken from Schön's theories about the reflective learner, combined with Kolb's learning cycle as interpreted by Cowan (1996) as consisting of the four phases:

... experience - reflect - generalise - test

Reflection on how and why is important in a learning situation. Guided, preplanned reflection can support the learning process. Cowan considers the reflection as the central issue in the learning process, which is why he also describes his learning concept as 'reflective learning'. Schön (1978) distinguishes between reflection related to action and reflection related to experience, described as reflection-in-action and reflection-on-action. These types of reflection are mostly retrospective in their attempt to make analyses with the purpose of using the gained experience and the deduced theories in future learning situations.

Cowan adds a third learning distinction, reflection-for-action, in which the participants reflect



upon which types of problems they hope to be able to solve more successfully in the future than they are at present, and have been up to now. Cowan describes reflection-for-action as follows: 'It is a reflection which directs subsequent learning by identifying needs, aspirations and objectives which are then kept almost constantly in mind' (Cowan 1996, p. 37). John Cowan's illustration of the process is shown in fig. 1.

Fig. 1 The Cowan diagram. (Cowan, 1996:38).

Our learning approach, based on Schön, Kolb, and Cowan, encompasses 3 preplanned reflection loops:

Reflection-for-action, reflection-in-action, and reflection-on-action.

By reflection for action we understand that the first phase of the learning process is a reflection, where it is rendered visible why the learning process must be performed, what it shall contain, how it is to be carried out and evaluated. Furthermore this reflection is used for calibration of expectations about the contribution from the other participants, from the facilitators (tutors/coaches) and last but not least expectations to her/himself.

This reflection is very important in the attempt to make the participants take responsibility for their own learning and for the success of the entire learning process.

In order to ensure that the learning process is 'on the track' a planned break for reflection (reflection-in-action) is included in the process.

In this reflection it is considered whether or not the scope and goals formulated in the reflection-for-action are still relevant and achievable, and it is considered how far your expectations have been accommodated so far. The result of the reflection may be a revision of the program or a revision of expectations or behaviour and possibly a clarification of what you want to learn further in the process.

The final reflection, reflection-on-action, is partly an evaluation of the process, and how it can be improved in future learning situations and partly a reflection concerned with how to transfer the result of the process into the daily working situation.

The Cowan diagram is a simplified representation of what happens in real life, and Cowan also states that a complete round in the Kolb cycle is not made every time reflection is made in a learning process.

It is in our opinion very important to ensure that the learners are urged to put words to their reflections and generalisations because it seems to improve the quality of the reflection and it ensures that the results can be communicated. Further it is in particular in the early phases of

the learning process that the reflections are on specific topics if necessary chosen and presented by the facilitator/tutor.

Once the reflection has become a habit the needs for intervention by the facilitator become much less.

To sum up the concepts for the Experimentarium:

- Experimentarium includes deliberate, conscious, and active reflection as a part of the pedagogical groundwork
- Participants are encouraged to take ownership of their learning process within the experimentarium
- Experimentarium is grounded in problem-based learning and analysis from the start of the process
- Participants themselves decide the issues for the project
- Project work is highly relevant to the normal daily work functions of the participants
- Methods for analysing and testing problem-solving ideas is dependent on the situation and contents of the chosen project
- Results of the experimentaria strongly depend on participants level of ownership to their project, external events which occur along the boundaries of the experimentarium, the degree of security the participants feel within the experimentarium, and whether the participants have established goals and success criteria for themselves and for the projects within the experimentarium.

Experiences from Six Experimentaria.

The experimentaria was planned within the framework of the above mentioned pedagogical principles and was arranged to accommodate the actual situation of the case study. A precondition for formulating the content for the experimentarium was an understanding of what the work situation in the new planned organisational structure would be, the necessary communication, information, responsibilities, and qualifications desired, and the expectations all departments/employees/ managers possessed for their new organisation. Management expressed a desire to focus on the development of team skills and change readiness, which could be a natural extension of the planned group activities in connection with the project work for the experimentaria.

To gain awareness of the conditions within the actual work situation, several workshops were planned with representatives from top management and from each of the different groups in attendance. The aim for the workshops was to explain the purpose of the experimentarium, discuss the anticipated challenges that would arise, and to allow the participants the opportunity to begin to generate a list of problems which they perceived as barriers to improved effectiveness. The identified barriers would serve as the springboard for the learning processes, in which participants would learn new skills for communication, teamwork, and problem-solving. Due to the recent downsizing which resulted in one fewer employee on each of the production shifts, there was a suggestion from the production manager that the shifts' projects might seek to develop an effective method for sharing the work functions with a reduced workforce. We reminded the participants that they need to be constrained to the leaders suggestions to avoid their perceiving that the project was defined for them by management.

We presented the ideas for the design of the experimentarium to the shift leaders and the production manager, and after some discussion about the times for establishing an experimentarium for each shift of the technicians (six shifts of 15 men and a shift-leader), we started to plan the framework for the experimentaria. During the planning period of three months many new organisational initiatives were made and accordingly, several modifications to the basic content of the experimentarium were required.

