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PLEASE SCROLL DOWN FOR ARTICLE

'This baby…it isn't alive.' Towards a community of learners for vocational orientation

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The aim of this study is to contribute to the innovation of pre-vocational education, in particular, students' orientation at possible future occupations. From our theoretical understanding, vocational orientation that makes sense to students requires them to be part of a 'community of learners for vocational orientation'. In such a community, students are stimulated to learn deliberately while participating in vocational practices. In this article we distinguish four parameters to define a community of learners for vocational orientation. We then present the results of a collective instrumental case study into teaching-learning processes in four classes in two pre-vocational secondary schools. Data were collected through classroom observations, a series of interviews with teachers and students. The interviews focused on eight 'critical incidents' recorded during classroom observations. The results show that the parameters 'shared learning' and 'meaningful learning' are more manifest in the teaching-learning process than 'reflective learning' and 'a focus on transferable learning outcomes'. The article concludes with a discussion of the limits of working in simulated work situations in school for realizing effective pre-vocational education.

1. Introduction[1]

Government policy and educational research documents in Europe point out the problems vocational education is currently faced with in realizing its goals (Guile & Young, 2003; OECD, 2005). Students show an increasing disaffection with school, resulting all too often in them dropping-out. As a consequence, achievement levels in vocational education are low. The Netherlands is no exception in this respect. In fact, in comparison with other European countries, relatively few students achieve upper secondary and tertiary level qualifications (OECD, 2007).[2]

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Secondary education reforms undertaken in the last decade have aimed at optimizing pre-vocational learning by better fulfilling the learning needs of youngsters. One way of doing this is to improve the relation between theory and vocational practice. As in other European countries, engaging students in work-related assignments is seen as providing a context that can make learning more meaningful to these students (Stern & Wagner, 1999; Guile & Young, 2003). Such a context offers opportunities to develop students' general competences and initiate the development of basic vocational competences. Learning environments organized around the work sphere may appeal to students' affinities, abilities and possibilities regarding future vocations and associated continued education. Students will be stimulated to vocational orientation to be able to see the point of learning and, as a result, to reach high achievement levels.

Vocational orientation that makes sense to students is not self-evident in every work-related learning environment. In our view, such vocational orientation requires at least two ingredients: direct contact with various aspects of vocational practices; and resources, space and intellectual instruments for reflection on participating in these vocational practices. In this article, we argue that combining the concept of communities of learners (Brown & Campione, 1994) and the concept of communities of practice (Lave & Wenger, 1991; Wenger, 1998) can offer a starting point for a better theoretical understanding of the teaching-learning processes intended and, subsequently, for the design of innovative learning environments in pre-vocational secondary education. After all, members of communities of practice operate in vocational practices and communities of learners aim at deliberate learning by means of reflection.

In the first part of this article, we discuss some issues associated with combining the concepts 'communities of practice' and 'communities of learners'. This exercise results in a theoretical framework consisting of four parameters that define our conceptualization of a community of learners for vocational orientation. In the second part of the article, we present a case study. We examine whether and, if so, how the parameters of our theoretical framework of a community of learners for vocational orientation are manifest in the teaching-learning processes in pre-vocational secondary education in the Netherlands. Finally, we discuss the potential of the theoretical framework for the innovation of learning environments in pre-vocational secondary education.

2.   Context

The Dutch secondary education system encompasses separate schools for pre-vocational secondary education and for general secondary education (see Figure 1). Both types of education are for students from age 12 and consist of a core curriculum in the first phase (basic secondary education). Sixty percent of all students enter pre-vocational secondary education.

Until 1999, junior vocational education, as it was called, was presumed to be final education for most of the students. It focused on vocational training in order to
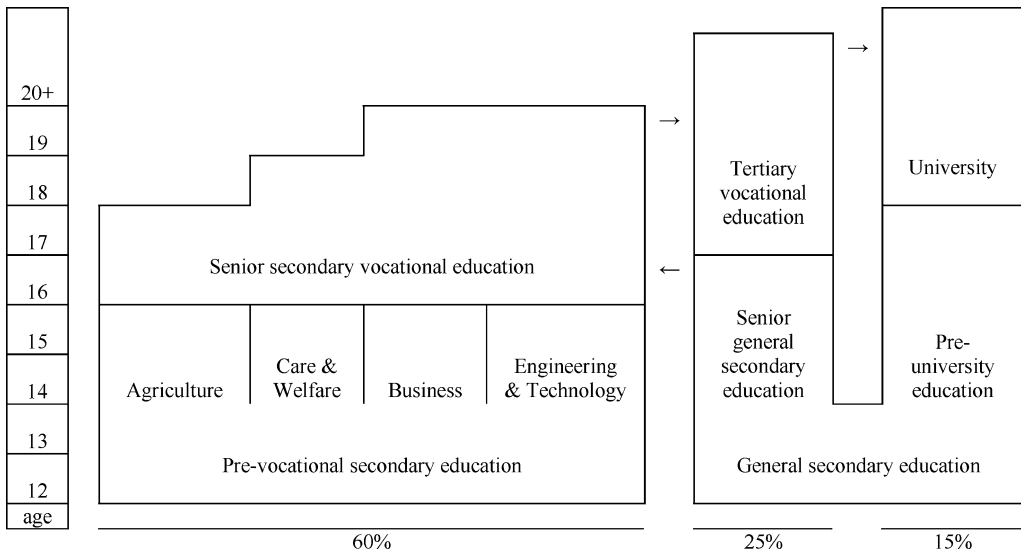
Figure 1. Overview of the Dutch system of regular secondary and tertiary education

prepare them for the labour market. In light of the ever-growing demand of the labour market for senior secondary and tertiary vocational education graduates, however, it became an important goal to encourage students to move on to higher secondary school levels. This change in educational policy induced the innovation of pre-vocational education in the Netherlands. The central aim became to raise the level of students' general competences and to prepare them for senior secondary vocational education. Vocational orientation became a crucial aspect of pre-vocational learning. In order to realize this aspect, learning should not focus primarily on mastering vocational skills anymore, but rather on exploring a professional identity as part of a student's personal identity. What does it mean to me to work in this sphere, do I have the necessary qualities for working in this field and am I willing and able to develop into a professional in this sphere of work? (Meijers & Wardekker, 2002). The curriculum was reorganized around four broad spheres of work as contexts for learning: Engineering and Technology; Care and Welfare; Business; and Agriculture. After finishing the first two years of basic secondary education, students could continue their education in one of these vocationally contextualized sectors.

