

Communities of development: A new model for R&D work

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Abstract This article provides the reader with insight into what research and development (R&D) work specifically entails. The various stages in development processes are described from the research question and analyses that have current practice as the point of departure to consolidation and new practice based on the testing of concrete teaching programs. This article also illuminates the “R” in R&D work. A thorough review is given of how the development processes can be explored by having a meta-perspective on concrete practice. A number of models have been developed to visualize development and research. We introduce our own R&D model in the article which is a very accessible way of presenting the various processes within the stages and levels of R&D work. The article ends by pointing out the importance that focused research questions have for R&D work and how the model can be a tool for researchers cooperating with teachers in communities of development.

Keywords Research and development work · Development process · Research process · New model for R&D work

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Introduction

The term R&D work (research and development work) indicates that there are at least two processes that occur at the same time; practice is both explored and developed. What does this entail? Some teachers might ask if this is new at all, and if this is not, what has always been done. We do not doubt that teachers are always trying to develop their own practice, but it is difficult to claim that these development processes based on focused practice have been studied systematically. A systematic approach means that the researcher's insight (Postholm 2007b; Tiller 2006) is focused on activities in practice, and it is this insight that represents the systematic part of the work. If we are to study practice in a systematic manner, we need a point of departure based on selected and limited themes preferably presented as a clear research question.

Such a research question could be, "How can the varied ways of working that focus on learning strategies contribute to the academic and social development of each pupil?" This was the research question that was developed in a cooperative process between the researcher and lower secondary school teachers in a 2-year long R&D project.¹ The secondary school where these 12 teachers worked was a student teacher training school, so the school had an already established working relationship with the teacher education college where the researcher was working. The headmistress welcomed the researcher into their school and required all teachers to participate. She saw the opportunity to obtain help in implementing the new national curriculum plan. The aim for the teachers was to develop their teaching practice. This activity was framed by the research question with the teachers reaching a point where they wanted to observe each other's practice and reflect together on the basis of these observations to improve practice.

Needless to say, teachers could formulate a research question like this without any input from researchers. However, whether this research question is created in cooperation with researchers or by teachers working on their own, our experience indicates that it must be created "from below" and "from within" (Moen 2009; Postholm 2007a, c, 2008b). We have found that teachers must have the freedom and need to see the choice of the theme and research question as a democratic process where they are the principal actors. Such a stance is also supported by other researchers (see Elmore 2004; Freire 2005; Hargreaves and Fullan 1998; Louis 1998). Our experience indicates that themes or research questions that are delivered "from the outside" or "from above" do not take root, and that compulsory work on them quickly becomes a waste of time and resources. If teachers are allowed to work on areas that they see as useful and necessary, they will devote themselves to this meaningful work, thus creating the best climate for change and development. For the most part, teachers find arguments and the basis for their teaching in the national curriculum plan, but the content and arguments for teaching have to, first,

¹ The researcher cooperated with a total of 12 teachers that constituted a teacher team in a lower secondary school over a period of 2 years. This cooperation was part of a larger research project (2006–2009) funded by the program, *Praksisrettet FoU for barnehage, grunnoppl ring og l rerutdanning* [R&D focused on practice for daycare centers, primary and lower secondary education, and teacher training] from the Norwegian Research Council.

come from within the teachers themselves. Then they can feel free as teachers and, most importantly, the teaching activities can be located within their daily practice rather than outside. As mentioned above, the “from below” and the “from within” perspectives do not necessarily counteract each other. Furthermore, we have learned that teachers prefer to learn together in their daily practice. A collective practice will impede individualism (Hargreaves 2005; Lortie 1975) and contribute to teachers acting and reflecting in a learning community.

The aim of this article is to present a new model that visualizes the various levels of research and development work conducted in cooperation between teachers and researchers in schools. There are two reasons why this model is important. First, earlier models have not illuminated all levels that occur during R&D work. Second, the new model can be a tool for researchers cooperating on the development of practice as it includes possibilities and challenges with which they have to cope during all levels of the work. Before describing how researchers can work together to develop practice with teachers, we present several models that exemplify development and research activities and provide a historical representation of the visualization of research and development work in models. We have used these models, our experiences, and findings from our R&D work as a foundation for the development of the new model.

R&D work in theoretical models

Lewin’s work

Lewin (1948) was the first to use the term “action research.”² Action research is about changing practice, developing the understanding of the practice, and also changing the situation in which the action or practice occurs. Lewin (1947) also visualized action research as spirals of change consisting of planning, action, reconnaissance, and decision-making about the result. Based on Lewin’s work, we created a model using the terms planning, acting, observing, and reflecting as shown in Fig. 1 below.