Each shift started with a workshop which was intended to be a planned as “reflection for”. However, due to the frustrations, mistrust and resistance towards new initiatives, it was necessary to take a great deal of the time available for the learning process in order to attempt to help facilitate some of these issues. After having found an outlet for their feelings, participants produced several relevant project proposals. Each shift formed two or three groups who worked with their chosen project. The experimentarium was held during a five month period with three full days away from the company: a start day, a mid-term day and a closing day. Those days were filled with project work, exercises as games, role-plays, tests, discussion of the learning process, and ending with facilitated reflections. Between the full days each group worked with their project and were in contact with one member of the research team, who visited the group three times during the process to help with the project and also to act as facilitator.

In actuality, the workshops fulfilled another very important function, in addition to those originally expected, by providing an arena in which members of the organisation could vent their feelings of frustration, anger, mistrust, and scepticism regarding the change process initiated by the external consultants and their present work environment. Once the “air cleared” somewhat, a large number of the participants were able to begin to focus on selecting a work related problem to focus on during their learning process in the experimentarium. Still, motivation to participate was not at an optimal level and we therefore intervened at this point, asking management to suggest a way to demonstrate the utility of the projects to future work situation. To the surprise and pleasure of the members of the organisation, management thus suggested that each shift should produce a presentation of their projects, once completed. Motivation for participation in the experimentarium from this point on was noticeably improved.

The learning process was designed so that participants would learn to analyse the chosen problem, to generate and test solutions, and to evaluate tested solutions in terms of negative and positive consequences before presenting their project to top management. Many of the workshop participants appeared pleased to have the opportunity to learn about different group dynamic processes, including effective methods for communication, conflict resolution, and teamwork while conducting the project.

The projects selected were quite relevant and involved different aspects of the new organisational structure, including problems concerning training and the logistical issues in the actual work situation, for example, how to manage the production requirements with less manpower. In many cases, the discussions for projects focused on issues related to safety, which was consistent with the prevailing past organisational culture. There was, to a lesser degree, also discussion of issues related to teamwork, communication, participation, participatory decision-making, and employee development.

Almost all groups demonstrated serious interest in experimentarium by devoting time and careful thought to the selection of a problem; however, it was evident that at least some of the participants were either not interested in participation (e.g., they did not select a problem to be

used in the learning process, little time and thought was involved in selecting a project), or their projects appeared to be selected more as an attempt to use the experimentarium to further vent their frustrations towards management or the change process. The effects of negative group pressures from some of these latter mentioned participants also appeared to be quite intense during some of the workshops and it is expected that those opposing the change process may have influenced some of the projects adversely.

CONCLUSION

This study was guided by our interest in discovering the possible positive consequences of encouraging employee participation in a planned change process by means of a model for common learning processes. Our experiences in the experimentarium were in fact encouraging in several respects. First, employees gained a greater sense of understanding of the entire technological and organisational change process and possibilities for influencing their future work situation. During the preliminary and intermediate stages of the change, there was much confusion and distrust regarding the change process, primarily a result of unsatisfactory communication between the consultants hired to facilitate the change, members of management, and the production workers. By self-identifying, analysing and seeking to solve existing or potential problems in the future work situation, employees began to see possibilities and to generate a more accurate vision for their futures.

Second, a large number of the employees demonstrated an interest and willingness to participate in the change process by their selection of legitimate and relevant projects for the experimentarium. The frustration, distrust, and opposition expressed at the first workshops was replaced in great part by enthusiasm to work together as teams to identify and attempt to access aspects of the new work situation. Although not their intended purposes, the initial workshops also provided a secure environment in which to express their feelings as well as asking and have answered many questions regarding the upcoming changes in the organisation. Trust lost for the consultants and management from all levels during the difficult beginnings of the change process began to rebuild from this point especially when the production manager used the questions from the workshop to explain the ideas of the vision and why the company needed a change culture. Through the problem-solving projects in the experimentarium, shift workers also began to gain constructive interests for the teams on other shifts, for the first time opening the window to inter-team co-operation.

Third, the experimentarium provided members of the organisation the opportunity to learn and practice various “soft skills”, including ones related to teamwork, communication (in group as well as the skills to present their projects to management), and identifying, analysing, and solving work related problems. Evidence of double-loop learning, outlined in the original research protocol was also observed within several of the projects conducted during the study. In particular, one shift developed a training model for new employees which is already implemented.

Thus, we may conclude that the experimentarium did indeed offer a method for providing shared learning during the change processes in this particular study. Still, due to the fact that our observations and data collection is not yet complete (scheduled to finalise late 1999) and because of numerous and significant external factors, it is virtually impossible to evaluate the extent of any long term positive consequences of such a common learning arena on the work situation. We believe that one of the greatest limitations to this study concerned the prior management of the change process at the time the experimentarium was begun. Motivation

and willingness to participate in any type of change was understandably low because of less than desirable handling of the initial phases of the change management. Perhaps had the experimentarium begun during the preliminary stages of the change process, the employees might have had the opportunity to share management's vision of their future work environment and been more willing to participate and influence in its development. With circumstances as they were, the employees did not take advantage of the opportunity to actually influence the changes. In fact, the experimentarium itself provided the only available vehicle by which employees could actually feel they were involved in the change process. The lack of opportunity for early participation and influence in the process certainly fuelled the distrust the technicians in the production felt for the process and management and confirmed for them the perception that management had a "hidden agenda" and that all issues of the upcoming changes had been previously determined without their input.