Nowadays it has become a common practice in schools for pre-vocational secondary education either to send students to workplaces outside the school or to simulate workplaces in the school in order to get a feeling for working in a particular vocational area. However, 25% of all students that enter senior secondary vocational education still have not developed a vocational perspective at all and another 25% only partially (Neuvel & Van Esch, 2006). Real workplaces are usually not designed for learning and simulations are often not based on a thorough knowledge of the aspects of the workplace that must be included in a simulation. Leaving out social and cultural aspects, for example, may carry the risk that attention is only paid to the

technical aspects of working in a specific area. Even more important, it may be difficult in such situations to let students experience that theoretical concepts are tools to think with and to distance themselves from the immediate exigencies of the work situation. Such distance is crucial for reflection on affinities and abilities regarding work areas and vocations. Effective vocational orientation requires learning environments that are well designed.

3.   Communities of practice and communities of learners

Both the concept of a community of practice and of a community of learners may contribute to a theoretical understanding of teaching-learning processes that may guide the design of learning environments for pre-vocational learning. The concept of a community of practice gives expression to learning as embedded in a sociocultural context. And the concept of a community of learners provides insight in more deliberate learning, i.e. ways to stimulate students to distance themselves from practical situations and develop an inquisitive stance. In this section, we first present both concepts and then combine their main features in a 'community of learners for vocational orientation'.

Communities of practice

The notion of a community of practice is central to a sociocultural perspective of learning. Wenger (1998) has described a community of practice as a group of people who share a certain domain, like interests, a set of problems or a passion. The group explores and develops its specific knowledge and experiences within this domain, thereby creating a joint perspective and a sense of group identity. Community members build relationships that enable them to learn from each other. They help each other to solve problems and discuss their situations, aspirations and needs. They think about common issues, explore new ideas and serve as a sounding board. New, initially peripheral members may gradually become experienced, core members of the community. The members interact for the benefit of a shared practice: a set of frameworks, ideas, language, tools, routines, rituals and history. Besides a shared practice, history and identity, every member develops his or her own speciality and unique identity with respect to the community.

Participating in shared endeavours with others evokes learning as a socially and culturally situated, constructive process (Rogoff, 1994; Salomon & Perkins, 1998). From that point of view, a well-functioning community of practice is in fact a social learning system. In this system, members' participation in the practice of the community is not only shared but also meaningful as the community practice takes place in authentic situations. Wenger (1998) considers learning to be the process of becoming a core member of the community. Peripheral participation often tempts to implicit reflection on the practice of the community and members' own participation in this practice. Such reflection will lead to a transformation of personality:

newcomers become core members who, on the basis of what they have learned, are able to participate adequately in more than one situation.

Learning can, more generally, be seen as participating increasingly more competently in the practices of one or more communities, or as a process of transformation of participation in which responsibility and autonomy are increasingly desired. However, in our societies part of youngsters' learning process has been removed from societal practices and relegated to schools. This is not only a change of place; it also entails a transformation of content, motivation and success criteria of teaching-learning processes (Ten Dam *et al.*, 2004). This is not always a positive transformation, as the case of Dutch pre-vocational secondary education shows. In our view, pre-vocational secondary education may benefit from re-establishing the link between education and authentic issues in society, i.e. from organizing teaching-learning processes as they are instigated in a community of practice. However, merely applying the concept of a community of practice in education also poses a problem as the focus of a community of practice is on participation in the common practice, not on learning. Although opportunities for reflection and learning for transfer are present in a well-functioning community of practice, a focus on deliberate learning is needed to make use of these opportunities to full advantage. This is where we turn to the concept of a community of learners.

Communities of learners

The concept of a community of learners does assume intentionality for learning. The concept was proposed and put into practice by Brown and Campione (1996). In their model 'Fostering a community of learners' students are engaged in a recurring research cycle of (1) carrying out research in small groups on central topics of a subject area, with each student specializing in a particular sub-topic; (2) sharing what has been learned with other students in the small group and with other groups; and (3) working on a new, consequential task that requires students to combine their individual learning so that all class members come to a deeper understanding of the main topic and the sub-topics. This way, students are stimulated to develop an inquisitive stance.

Many educationalists build on this model (see, for example, *Journal of Curriculum Studies*, 36[2]). In most variants of a community of learners, sharing of what has been learned is scaffolded by instructional methods based on principles of cooperative learning (Johnson & Johnson, 1999) like reciprocal learning and the jigsaw method. The activities are structured so that students are involved in ways that are meaningful for them, i.e. that allow them to have a share in steering the teaching-learning processes and understand the purpose of the activity. Usually the basic activity is doing science-based research into the so-called 'big ideas' of an academic subject (e.g. evolution). Students learn that big ideas represent ways of thinking about practical situations. They are stimulated to reflection, i.e. to distance themselves from the practical situations and to solve a problem derived from real-life situations by using the big ideas as 'tools for thinking'. In that way, big ideas as

elements of science-based research practice should become transferable. Students should be able to explain the big ideas and to make flexible use of them in a variety of tasks (Campione *et al.*, 1995).