Lewin (1947) documented that decisions made in a group or in a community can contribute positively to developing and maintaining changes in social practice. Lewin also pointed out that participants must become involved in all phases of the action research process. This appears to suggest that others become involved in this process meaning that practitioners are not the main actors. Lewin calls this a “democratic impulse.” If change and development are to come “from below” and “from within,” practitioners must identify with their work and must lead those processes taking place. In this way, the work becomes truly democratic and more than just a democratic impulse. If R&D work is carried out in cooperation between researchers and practitioners (meaning teachers in this context), equality is found in

² In this article, the constructs of action research and R&D work are used synonymously. In our opinion, both research and learning based on actions are part of the action research construct. Learning based on actions often leads to development of practice and, thus, both research and development of practice are integrated processes in action research and R&D work.

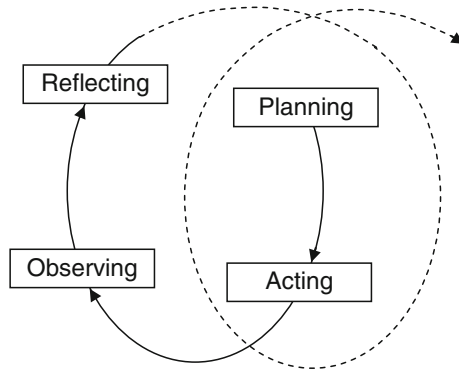


Fig. 1 A model based on Lewin’s work

positions when it comes to contributing expertise to the work. Work delimited within the research question may be formulated by teachers according to themes of their choice. Actions are guided through formulation of a research question with the assistance of the researchers.

Development in the present and future framework

Using Lewin’s spirals, Carr and Kemmis (1986) developed a model that places the change activity in a present and future framework. Concurring with Lewin, Carr and Kemmis maintain that group decisions must be a principle more than a technique in action research basing their point of view on both change and involvement. The actions and reflections around these are presented in Fig. 2 below from Carr and Kemmis’ work.

The figure shows that actions are planned and carried out between participants in a community which may lead to changes in practice and which also demonstrates that these actions are observed and reflected upon. In this way, the understanding of practice can be changed and developed. Carr and Kemmis point out the tension between retrospective understanding and prospective action in connection with the figure. One looks back and reflects upon actions that have been carried out with a view to include these experiences in further planning and action. We add to this the fact that Carr and Kemmis build on Marx’s theory (1967), maintaining that we are formed by the situation we are part of while we are also part of forming this

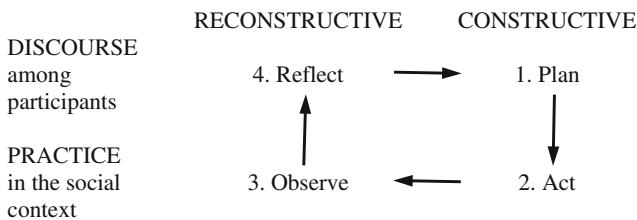


Fig. 2 Change activity in the present and future framework. *Source:* Carr and Kemmis (1986). Reproduced with permission from Taylor & Francis

situation. Thus, man is both a product and producer of history. An individual is part of the community in the same way that retrospective understanding, prospective action, theory, and practice have a dialectical relationship to each other. This dialectical view considers theory and practice as two areas that do not mutually exclude each other but which rather act in a mutually influencing relationship. We will return to the importance of theory for the development process later in this article.

Development of local theory

Elden and Levin (1990) also see the individual as part of the community. This is expressed through co-learning, the name they give to cooperation between researchers and teachers. Both expand their knowledge while the learning community of teachers and researchers undergoes change. Elden and Levin find that “goal” and “initiative” are two dilemmas in action research as evidenced by the following questions: Whose goals are to be reached, and who should take the initiative to do the necessary work? They claim that the practitioners’ involvement in action research helps moderate these dilemmas. As practitioners in action research are involved in the work and with practice being the point of departure, the knowledge that is constructed is context bound. At the same time, Elden and Levin work with both an action theory and a general theory, and they maintain that in any collaborative process, a local theory will also be developed. They define local theory as situation specific, but also maintain that it has been created on the basis of general knowledge and procedures in scientific studies. They also state that the development of local theory is reinforcing because those who create it learn why things are the way they are. In this way, practitioners become familiar with their own situation while the researchers also develop their understanding of practice. Hence, the local theory is created in the encounter between “insiders” and “outsiders,” or practitioners and researchers. The point of departure or framework for practitioners and researchers helps create this third framework, the local theory. This is shown in Fig. 3 below drawn from Elden and Levin’s (1990) work.