Another important lesson learned while conducting the experimentarium concerns the organisational resources necessary to conduct such a learning arena (and possibly management of the change process in itself). We found the middle managers (supervisors/shift-leaders) lacking in requisite leadership skills and broad based, multifaceted knowledge of both the technological and organisational changes occurring and the daily work functions performed in the organisation. Supervisors in this organisation were themselves confused with regard to their modifying roles in the future work situation, which did little to develop the employees confidence in their leadership. In addition, a strong and wide knowledge base was found to be especially critical in this case study, where the distrust and opposition to the change process was so extreme.

Time allocation to work on the projects in the experimentarium also presented itself as a problem. In order for management to demonstrate their support of such employee participation in the experimentarium, it is important that they ensure that resources such as time, meeting space, and materials are available.

Given the combination of extremely positive and somewhat disappointing findings from this study, we can conclude that it does appear feasible to generate employee participation in designing their future work situation during a change processes through their participation in an experimentarium under certain conditions:

- It is of utmost importance that the preconditions, i.e., resources available, scope of experimentarium and pedagogical method are known and understood by the participants.
- It must be realised that the organisation and the change process which takes place simultaneously with an experimentarium defines boundaries and constraints for the experimentarium and that these conditions may change during the course of the experimentarium. The facilitators must be flexible enough to adapt to influences originating outside of the experimentarium while remaining within the context of the experimental model.
- Management must show serious interest in the experimentaria and the results. The full impact of the importance of management's demonstrating interest was witnessed in the markedly increased level of motivation for the projects once participants learned that they would have the opportunity to present their ideas to management. Participants had reason to believe, possibly for the first time, that their ideas and suggestions were worthwhile to be considered in the future work environment.

- Management must realise that not all employees are interested in changes or in taking responsibility even when their own futures are involved and that these few may exert negative pressure on those wishing to positively contribute. It becomes the challenge for management and the facilitators to create a safe haven for these persons to come out into the open and through this create the basis for others to join in being positive (defeat the existing culture).
- The facilitators must retain their chosen pedagogical method regardless of any resistance encountered.
- Through problem-solving group projects involving real work issues, participants must learn to accept responsibility for designing their future work environment.

References

- Argyris, Chris; Putnam, Robert; Smith, Diana McLain 1985. Action Science. USA: Jossey-Bass Inc. Publishers,
- Argyris, Chris 1994. On Organisational Learning. London: Blackwell Publishers Inc.
- Borum, Finn 1995. Strategier for organisationsændring. København: Handelshøjskolens forlag.
- Busk Kofoed, Lise, Jensen; Lars Peter og Rosenørn, Torben 1997. Participation, learning and technological changes - with focus on monitoring work both in and outside control rooms. Klaus T. Nielsen & Christian Clausen (red.): Working Paper No. 3: Working Environment and Technological Development - positions and perspectives. Danmark..
- Busk Kofoed, L. and Simonsen, G.: Equipping a company for technological and organisational change (10p) Paper for the 7 th. International conference on management of technology. Orlando 1998.
- Cowan, John 1998. On Becoming an Innovative University Teacher - Reflection in Action. London: SRHE and Open University Press.
- Glass, Neil 1996. Management Masterclass. A Practical Guide to the new Realities of Business. London: Nicholas Brealey Publishing.
- Kolb, David A. 1984. Experiential Learning. Experience as the Source of Learning and Development. USA: Prentice-Hall, Inc.
- Lave, Jean & Wenger, Etienne 1994. Situated learning - Legitimate peripheral participation. Cambridge University Press.
- Lund, Reinhard. 1995. Ny teknologi gennem samarbejde. Aalborg Universitetsforlag.
- Rosenørn, Torben 1998, Changes through common learning and reflection processes. Proceedings of HAAMAHA 1998, Ergonomics for Global Quality and Productivity, Edited by R. Bishu, W. Karwowski and R. Goonnetilleke.
- Schön, D.A. 1987. Educating the Reflective Practitioner. Toward a New Design for Teaching and Learning in the Professions. Jossey-Bass Publishers.

About the authors

Associate professor, PhD Lise Busk Kofoed, Department of Development and Planning, Aalborg University has a background in social science and psychology. Her research area is within technological changes and working environment, especially with focus on employee participation in change processes. E-mail : Kofoed@auc.auc.dk, tlf +45 96 35 83 32.

Head of department, Associate professor Torben Rosenørn, Department of Chemistry and Applied Engineering Science, Aalborg University Esbjerg has a background in chemical engineering. His research area is within technological changes and risk and working environment with focus on the influence of values, culture, and choice of learning processes related to the change processes.

E-mail: tur@auc.auc.dk, tlp + 45 79 12 76 73.