The concept of a community of learners encompasses important elements for designing vocational orientation in pre-vocational education. It provides ways to stimulate students to distance themselves from practical situations and use subject matter as a 'tool for thinking'. In theory, in a community of learners students will develop an inquisitive stance. However, it also raises some questions. Is it possible to find big ideas in all subject areas, as Shulman and Sherin (2004) have argued? It may not be coincidence that almost all the available descriptions of such school practices are in the areas of science. Moreover, are students in pre-vocational secondary education able to connect these rather abstract ideas to societal and cultural practices in which they themselves may become engaged? It is questionable to what extent working with disciplinary 'big ideas' in a community of scientific researchers is relevant to their future lives. These questions made us return to the concept of a community of practice. We propose that learning in school should not only be related to academic practices. Communities of learners must be attentive to various kinds of cultural practices and their associated communities.

Combining the two concepts: a community of learners for vocational orientation

In our view, both the concept of a community of practice and of a community of learners are necessary for a theoretical understanding of teaching-learning processes regarding vocational orientation that may further the development of innovations in pre-vocational secondary education. The concept of a community of practice led us to the idea of learning as participating in an increasingly more competent way in vocational practices. The concept of a community of learners focuses on more deliberate learning that offers students opportunities to distance themselves from practical situations and develop an inquisitive stance. The two concepts converge in a 'community of learners for vocational orientation'. Such a community gives shape to education as a 'second generation apprenticeship system'.

A second generation apprenticeship system combines the advantages of the old system of apprenticeships (direct contact with a cultural practice) with those of the modern school (distance from societal and commercial requirements, availability of resources, space and intellectual instruments for reflection). In such a system students participate in cultural practices. They are confronted with the necessity to make action decisions that have both technical and ethical aspects. Their actions are guided and enabled by material and mental 'instruments' that reflect the experiences of the cultural community until then. In a second generation apprenticeship system, cultural practices are re-presented in such a way that their essential elements are conserved, but actual peripheral participation by non-skilled participants like students becomes possible. Critical reflection on the nature of practices and students' own relation to it is essential, not for the goal of becoming 'central' or skilled participants, but to enhance identity development (Wardekker, 2004, p. 10).

A community of learners for vocational orientation is a concrete realization of a second generation apprenticeship system towards vocational practices. It helps students to develop an inquisitive stance towards their affinities, abilities and possibilities regarding the vocational practices they are introduced to. It enables them to distinguish directions in which they are willing and able to develop themselves in order to become professional workers and take their place in society.

Four parameters

We derived four interrelated parameters from our theoretical elaboration to describe a community of learners for vocational orientation: (1) shared learning; (2) meaningful learning; (3) reflective learning; and (4) a focus on transferable learning outcomes.

Shared learning is the first parameter. It refers to a learning environment in which students jointly strive to reach a shared goal. In a community of learners for vocational orientation, students and teachers work co-operatively as if they were colleagues working at an institution or company helping their clients. They are regarded as peripheral members of a community of vocational practice. As in any community of practice they interact and share knowledge to attain their goal, thereby acquiring new knowledge, skills and attitudes, both individually and as a group (Lave & Wenger, 1991; Rogoff *et al.*, 2001).

The second parameter is *meaningful learning*. This takes into account the use of what is learned for society and working in that society in the future, on the one hand, and for students personally, on the other. Students are supposed to develop competences in school that are indispensable to and for our society. Nevertheless, students do not always understand the meaning of developing these competences in the light of their own personal goals and lives. In a community of learners for vocational orientation, students participate in authentic vocational practices with others. They thus frequently experience not being able to participate fully in these practices due to faulty or missing competences. It is this experience and the wish to join others (i.e. to be part of the community of vocational practice) that make students realize that the competences our society requires are in fact competences they themselves need.

Reflective learning, the third parameter, refers to the need for students to reflect on the content of what they are learning and the processes through which that learning takes place. A community of learners offers opportunities for reflective learning, as students are surrounded by fellow students and the teacher who, in order to achieve a shared goal, comment upon the students' ideas and what they do. Together they try to find better ways of thinking and behaving. 'Learning through participation' is not just a question of taking part; if students are to develop competences and a professional identity, the quality of participation must be improved through reflection. A community of learners for vocational orientation might prompt reflection on three planes. First, students are encouraged to reflect on the way they function and develop as a beginning professional in a particular sphere of work. Second, they should think

critically about the importance of a profession for society. Third, students are stimulated to realize what being a professional in a sphere of work means to them.

The fourth parameter is *a focus on transferable learning outcomes*. Precisely because vocational education explicitly aims at preparing students for professional activities in the future, it must also equip students with the ability to transfer from school to new situations in their own lives and vice versa (cf. Tuomi-Gröhn & Engeström, 2003). Students should be made aware that the concepts and processes they are introduced to are generative and useful across many settings (Campione *et al.*, 1995). In a community of learners for vocational orientation, students acquire competences in the context of their intended use, i.e. a certain vocational practice. In this process students construct new knowledge, identities, ways of knowing and new positions in the world. They become someone new (Beach, 1999). When they become aware of this, students are able to take their new selves to other contexts. They themselves are then the bridges between different settings. The implication is that students should be encouraged to reflect on *why* they are supposed to learn certain concepts or ways of doing things and *what* this has to do with their own lives as future professionals.

4.   Study design

Our description of a community of learners for vocational orientation shows an ideal picture of pre-vocational secondary education. Current educational practice does not meet this ideal. We developed our conceptual framework to determine what evokes and what inhibits vocational orientation and to identify starting-points for moving forward to the ideal. This requires the framework to be a useful instrument for mapping out current teaching-learning processes in pre-vocational secondary education. We applied our conceptual framework in a collective instrumental case study on the teaching-learning processes in vocational subject classes in schools for pre-vocational secondary education related to the sector Care and Welfare. By making a collective case study, our aim was to verify the usefulness of the framework in more than one setting. We wanted to contribute to theory building going beyond the individual cases without losing ecological validity (Stake, 1994). Our case study was instrumental since we did not aim to gain insight into the vocational subject classes as such. Instead, we aimed to get a hold on current teaching-learning processes with regard to vocational orientation. We examined whether and, if so, how the parameters that constitute our interpretation of a community of learners for vocational orientation are manifest in teaching-learning processes that take place in the learning environments of the classes.