This figure suggests that practitioners can apply the collaboratively developed local theory in their practice to improve it and to further refine the theory, while this local theory is the point of departure for a general scientific theory developed by the researchers. The encounter between the two perspectives of theory and practice thus meet in a dialectic relation that may further influence practice and research. According to Elden and Levin, practitioners learn to learn in such a process. We add that both parties learn and develop their understanding in relation to their own perspective as well as the perspective of the other party in such a community. In scientific theory, the learning of practitioners or teachers is called action learning (Postholm 2007a, c, 2008a, b; Revans 1982, 1984; Tiller 2006). In our view, action learning is part of action research. Teachers learn on the basis of performed acts or actions, and researchers learn based on both the development work they take part in and the research work carried out in relation to these development processes. In Elden and Levin’s model, the dialogue between practitioners and researchers based on practice is placed in the center. They call this the “cogenerative dialogue.”

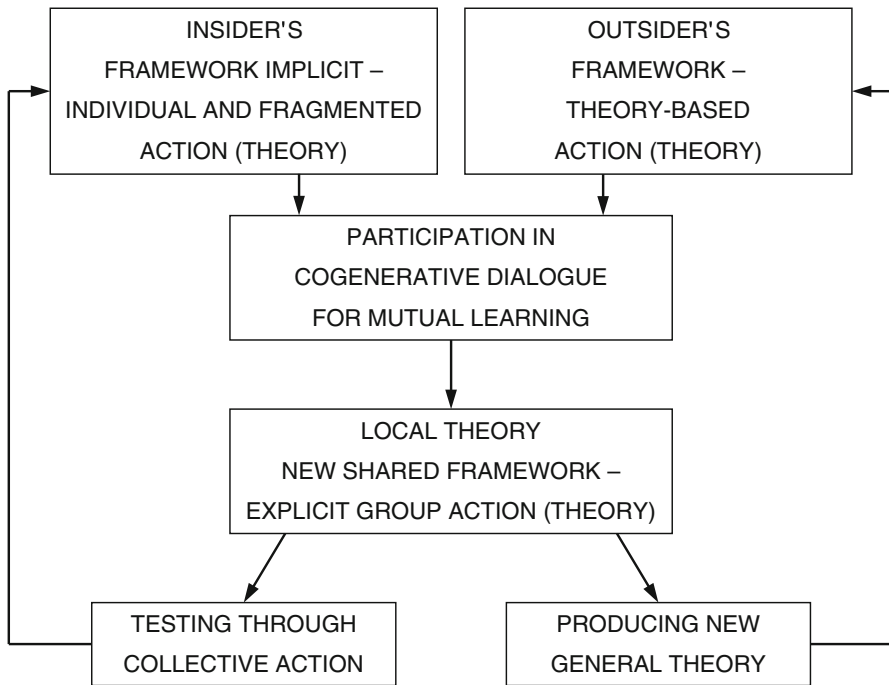


Fig. 3 Development of local theory. *Source:* Elden and Levin (1990). Reproduced with permission from Sage Publications

The expansive learning circle

Engeström's (2001) expansive learning circle (see Fig. 4) visualizes the development processes in practice. Thus, this is a model showing how development is facilitated and carried out in practice. As part of the preparatory work for actions in practice, historical analyses are also used in the development process. This emerges from the circle presented in Fig. 4 below.

The figure shows that to begin with, researchers and research participants question existing practice. According to Engeström, there are some tensions or conflicts that must be dissolved or resolved.

We also add that possibilities exist for making a good practice even better without starting with tensions or conflicts. To progress in the development process, Engeström (2001) proposes that historical analyses be used to supplement analyses of existing or current practices. In this phase, practice is analyzed according to the discovery and definition of problems, tensions and conflicts, and their causes. These analyses then form the basis of a resolution plan for the conflict/tension or program/plan for further development. In the next instance, the plan is then reviewed critically before it is implemented in the actual practice. The action processes representing newly introduced practices are reflected upon prior to being consolidated, thus becoming part of the practice. If solutions or plans do not function according to the intentions, they may be rejected or new plans made.