Participants

We wanted to select cases with a high learning potential (Stake, 1994), i.e. cases that were likely to show several forms the parameters could take in teaching-learning processes related to vocational orientation. We chose four classes in two schools that may be called 'critical cases' (Yin, 2003). A class was considered to be a critical case

when the school had already started improving their learning environment by introducing authentic learning in actual or simulated workplaces. Moreover, these schools intended to integrate the theoretical and practical components of the curriculum. We considered this a prerequisite for the development of a community of learners based on the idea of a community of practice.

The first school is a school for pre-vocational secondary education with nearly 1000 students, mainly from the surrounding villages. It provides education in three sectors, namely Care and Welfare; Engineering and Technology; and Business, and also a theoretical track. About one-third of all students choose Care and Welfare. The second school provides pre-vocational secondary education and is coupled with a general secondary education school. Half of the almost 1200 students live in the town where the school is located and the other half live in the small villages in the surrounding area. This school provides education in the same three sectors and theoretical track as the first school. Less than one fifth of the students are in the Care and Welfare department.

We observed and interviewed teachers (*n*=4) and students (*n*=17) in four classes. Three of the teachers had at least 20 years teaching experience. The fourth teacher had been teaching for four years and had about 25 years of experience working as a professional in the Care and Welfare sector. All the teachers had been engaged in innovating the learning environments of their classes for at least four years. Moreover, they had started to organize teaching and learning in several workplaces both in and outside the school. The students were in their penultimate year of pre-vocational secondary education and were 14–15 years old.

Data collection method

The data collection was directed at the intended learning environments, the realized learning environments and the learning environments of the classes as perceived by teachers and students (cf Goodlad *et al.*, 1979). The *intended learning environment* was examined in a series of two or three semi-structured interviews with the teachers who taught these Care and Welfare classes. In the first part of the initial interview the teachers talked about how they designed the learning environments of their two classes in terms of learning goals, teacher roles, student roles, student assignments, learning materials and physical context (cf. de Kock *et al.*, 2004). In the second part of the initial interview they reflected on whether and, if so, how the parameters of a community of learners (shared learning, meaningful learning, reflective learning and a focus on transferable learning outcomes) were already part of the design of the learning environments. The series of interviews with each pair of teachers took about five-and-a-half hours. In addition, we collected documentation (like student material and lesson plans).

We then asked the teachers to select two lesson-blocks of three or four consecutive hours for each class that were likely to show 'critical incidents', i.e. episodes in which the parameters of a community of learners for vocational orientation are in all probability manifest in the teaching-learning processes that take place in the learning

environment. Observing these lessons gave insight into the *realized learning environments* of the classes. During the lessons we videotaped the instructional activities of the teacher(s) and the learning activities of students.

In addition, we examined the *learning environments as perceived* by students and teachers. For each class the video recordings of one to three critical incidents ($n=8$ critical incidents) were used as stimuli in interviews following the second lesson-block with a group of students and in interviews with the two teachers of each class and school. The critical incidents were selected by the researchers in dialogue with the teachers. For each critical incident the students were asked for their opinions concerning their learning activities and the teachers' instructional activities within the realized learning environment and for their perceptions of the way these activities affected their learning. The student interviews took about three-quarters of an hour. For each critical incident the teachers discussed whether and, if so, how in their perception the activities of students and teachers within the realized learning environments actually led to shared, meaningful and reflective learning with a focus on transferable learning outcomes. The teachers and the researcher took this discussion and the results of the student interviews as a starting-point for a brainstorming session on how to improve the learning environment so that it fosters the further development of a community of learners for vocational orientation. The interview, or as the teachers called them 'movie discussions', with the pair of teachers from each school took about three hours and was also recorded.

Analytic procedures

The learning activities of students and the instructional activities of teachers within the learning environments of the classes were systematically analysed during and following the data collection by means of matrix-display techniques (Miles & Huberman, 1994). The data on each class were analysed before combining the results of the analysis with those of the other classes. We built a three dimensional matrix display with the four parameters of a community of learners for vocational orientation (shared learning, meaningful learning, reflective learning and a focus on transferable learning outcomes) on one axis, aspects of a learning environment (learning goals, teacher roles, student roles, student assignments, learning materials and physical context) on the second axis and learning activities of students and instructional activities of teachers on the third axis. In the initial descriptive version of the matrix, transcripts of those parts of all the interviews and videotapes referring to critical incidents were entered in the cells. Due to the interrelatedness of the parameters of a community of learners, several of the transcripts needed to be entered in more than one cell as they referred to more than one parameter. This was remedied as soon as the initial matrix was reduced by condensing, summarizing and packaging the transcripts to their essential parts. During this process the revised matrix content was regularly checked against the raw data. A colleague researcher also occasionally reviewed the data reduction process. This finally resulted in an analysis of what happened in the classrooms with regard to the teaching-learning

processes: an empirically elaborated conceptual framework of a community of learners for vocational orientation.

5.   Results

In this section we will present the results of the case study by discussing one specific critical incident in one of the classes. We will show whether and, if so, how shared, meaningful and reflective learning with a focus on transferable learning outcomes was manifest in the teaching-learning processes that took place in the learning environment realized during this particular critical incident. Moreover, these results will be related to the other critical incidents analysed.

A critical incident: bathing a baby

The Care and Welfare lessons, in which all the critical incidents took place, are organized around simulated workplaces. The classroom is divided into five or six workplaces: Welfare, Housekeeping, General Services, Care Assistance, Beauty Care and Workplace Assistance. Each workplace is occupied by three to six students at a time. During three weeks for about 14 hours a week, students learn on the basis of theoretical and work-related practical assignments about what a real care provider might do in that particular workplace. Theoretical assignments may comprise reading an introductory case about a care provider and answering questions about it, looking up difficult workplace-related words, studying theory units (read the unit, underline the important parts and answer questions about it), filling out a form about their activities in the workplace and doing and correcting a diagnostic test. The practical assignments are more diverse. The critical incidents we found comprised the following eight practical assignments. The Housekeeping students cooked, tasted and compared home-made tomato soup with tinned tomato soup. The General Services students checked the temperature in and outside the refrigerator in the food storeroom. They also planned a week's menus for an old people's home and prepared shawarma (döner kebab). The Care Assistance students learned how to bath a baby (doll). They also made up a cot. The Welfare students prepared a snack for their classmates and went to the supermarket in a wheelchair to buy biscuits. A study guide indicated when to carry out which assignment. After three weeks, students went on to the next workplace.

During lesson observations we videotaped a group of three students working on a practical assignment in the Care Assistance workplace. The assignment involved bathing a baby and took about an hour. The students had to take the baby out of its cot, undress and soap it on the chest of drawers, rinse off the soap in a bath tub, wipe it dry, put on a nappy, dress it, and put it back to bed again. The students followed a worksheet drawn up by the teachers. One student read out each step of the worksheet. A second student carried out each step and a third student observed the second student's actions and gave directions and help when necessary. They then

changed roles. Now and then the teacher came to observe the students at work, give directions and answer questions. Once each student had bathed the baby, the teacher was asked to check what they had done. Finally, each student summarized the worksheet individually.

Bathing a baby as a shared activity

The students in this critical incident were involved in shared learning. This was apparent in their actions. They had to take on the roles of reader, practitioner and observer/aid, which they in fact did. For example, Peter waited for Ingrid's instructions, even though he had seen how Miriam bathed the baby a moment before. Moreover, Miriam fetched him a clean nappy when he could not find one. Shared learning was also evident in the students' conversation, like the moment when Peter put the baby in the bath:

> Ingrid: (reading the worksheet) Hold the baby tightly with your right arm under its head and your right hand around its arm.
>
> Peter: You mean left hand!
>
> Ingrid: Mm yeah, you're right. Unless you're left-handed…
>
> Miriam: Um, you should grip its arm, not just support its head and shoulders.
>
> Peter: Oh, okay.

The students really listened to what their fellow students said and gave an appropriate response. Later on, in the interview, the students made the following comments about working together:

> Peter: Working in a small group is just like playing in a football team—you work together as a team to win.
>
> Miriam: You can teach each other something about…For example, they can tell me something I don't know, and the other way round I can tell them something they don't know. So, together we know more then each of us alone.
>
> Peter: And you'll make fewer mistakes, together…you improve each other.

The students evidently appreciated the shared activities. The teachers, who were shown the video fragments, said they were pleased to see the co-operation, but also that this kind of shared learning was not always the case. They attributed the success in this case to the interdependent roles, the availability of only one chest of drawers and bath, and the explicit remarks they made in previous lessons about working together in a social way (i.e. principles of co-operative learning [Johnson & Johnson, 1999]).

Not only the students, but also the teacher took part in the activity of bathing a baby. For example, when the students could not find a thermometer to check the water temperature, she helped them out:

> Teacher: How could you measure it another way?
>
> Ingrid: With your finger.

Teacher: No, not with your finger, with your elbow. If your elbow feels comfortable, the water temperature is fine.

Peter: (tries it) It's fine.

Teacher: All right, now you try it (to the other students). Show me.

The teacher adopted the role of someone in between an experienced colleague and a teacher. However, the students did not seem to act like peripheral members nor treat the teacher as a core member of a community of workers in a day nursery. They seemed to perceive the teacher as a teacher only and to stick to their roles as students. Discussing this scene during the interview, they said:

Peter: Sometimes, when I don't have any questions, I find it annoying. You're doing fine, and then the teacher comes nosing around…

Miriam: Yeah, but you never know whether you're doing it right, so…

Peter: No.

Miriam: You never know as much about it, so she knows whether you're doing it right or not.

Watching the video of the scene, the teachers said they found it difficult not to interfere all the time. This could explain the students' persistence in maintaining a student role.

To sum up, the assignment of bathing a baby was constructed according to the principles of co-operative learning. The activities of the students and the teacher resulted in shared learning. The three students and teacher jointly tried to attain a shared goal: bathing the baby properly. However, the fact that the students did not act as if they were colleagues in a day nursery indicates that they could not regard themselves as peripheral members of a community of vocational practice.

These results are representative for all of the other critical incidents that prompted shared learning. In another critical incident, for example, four students had to prepare and compare home-made tomato soup with tinned tomato soup. The four students started by making a plan: who does what when. They then split up into pairs, one pair focusing on the tinned tomato soup and the other on the home-made soup. So the students had different tasks but a shared goal: to compare the soups, they wanted to serve and try both versions at the same time. This shared goal and the different tasks encouraged them to work co-operatively. Several times the students asked the teacher for advice. The teacher, however, referred them to their worksheet and recipes. One time the teacher adopted the role of an experienced colleague by showing how to chop leeks, but mostly she restricted herself to her role as teacher. This again prevented the students from regarding themselves as peripheral members of a community of vocational practice.

Bathing a baby as a meaningful activity

Bathing a baby seemed to be an authentic activity in terms of a real-life situation. The question is, however, whether it was a meaningful activity from the perspective

of students themselves. The workplace was well equipped as a day nursery with astonishingly life-like dolls, a cot, a chest of drawers, toys, baby clothes, nappies, baby shampoo, etc. The assignment comprised an activity that workers in a day nursery carry out every day. The teacher tried to encourage the students to treat the doll as a real baby by posing questions like: 'What's his name?', and 'Oh, look what he's wearing! That's a nice colour combination.' Luckily, however, the baby was a doll:

Teacher: Why don't you talk to the baby?