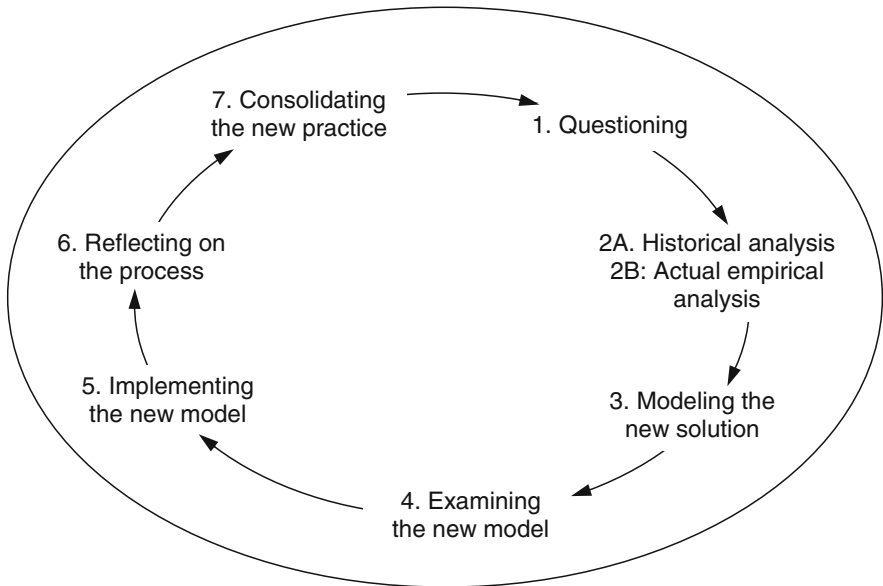


Fig. 4 The expansive learning circle. *Source:* Engeström (2001). Reproduced with permission from Taylor & Francis

Questions may then be raised in relation to the current practice. The activity can then be moved into new development circles with other areas of focus. Thus, the development circles form the basis for development spirals that expand and lead practice to new changes meaning that the development process is in continual movement.

In our view, Engeström's (2001) expanding learning circle shows the development process and not the research process in the community of development. It does a good job of demonstrating the phases of the analysis of practice, implementation of planned actions, and the reflection on these that can lead to consolidation of practice. However, it does not show how these processes are researched. We can see how the researcher moves on a meta-level in relation to the development processes in Coghlan and Brannick's (2005) model which is shown in Fig. 5 below.

A picture of research and development

The point of departure for Coghlan and Brannick (2005) is to examine the context of a project asking about its significance. They define the external context as being comprised of financial and political factors. They also include as part of this context social forces that are found to be instigators of change. In relation to the internal context, they see cultural and structural factors as crucial. In schools, political stipulations and the curriculum in force as a political compromise comprise part of the external factors. Moreover, external frames such as the national and local economy and local conditions (e.g., an increase in the crime rate among young people) will also have an impact. In-house factors at schools with the potential of

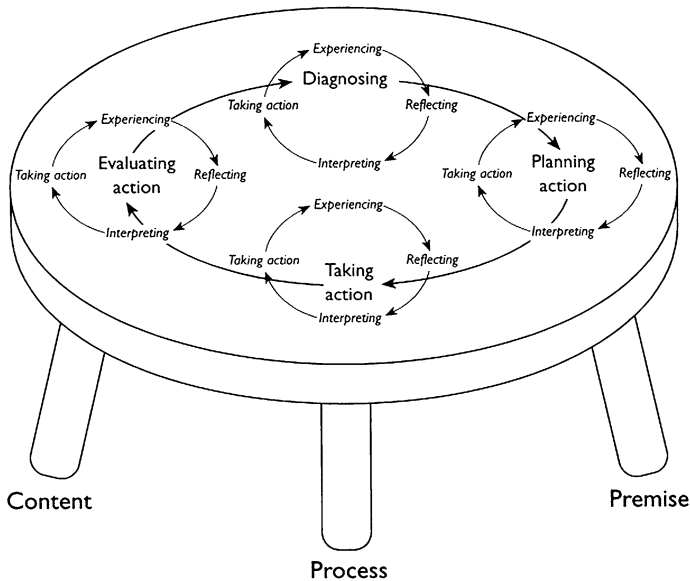


Fig. 5 Coghlan and Brannick's two action research circles. *Source:* Coghlan and Brannick (2005). Reproduced with permission from Sage Publications

influencing development processes include the culture for learning among teaching staff and structural conditions such as the physical design of rooms and scheduling. Coghlan and Brannick also emphasize that development projects must have clear intentions or goals and participants must see the goals as useful if they are to expend their energy on reaching them. They point out that participants must feel ownership in relation to the research question and that development should occur in a cooperative process. This fits well with the idea that development should come “from below” and “from within” (Elmore 2004; Freire 2005; Hargreaves and Fullan 1998; Louis 1998; Postholm 2007a, c, 2008b).

Coghlan and Brannick (2005) refer to Zuber-Skerritt and Perry (2002) saying that there are always two action research circles, the core action learning circle and the reflection circle, that operate at the same time. Coghlan and Brannick present a circle similar to Lewin's as the core circle of action research. They use the concepts of diagnosis of the now-situation before the work goes into planning, action, and finally evaluation of the action. From this, practice can be changed and new research questions can be formulated for moving into new development circles. Inside the reflection circle, reflections are made on the activity carried out in the core circle. This reflection represents a learning process based on the development and learning that has already taken place or in other words, meta-learning occurs. Coghlan and Brannick show that “what,” “how,” and “under which circumstances” must be included in the reflections containing both the external and internal context. This means that the content, procedure during the development process, background, premises or possibilities forming the basis for the actions, and the nature of the developments in relation to the stipulated goals must be included in the reflections.