Peter: Talk to the baby? I don't know what to say.

Teacher: Well, 'I see you have a dirty nappy. What did you do, you little stinker!' (tickles the soles of the baby's feet)

Peter: Eh…(looks incredulous)

Teacher: In the final examination this year the baby was called Sam. And Sam had to be dressed, bathed and put to bed, and you had to talk to him, just like a real baby.

Miriam: Do you really have to talk to it in the final examination?

Teacher: You really have to talk to him. So, that's why you need to practise now.

Peter: For the examination.

Teacher: Yes, and for the future, of course. Do you think he'll be a good father? (to the girls)

Girls: Well…

Peter: Maybe with some more practice…

Teacher: Is he as good as you with the baby? Would you leave him alone with your daughter?

Girls: No! (laughing)

The teacher did not explain why talking to the baby is considered (in our society) to be part of good baby care. She did try to make it personally meaningful though, by anticipating the students' wish to pass the final examination and by making them imagine having a baby of their own. Later on, in the interview, the students said they considered the assignment to be useful because they might work with children or have children of their own in the future. Nevertheless, the students did not talk to the baby doll and they also were not very careful with it. It got soap and water in its eyes, they left it alone on the chest of drawers, they picked it up by its head and so on. In the interview the students were asked why they did not treat the baby with more care:

Peter: Actually, we had to, but we forgot…or we just didn't feel like it.

Miriam: I find it odd to talk to such a baby.

Peter: This baby…it isn't alive. It makes no sound.

Miriam: No, if it were a real baby, then…

Ingrid: Yeah, then it would be easier to talk to.

Peter: Yes, then I would be far more careful, because otherwise I might hurt the baby.

Obviously, the baby being a doll stopped the students from participating wholeheartedly in the practice of a day nursery. They did not see any point in treating the doll with care because they could not hurt it anyway. Watching the video, the teachers said they recognized the students' behaviour:

Teacher: But the funny thing is, when I asked, 'Were you able to enter into the role of care provider?', they said, 'Yes'. And then I asked, 'Did you do it seriously? Were you polite? Were you…', and they said 'Well, not really, but I will be in the final examination, and also when I do my work-experience placement, because when it's for real I will'. And they do.

Confronted with the students' remarks, the teachers mentioned that they realized that students are very self-conscious and afraid of looking silly in the eyes of their classmates. For future lessons they considered emphasizing even more that nobody looks foolish simulating a vocational practice.

This critical incident shows several elements aimed at provoking meaningful learning. Both the workplace equipment and the assignment were authentic. The doll, however, was not realistic enough to make the students participate whole-heartedly in the vocational practice. Furthermore, the critical incident was intended to make the students aware of the relevance of what they have learned to working in society in the future and teachers encouraged them to see the use of it for themselves in the future. It was questionable though whether the students did see the use of it for themselves at the present time. The teachers thought up the assignment and the students had no opportunity to set their own goals. As the students did not really enter into the role of care provider, they were not able to experience what it is actually like to work in a day nursery.

Almost all the other critical incidents showed similar elements. In an assignment to draw up a week's menus in an old people's home, for example, students had to work with the menu plans that a professional in such a home would use. The teacher helped them to form a clear picture of the home, the elderly people and their eating habits. Although the learning environment was designed as an authentic one, the students did not take the assignment seriously. They said they realized that their menus were not good, but that they did not care, as the menu would not actually be used. The students had no say in this assignment either. Three other critical incidents showed another element of meaningful learning. They involved students in a vocational practice in a way that provoked problems students could not handle without becoming more competent. In one of these incidents, three students had to go and buy biscuits from a supermarket with one of them acting as a disabled person in a wheelchair. By alternately being the one in the wheelchair and the one pushing it, the students discovered that it requires a special technique to push the wheelchair up and down the pavement in a way that is comfortable for the person sitting in it. This seemed to contribute successfully to meaningful learning. It engaged the students in a vocational practice.

Bathing a baby as a reflective activity

We observed three kinds of opportunities for stimulating reflection during this critical incident. First, the students gave each other feedback on their actions while practising bathing a baby. For example, when the students filled the bath with water:

> Ingrid: Is the plug in correctly?
>
> Miriam: Yeah.
>
> Peter: Put some more water in it!
>
> Miriam: No, first we need a thermometer. The water should be 37° C.
>
> Peter: But…(mumbles) you're right.

In the interview the students said they appreciated the comments of classmates as long as that classmate was a nice person. The teachers were proud of their students and of their own achievement, as they had put a lot of effort into teaching their students how to give and receive criticism in a friendly way at the beginning of the year.

The second kind of opportunity for reflective activity occurred when the teacher observed the students' actions and made comments:

> Teacher: What's this? A dirty nappy?
>
> Peter: Eh, yes.
>
> Teacher: What should you do with it?
>
> Peter: Throw it away…But there's not a rubbish bin here.
>
> Teacher: And why?
>
> Peter: Because it's dirty.
>
> Teacher: It is inadmissible on account of hygiene. So, what would you do next time?
>
> Peter: Look for a rubbish bin before changing a nappy.
>
> Teacher: Exactly.

By posing the right questions at the right time the teacher encouraged the student to reflect on his actions and the way he functions as a worker in a day nursery. However, it was questionable whether the students really engaged in reflective activity:

> Peter: If you don't let the teacher check on how you're doing it, and you have a practical test, you can be sure of a bad mark.
>
> Miriam: You don't know how to do it exactly, and most of the time you're doing it wrong.
>
> Peter: Yes, and she says, 'This way is better than that way'.

These remarks, made during the interview, suggest that the students tend to replace their ideas about what to do by those of the teacher without any further thought.

The third kind of opportunity consisted of summarizing the worksheet. But the students copied it instead of summarizing it. In the interview the students were asked if, and if so why, they considered making a summary to be of any use:

Ingrid: Yes, you can learn at home.