According to Zuber-Skerritt and Perry (2002), the reflection process in the reflection circle forms the basis for the final research text. This reflection ties together research and action, or the research and the R&D work. The content of the research text may move in a dynamic process between the action level and the reflective meta-level. During this writing process, there is continual interaction between theory and the practice that is being researched (Postholm 2007a). Thus, theory and practice assume a dialectic relation as expressed by Elden and Levin (1990). Both practitioners and researchers working together in a community are able to move up to the level illustrated by the reflection circle. Based on our experience, we can say that conditions are facilitated for researchers to also be instigators in relation to elevating reflections to a meta-level if teachers and researchers reflect together. It is precisely in this encounter on a meta-level that researchers and practitioners can develop local theory, the term applied by Elden and Levin (1990) for the encounter between theoretical concepts and practical actions.

Even if Coghlan and Brannick’s (2005) model includes both the development and research process, it does not give a complete picture of our insight into and experience with R&D work with respect to the researcher’s role. Using the models presented and experiences from R&D activities, we developed a model that shows that processes also occur on a third level during this type of work. Even though research is always interwoven with development work, no model has made the research work explicit. During R&D work, the researcher constantly moves back and forth between development processes and research on these processes. Our new model provides researchers with a tool to increase awareness of these processes and the positions they have in various parts of R&D work. Before coming to this, we examine the model step-by-step. This presentation shows specific examples from

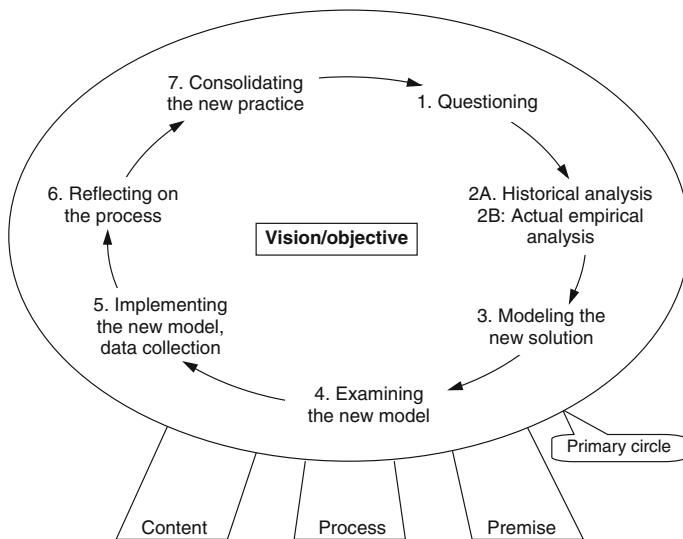


Fig. 6 The development process

the above mentioned R&D project. Figure 6 illustrates the development process that we are describing.

R&D work that has been experienced step-by-step

The development process

As can be seen in the model, we have taken as our point of departure Engeström's (2001) learning circle (see Fig. 4) and name this the primary circle. The initial step in the process is that questions are asked relating to the current practice. Such a starting point, therefore, often leads actors to address areas of interest in which they would like to develop. So far, at least, we can call this a democratic process. In our project, the school administration wanted teachers to select areas of concentration from the curriculum in force so that this would be integrated in practice in a good way. The teachers found an adequate number of topics of interest.

One of the democratic principles underlying the project work method is, according to Dewey (1902, 1916, 1938), that pupils should develop questions themselves. Dewey also emphasizes that there must be interaction between the content to be learnt in school and the research questions pupils arrive at based on their interests. This can, in our opinion, be transferred to the teachers as they learn about and develop themes in the teaching situation that lie within the scope of the pupils' learning goals and targets. Thus, the teachers' learning can also yield an increase in learning dividends for the pupils. Following the formulation of the research question, the work enters the next phase which involves both historical and contemporary analyses.

In the above mentioned project where the teachers arrived at a research question dealing with learning strategies and varied work methods, the learning activities in the classroom and the pupils' learning were in focus. This research question functioned as an overall goal or vision for teaching sessions in the classrooms which in turn received focus from more restricted questions or sub-goals in relation to specific teaching sessions. We will return to this. In formulating research questions, we say that the teachers "prolected." Everyone is familiar with the term "reflect." The word reflection stems from Latin (*re-flectio*) which means "to turn" (*flectio*) "back" (*re*). It involves thinking back on something that has happened or was stated. When research questions are developed, we think forward in time about something that should be done in the direction of visions and goals. "Pro" in Greek means *forward*. Prolection then means to turn forward.

In conversations and analyses of how the situation had been, we found that teachers in lower secondary schools are more or less stuck in the experiences phase. They often discuss the same matters without progressing or moving forward. One of the teachers stated, "We get stuck on things. We discuss the same themes over and over, and we don't move forward." The historical and contemporary analyses are intended to form the basis for upcoming actions designed to develop practice moving it forward. In the third phase of the work, a new plan is developed. When preparing this new plan, the thoughts are directed both to the coming activity and to

what is already experienced with regard to the theme in focus. We can say that a process of “reprofection” is taking place meaning that a dialectic relation between the past, present, and future exists.

A total of 12 teachers in lower secondary school carried out both phase one and phase two which consisted of asking questions and carrying out historical and contemporary analyses together. When they started planning various new solutions in their teaching practice, they primarily worked individually but also had colleagues in the class team provide feedback and analysis of their plans. The review of the new solution or plan as the activity in phase four was, thus, carried out individually or in collaboration with colleagues. When the plan was to be carried out, however, the scheme called for all teachers to collaborate with other colleagues.

Reflection of different levels

The teachers in the lower secondary school cooperated both on the individual year levels and in the large team consisting of all teachers from all of the lower secondary school year levels. This cooperation was generally focused on pupil matters and practical chores and challenges that needed planning and resolution. However, teachers also felt they needed time to cooperate on the subjects since they often felt as if they were going in circles and not making progress by discussing anecdotal experiences of pupils. “We can develop instead of just talking about pupils, which is a rut I think we sometimes get stuck in,” one of the teachers said. After they had decided on a joint research question, they also agreed to cooperate in subject teams where the focus was on concrete teaching practice with pupils’ learning as the main goal. Based on the teachers’ wishes for cooperation, the researcher designed a cooperation plan. This plan was implemented at the start of the second term of the cooperation between the researcher and the teachers and was used as the framework for observations and reflections in the three subsequent terms.

Collection of information

In initiating the R&D work, the researcher instructed the teachers on ways of collecting information. They were shown how to record continuous observations and immediate thoughts or interpretations. One suggested method included dividing pages of a regular notebook vertically into two. The left column was used to note direct observations that were seen and the right column to write down thoughts and interpretations that came to mind along the way. The teachers were also introduced to interviews, questionnaires, and pupil logs as aids in obtaining the pupils’ perceptions of the teaching when such information was desired for developing practice. Teachers were also encouraged to keep logs of their own teaching sessions.

There is much literature that supports the idea that writing leads to clarification of thought. Tiller (2006) states that writing is the best way of seeing one’s own teaching clearly and identifies it as being useful for developing teaching. Vygotsky (2000) considered language to be the most important tool in awareness raising processes believing that thoughts come to light, are processed, and developed in the

writing process. Møller (1996) defines three levels of reflection. On the first level, thorough consideration is weak and invisible. It is closely connected to the action, and can only be fully understood when the action is followed from close range. On the second level, unexpected problems may come into focus, and these are communicated on the “aha” level. On the third level, communication is defined as continuous and systematic. While the characteristic features of reflection on the second level are spontaneity and crisis, careful consideration is part of the norm on the third level. Møller mentioned keeping a diary in this context. Thus, writing down information that has been collected within the framework of research questions helps make the work in practice more systematic meaning that it is studied through the eyes of research. Hence, there is reflection in practice even after the teaching sessions have taken place. This, then, is reflection “in” and “on” practice (Schön 1987). Below, we shall examine in more detail what constitutes reflection after the teaching. We then enter the sixth phase of the expansive learning circle.

The form and content of reflection conversations

The content and form of reflection in the teachers’ subject teams after each of the teaching sessions changed over time as the teachers became familiar with the conversation, situation, and their own practice. We will, therefore, describe these change processes and how the researcher’s assumptions about reflection meetings needed to be modified.

Initially, the conversations were quite rigid in form. Participants were expected to speak in turn so that everyone had an opportunity to be involved with the observed teacher speaking first about his or her perceptions of the specific teaching experience. In their comments, teachers would then draw attention to the areas in which they wished to receive feedback. They might, for example, wish to have feedback on how they saw the learning activities for the weaker pupils and how the activity level of these pupils could be raised. In these conversations, the teachers who had observed their teaching would then initially offer positive comments on what they saw. They could say such things as, “I think you started the lesson in a good way;” “You managed to involve the pupils;” and “You varied the activities during the lessons, and I really think you kept the pupils motivated.” The second question in the example asks for good advice, and precisely, a round of constructive advice and tips would follow the introductory confirmatory round of comments. “I think you can let all the pupils read one sentence each,” one of the teachers recommended. In the first term with observation and reflection, the teachers were not encouraged to challenge each other in terms of the teaching situation. The relation between the interlocutors may, therefore, be called symmetric relations (Bateson 1972) indicating the focus as providing positive confirmation within the group relationships. It also seemed necessary to have a session where everyone was allowed to observe and reflect together so that insight could be gained about everyone’s teaching. This also made the teachers more comfortable with each other. “We’ve gained more insight into our colleagues and the pupils. We trust each other even more and support each other,” one of the teachers stated.