Miriam: Learn for next year. It's in the final examination, so…

Peter: By the time of the final examination, I'll have probably forgotten everything. So I can read this again, and then I'll remember it.

This was exactly what the teacher told them, and of course copying the worksheet does fulfil this purpose. However, the teachers had another reason for summarizing the worksheet. During the initial interview, they said they considered summarizing to be an activity that in itself helps students think about and, hence, remember, what they had learned during the assignment and how, i.e. they consider it to be a reflective activity. Unfortunately, it did not work out this way.

To sum up, this critical incident shows how a shared task like bathing a baby offers opportunities for reflective learning. Looking at the three planes of reflection we distinguished in the theoretical section, we see opportunities for reflection on the students' functioning as a beginning professional in the comments of fellow students and the teacher on their ideas, actions and behaviour. This leads to reflection, provided that students are willing to accept and critically analyse the remarks of others. The development of a critical stance on the importance of professions in Care and Welfare for society, however, was not clearly apparent. The same holds true for reflecting on the meaning of the position of a Care and Welfare worker in society to the students themselves.

The other critical incidents also underline the importance of a shared goal and a safe environment for giving and receiving reflective comments. Only five of the eight critical incidents showed that participating in a vocational practice stimulates students to reflect on the way they function and are developing as a beginning professional. In seven incidents the importance of professions in Care and Welfare for society and what the position of a worker in Care and Welfare in society means to students themselves were not thought about at all. The one exception was the assignment when students went to a supermarket in a wheelchair to buy biscuits. These students could imagine, at least to some extent, what it is like to be condemned to a wheelchair. They experienced, for example, how much help people in a wheelchair need from others. (The student in the wheelchair could not reach the biscuits on the top shelves by herself.) Pushing the wheelchair, the students realized they had to be indifferent to the fact that disabled persons and thus their carers attract attention and that they had to be quite patient, qualities they later said they did not possess. Thus, this assignment did invite students to think about the importance of caring for disabled people and about what being a care provider would mean to them. This kind of reflection improves the quality of participation.

Bathing a baby as an activity that promotes transfer

The critical incident of bathing a baby showed little evidence of a focus on transferable learning outcomes. As the comments repeated above show, the teacher did, for example, stimulate students to think about applying what they had learned in situations outside school ('Would you leave him alone with your daughter?'). She

also encouraged the students to think about why certain practical rules are necessary ('Why should you place a rubbish bin nearby when you change a nappy?'). When asked during the interviews, however, the students could not think of any situation other than bathing a baby in which they could use what they had learned during the assignment. Obviously, the students were not aware that competences like 'being able to interact socially with a patient or client' are generative and useful in more situations than just bathing a baby. When asked whether they would know what to do when they have a baby themselves, they said they did not know enough for that:

> Peter: For a bit yes, and for a bit no, because we only practised bathing a baby. We didn't talk about feeding a baby, walking with a pram or about teaching a baby how to walk and speak.

They did not feel more competent to do anything else but bath a baby. The assignment did not contribute to improving students' self-image and identity regarding competence. The 'bridge between different settings' had obviously not been built.

During the movie discussion the teachers admitted that they had never seriously thought about ways of realizing transfer before. This is, of course, difficult to ascertain from only one situation. Nevertheless, we do feel that this critical incident shows few elements of a learning environment that promotes transfer. Five of the seven other critical incidents show a similar picture: students are not stimulated enough to see the use of what they have learned in other situations and to see themselves as 'new' or more competent persons. The two critical incidents that did show some evidence of transfer were both cooking assignments, namely comparing home-made tomato soup with tinned tomato soup and preparing shawarma dishes. During the school year students have to cook many times. They are thus constantly told to follow certain rules, such as working hygienically by tying your hair back, washing your hands and so on. Another example is to make a plan of work so that you are sure every part of the dish or meal can be served in time. During the interviews the students showed that they recognized that these rules are useful in all cooking assignments. Obviously, making the applicability of rules or concepts explicit helps to promote transfer.

6.   Conclusion and perspectives

Our study aimed to optimize learning processes in pre-vocational secondary education. From a sociocultural point of view, we interpret learning as a mode or quality of participation in a practice. We elaborated a theoretical framework for analysing learning environments in pre-vocational secondary education, combining the concepts 'community of practice' and 'community of learners'. The framework comprises four interrelated parameters: shared learning, meaningful learning, reflective learning and a focus on transferable learning outcomes. In short, the concept of a community of practice led us to conceive of learning in pre-vocational secondary education as participating in an increasingly more competent way in the vocational practices of communities. The concept of a community of learners focuses more deliberately on learning that offers students opportunities to distance

themselves from the immediate exigencies of the work situation. The combination of the concepts entails a community of learners for vocational orientation in which participation and critical reflection are balanced. In such a community students are stimulated to develop an inquisitive stance that enables them to distinguish directions in which they are willing and able to develop themselves. Moreover, they are initiated to developing a professional identity (cf. Holland *et al.*, 1998). A community of learners for vocational orientation is a concrete realization of what we called earlier a second generation apprenticeship system; a work space (simulated or real) with opportunities for reflection on the effects of participation on personal development and clarification of possible choices (Wardekker, 2004).

In four classes we examined if and to what extent the parameters of our conceptual framework were manifest in vocational subject classes in schools that were already committed to introducing and using some form of 'authentic learning'. On the whole, our results illustrate the limits of merely working in simulated work situations in the school from the perspective of education that functions as a second generation apprenticeship system.

Our study showed that the first parameter, shared learning, was evident in all the situations. However, it almost invariably took the form of co-operation between students to reach a common goal; the teacher seldom participated in the activity except by giving advice. The fact that the teacher adhered to the standard teacher role kept students in a normal 'doing the assignment' role. The simulated work situations limited shared learning by focusing on technical aspects to the exclusion of social aspects of working in a specific area. In a community of practice, members socially interact in certain ways for the benefit of a shared practice. For example, experienced day care nurses show and explain to new colleagues how to work best and nurses share relevant observations of children with colleagues who take-over the child care. In the baby bathing case there was no experienced member as the teacher adhered to her standard role and there was no need to interact about child care for other reasons than to discuss what was meant by the technical steps of the worksheet. The students cooperated with each other as in a community of learners. But the principles for cooperative learning were applied with a focus on learning technical skills solely, not with a focus on learning to socially interact in order to reach a shared vocational goal as well. This was exemplified by the division of interdependent roles in reading out what to do, following the worksheet directions and observing.

The second parameter refers to the meaningfulness of learning. The students did see the use of being able to bath a baby for in the future, but not for the baby bathing assignment. They clearly had trouble interpreting the assignment of bathing a doll as a life-like situation, and thus to attach personal meaning to what they had to learn. This contributed to their pursuit of doing the assignment, rather than the pursuit of doing a professional job. This was also the case in most of the other critical incidents we observed. In fact, the simulated work situations confined students' involvement in the vocational practice. Communities of practice deal with situations in reality. Day care nurses, for example, work with

real babies and caring for these babies serves a real goal. This authenticity brings out involvement in the vocational practice. Being involved, in turn, incites community members to develop the competences needed for full participation. In contrast to the baby bathing activity, the wheelchair assignment did arouse students' involvement. As the students had to both push and sit in the wheelchair they experienced why it is important to be able to drive a wheelchair up and down the pavement with care. Although in a community of learners students' involvement in learning is evoked by allowing them to have a share in steering the teaching-learning process, we did not encounter this element in any of the simulated work situations.

In the baby bathing activity, as well as in most of other activities we analysed, reflection (the third parameter) took the form of thinking about whether the actions taken had been adequate and sometimes the form of students realizing what they had or had not learned. However, the simulated work situations impeded reflection on the meaning of a caring profession for the students themselves. This was due to the fact that there was no peripheral participation as in a community of practice. In the baby bathing situation, students had a worksheet from which they could deduct the norms with regard to technical aspects of adequate baby bathing. But they had no experienced colleague who could function as a role model, who they could identify themselves with. The situations also restricted reflection on the importance of professional care for society as the sociocultural context of a day care nursery was missing. For example, students did not meet parents who after a full day of work came to pick up their baby, something they would do in a community of practice. In the view of Brown and Campione (1996), a community of learners prompts reflection deliberately, for example by reciprocal teaching. It also offers opportunities for students to help each other reflect, for example by creating an atmosphere in which student comments are valued. Most situations we examined show these elements, although—as the baby bathing activity reveals—not always to the extent that realized the reflection intended.

Regarding the fourth parameter, transfer, students in the baby bathing assignment gave no signs of being aware of having learned something that could be used in a different situation. However, the teachers mentioned that students, although they did not recognize it, already practised competences in multiple settings. In all situations we examined, learning with a focus on transferable learning outcomes was limited. From the perspective of a community of practice, students missed the sociocultural context in which the specific vocational activity is embedded. The students learned how to bath a baby isolated from other aspects of child care. This made it hard for them to get a view of all aspects of caring for a baby and, thus, to get an idea of the usefulness of what they had learned and how competent they had become for other child care situations. Ideally, a community of learners aims at transfer by stimulating students to use what they have learned in a variety of situations and to see themselves as more competent. This requires reflection on what they have learned and how the concepts learned can be used as tools to think with. In

the learning situations we examined, tasks that explicitly incite students to flexibly use their newly developed competences were clearly absent.

The conceptual framework did enable us to get a hold on the teaching-learning processes involved in simulated work situations. In the critical incidents we examined only part of the elements of communities of learners and communities of practice were manifest. A community of learners for vocational orientation as an elaboration of a second generation apprenticeship system on the level of the teaching-learning process was not realized.

What would then be needed to fully realize a community of learners for vocational orientation? We concluded the interview with the teachers by collaboratively exploring how the learning environments could be improved with the four parameters as guidelines. The teachers in particular wanted to increase the meaningfulness of learning for their students and stimulate reflection. In relation to the baby bathing activities the teachers came up with ideas for making the activity more 'life-like' for students, for example by collaborating with a real day nursery where students could go, or by inviting staff and babies from a nursery to the school. This would create opportunities for direct contact with vocational practices, one of the pillars of a second generation apprenticeship system. The teachers assumed that this would also help students to imagine what it is like to work in a day nursery. Exploring a professional identity this way is in our view crucial to vocational orientation. Similar plans were made for students to organize an activity morning at a nearby primary school and a coffee morning for elderly people.

An idea for stimulating reflection on an activity as a professional situation was to ask students to make a worksheet for the baby bathing activity for fellow students at the end of the lesson. This would include photos taken by the students showing how to bath a baby. It would help them to become aware of what they have learned and in the process structure their learning experiences. Such pedagogical space for reflection is the other pillar of a second generation apprenticeship system.

The teachers' reflections show that our conceptual framework not only enabled us to get a hold on teaching-learning processes in vocational subject classes in schools for pre-vocational secondary education. It also enabled us to identify starting-points for the redesign of current learning environments towards a community of learners for vocational orientation.

Notes

1. This study is part of a larger research programme called 'An instructional design for pre-vocational secondary education: the school as a community of learners for students and teachers'. The programme focuses not only on vocational orientation but also on the integration of the Dutch language as a general subject into vocational subjects and vice versa, and the professional development of teachers in school. The Dutch Council for Educational Research subsidizes the research programme.
2. Some European countries, like the Netherlands, have an educational system in which secondary education is split up in a pre-vocational and general stream. Other countries, like

Sweden, Denmark and Finland, have no such division. In particular, in European educational systems with such division relatively few students participate in upper secondary and tertiary vocational education (OECD, 2007).

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