During the next two terms, the content of these conversations was expanded. In these conversations, teachers also challenged each other with questions on specific, observed practice. One of the teachers asked her colleague, “But have the pupils learned anything?” In this way, she challenged the teacher to support the utilized teaching methods and approach. The relation between those who participate in these reflections can be called complementary relations (Bateson 1972). At this point in time, the teachers had become familiar with the form of the conversations and each other’s practice, and there was room for questions, theory, and theoretical concepts. Theories on learning were used to improve understanding and to give rationales for activities in the classroom. Concepts were included in the conversations so that over time, the teachers developed common understandings of theoretical concepts such as learning strategies and metacognition.

At the beginning of the reflection process, the researcher expected teachers to already be adopting and utilizing theories such as those focusing on learning, knowledge, and motivation. However, this assumption was challenged as teachers’ practices were not consciously centered on theoretical frameworks. Prior to the work, the researcher defined theory as part of her role. Together with the teachers, she wished to place practice within a theoretical context. However, the teachers first needed to familiarize themselves with their own practice and that of others before they found it natural to integrate theory into their reflections. The teachers stated that in time, theory was found to be a natural and useful part of the conversations. They found that theory could help them by providing useful frameworks of analysis and rationale within their teaching practices. Hence, they saw a dialectical relation between theory and practice. R&D work shows that if theory and practice are to supplement each other, practice must first be highlighted before it is combined with theory in the reflections. In this way, local theory, to use Elden and Levin’s term (1990), is created.

R&D work provides analysis of the premises behind the activity where the focus is on both content and work processes. This is also the basis for the three columns used by Coghlan and Brannick (2005) identified as “content,” “process,” and “premise,” and shown as pillars in Engeström’s modified expanding learning circle (see Fig. 6). These factors are represented in all the phases and levels of R&D work. This also applies to the circle placed centrally but above the modified expanding learning circle. We call the modified expanding learning circle the “primary circle” (see also Fig. 6) because it represents the core activity in practice and the development of teaching. In the circle placed above the primary circle, reflections occur on the specific development processes represented by the primary circle. Thus, the secondary circle represents meta-reflections on all activity conducted in the primary circle. This is illustrated in Fig. 7 below.

A researcher’s view on development

In the circle on level two illustrating development, reflections occur around the activity in the “primary circle.” Coghlan and Brannick (2005) state that this second level is the domain of the researcher. We agree that this elevates the specific activity to a meta-level, but we also see the importance of teachers being raised to this level

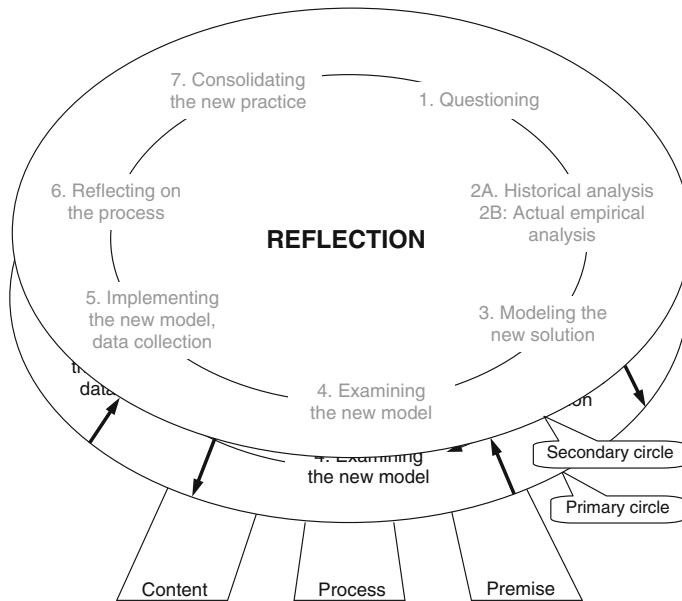


Fig. 7 The primary and secondary circles

in conversations on practice (illustrated by arrows both ways between the primary circle and reflection on the meta-level). In addition to reflection in and on specific practice, teachers experience reflection on the reflection if the conversation between the researcher and the teachers can be elevated to this level where meta-learning can take place. Teachers not only learn about modifying and developing their own teaching and that of others, but they also have opportunities to gain awareness and learn about the framework or context of the learning, processes involved, and the nature of the curriculum. This reflection applies to all phases of the primary circle and includes questions such as the following: How do teachers and researchers arrive at a research question? How is analysis carried out in relation to the past and present? What is required for planning and implementation of future programs? What are effective methods for data collection during implementation in order to analyze the effectiveness such programs? The phases of the primary circle suggest the importance of examination, reflection, and interpretation in developing processes for practice. We call, as mentioned, the circle on the second level the secondary circle because it represents meta-reflections on all the phases during the development work.

As we have found, there will be movement between the primary and secondary circles when the researcher develops research texts (illustrated in Fig. 7 by the arrows going both ways between the circles). The content of the research text may move in a dynamic process between the action level and the reflective meta-level. In the writing situation, the researcher situates practice and reflection upon practice in a theoretical context so that theory and practice are united in a final text.

We have found that a third level can be defined as part of the R&D work. On this level, the researcher brings all of the experiences and collected material to a meta-meta-level highlighting the activities that prove to be essential in the development processes without connecting these directly to the defined phases of the work. This level cannot be defined as a circle but can be described as a transparent plateau where the researchers view the R&D activities in their entirety (shown by arrows pointing to the third level in Fig. 8 below). On this level, researchers are not in direct cooperation with teachers, but the texts this research activity produces may impact teachers and their practice if the researcher brings them into the R&D activity or if they are read and reflected upon (shown by means of the dotted arrow that goes from the third level to the two circles in Fig. 8). Examples of articles based on research activity on this plateau are “Teachers Developing Practice: Reflection as Key Activity” (Postholm 2008a) and “The Start-Up Phase in a Research and Development Work Project: A Foundation for Development” (Postholm 2008b). As there is no direct cooperation between the researchers and practitioners on this level, we call it the “researcher’s plateau.” This is shown in Fig. 8 below. The figure gives a comprehensive picture of the R&D work we have carried out. We call this the R&D model.

Final comments

Reflection and profection are important processes in R&D work for developing practice. Experiences from completed practice are brought into planning future

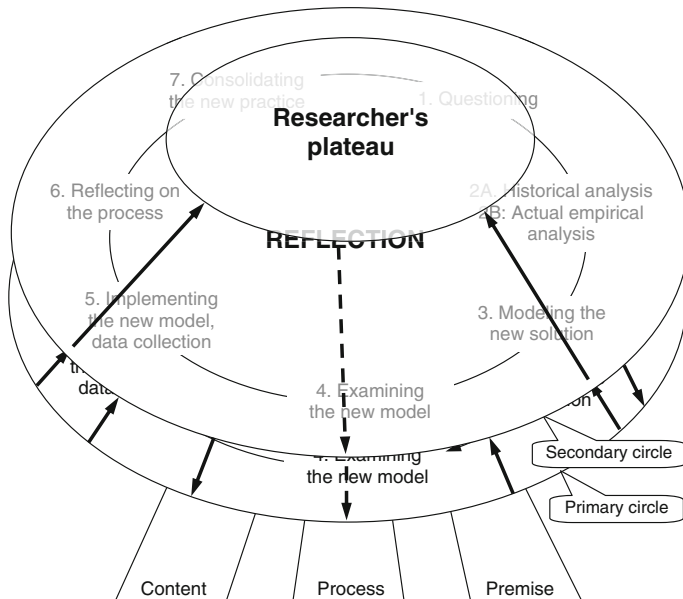


Fig. 8 The R&D model

practice. It is, therefore, in reproflection that practitioners can benefit from experiences building upon them. To make it possible to study themes in R&D work systematically, the work requires a focus. The theme or focus to be studied and developed in a systematic manner is often formulated as a research question and gives the work direction. The research question is often created in cooperation between practitioners and researchers with the emphasis being on the practitioners' areas of interest. In that way, the work is initiated from "below" and "within." In our opinion, this is the only way to lay the groundwork for successful progress of the work. The democratic impulse is supported by Sarason (1990) who states that school culture and symmetrical power relations between actors in schools are a prerequisite for development.

Even if teachers initially feel and identify trust among their colleagues, we have found that cooperative processes that are closely linked to their teaching may challenge their practices triggering apprehension. It is, therefore, vital that cooperative processes are structured so that the teachers over time become accustomed to challenging others' teaching practices and personally being challenged. R&D work shows that it may take up to 2 years before teachers internalize action processes utilizing themes of interest. Teachers in the lower secondary school found the development activities so meaningful that they wanted to spend their limited time on such work even after the researcher was no longer involved. Having a systematic overview of the learning activities became a meaningful part of their day-to-day practice and enabled continuous improvement.

Visualizing the processes of the R&D model provides a picture of how knowledge can be shared. The primary circle shows the development process which includes the sharing of knowledge among teachers, school leaders, and researchers in communities of development. In the secondary circle, the practice is lifted up to the meta-level as practice is reflected on by using theories as an analyzing tool. When the researchers move to a researcher's plateau which is transparent, they focus their research gaze telescopically. Their scope can thus be very narrow meaning that they are studying themes which are not necessarily included in phases represented by the primary and secondary circles. Texts developed on the basis of insights from this plateau situate the research community as the target group. Hopefully, this new R&D model will function as a tool for researchers in the development of practice in which both teachers and researchers can learn.

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