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Communities of learners for vocational orientation

Optimising student learning and engagement in initial vocational education

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Chapter 7

SUMMARY AND GENERAL DISCUSSION

There have been a large number of studies on communities of learners, mostly in the context of general education. They show that fostering communities of learners in the classroom can enhance student learning and engagement (e.g. Brown & Campione, 1994; Engle & Conant, 2002; Scardamalia & Bereiter, 1991; Roth & Lee, 2006; Matusov, von Dyke, & Han, 2012). Students enrolled in pre-vocational education, who often deal with learning problems and co-occurring behavioural problems (Peetsma & Van der Veen, 2015), might also profit from learning environments that foster communities of learners. Up to now the topic of communities of learners for students in pre-vocational education has hardly been explored. This dissertation aimed to contribute to filling this research gap. The central question of this study was:

How can a ‘community of learners’ be used to enhance student learning and engagement in pre-vocational education?

In order to answer this question, a design research study was conducted. The goal was threefold—to *conceptualise* communities of learners for vocational orientation⁷, to *find ways to foster* these communities of learners and to *evaluate* their influence on student engagement in pre-vocational education. This final chapter summarises the main findings of the study, followed by a discussion on their implications for theory, educational practice and future research. The chapter closes with a general conclusion regarding the main research question.

1. SUMMARY OF THE MAIN FINDINGS

1.1 Conceptualisation of a community of learners for vocational orientation

The aim of *Chapter 2* was to conceptualise a community of learners for vocational orientation and to investigate to what extent and how elements of this conceptualisation were already manifest in actual teaching and learning in pre-vocational education (Research Question 1). A conceptual framework was developed on the basis of past literature on the concepts of ‘a community of

⁷ Since one main goal of Dutch pre-vocational education is to develop a vocational orientation, communities of learners for students in the early years of initial vocational education have been termed ‘communities of learners for vocational orientation’.

learners' (e.g. Brown & Campione, 1996) and 'a community of practice' (Wenger, 1998). The concept of a community of practice led us to conceive of learning in pre-vocational secondary education as participating in an increasingly competent way in vocational practices. The concept of a community of learners interpreted from a sociocultural perspective focuses more deliberately on learning by offering students opportunities to distance themselves from the immediate exigencies of the work situation. The combination of the concepts resulted in a community of learners for vocational orientation in which participation and critical reflection are balanced. In this particular kind of community of learners, students are stimulated to develop an inquisitive stance that enables them to determine the directions in which they are willing and able to develop in order to become professional workers and take their place in society. From our theoretical elaborations, four interrelated parameters have been distilled to describe a community of learners for vocational orientation. In such a learning community, students would ideally be engaged in 1) shared learning, 2) meaningful learning, 3) reflective learning and 4) learning for transfer.

The theoretical framework of a community of learners for vocational orientation has proved to be a useful tool to get a hold on teaching-learning processes in pre-vocational education. In a case study, the framework was used to evaluate teaching-learning processes in four ninth-grade classes (14-15 year old students) of the vocational subject Care & Welfare at two schools offering pre-vocational secondary education. Only part of the elements of communities of learners and communities of practice were found to be manifest in the classroom practices that were examined.

The first parameter—shared learning—was evident in all the classroom situations that were examined. However, it almost invariably took the form of cooperation between students to accomplish the shared goal of the traditional classroom practice (i.e. completing their assignments). In addition, the simulated work situations limited shared learning by focusing on technical aspects to the exclusion of the social aspects of working in a specific area. As a result, the students did not learn to socially interact for the benefit of a shared vocational practice.

The second parameter refers to the meaningfulness of learning. The simulated work situations lacked the elements needed to engage students in peripheral participation—a clear image of the vocational objectives to be achieved, social interaction with clients and professionals and having a share in steering the teaching-learning process. Indeed, the students did not experience the particular value and significance of the vocational activities that were simulated, did not enter into the role of professionals and were not incited to attach personal or societal meaning to what they had to learn.

In most of the classroom situations that were analysed, reflection (the third parameter) took the form of thinking about whether the actions taken had been adequate and, sometimes, of the students realising what they had or had not learnt. However, the simulated work situations did not encourage reflection on the meaning of the related professions for the students themselves, neither on the importance of the professionals for society, as the sociocultural context of working in such professions was missing.

Regarding the fourth parameter—transfer—the students in the investigated classroom situations gave no signs of being aware of having learnt something that could be used in a different situation. The students missed the sociocultural context in which the assigned vocational task was embedded. This made it hard for them to

get a view of all aspects of the vocational task and, thus, to get an idea of the usefulness of what they had learnt and how competent they had become for related vocational tasks. In the classroom practices that were examined, tasks that explicitly incited the students to flexibly use their newly developed competencies were clearly absent.

During the case study, the teachers and researchers collaboratively explored what the classroom practices would need to fully realise communities of learners for vocational orientation. With the four parameters as guidelines, the teachers came up with several ideas. The teachers' reflections showed that the conceptual framework is not only a useful instrument to map out teaching-learning processes in pre-vocational education but also to identify starting points for the redesign of current learning environments towards a community of learners for vocational orientation.

1.2 Ways to foster communities of learners for vocational orientation

In *Chapter 3*, the theoretical framework was used as a point of departure for designing learning environments that foster communities of learners for vocational orientation, and it was investigated to what extent and how students experienced their learning as intended (i.e. as shared, meaningful, reflective and transfer-oriented) in these learning environments (Research Question 2). The theoretical framework was complemented by a set of tentative heuristics that were found in literature. Teachers of the vocational subject Care & Welfare and the researchers elaborated these tentative heuristics for use in their particular classroom practices. They developed eight curriculum units in total, each of about forty lesson hours. In the first school year a team of three teachers and the researcher at school A developed a Coffee Morning unit for elderly people from the neighbourhood and an Activity Morning unit at a primary school. At school B a team of three teachers and the researcher developed the Steinhagen Family unit, in which students had to guide members of one specific family to social services, and Young Meets Old, a unit in which the students organised an afternoon with activities for elderly people. Each unit was implemented and formatively evaluated by the students, teachers and researchers. During the second school year, the units that were initially designed were optimised (redesigned) based on the evaluations obtained during the first school year. This resulted for school A in Coffee Morning II (relocating the activity to a nursing home) and Activity morning II. School B developed Young Meets Old II and the unit 'Make A Difference Day' (MADD) which replaced the Steinhagen unit. Thus, in total eight curriculum units, and concomitant learning environments, have been developed that varied in the way and in the extent to which the heuristics had been incorporated.

Analysis of the student questionnaires (N = 68 first year / 64 second year) showed that during three out of the four curriculum units that were developed in school year one (Cycle 1), and the four further developed units of the next school year (Cycle 2), the students had experienced learning in a shared, meaningful, reflective and transfer-oriented way more than during regular units. The extent to which learning was enhanced varied between the designed and redesigned units—the more the heuristics were refined and put into practice, the more the students reported the intended features of learning.

A qualitative data analysis of one unit in the first year and its redesign in the second year – Activity Mornings I and II – was done (lesson observations and student interviews, N = 16). The analysis revealed how the heuristics, as implemented in the curriculum units, did or did not enhance shared, meaningful, reflective and transfer-oriented learning. Shared learning was fostered by presenting assignments with a transparent professional objective and allowing the students to share in the pursuit of this goal, thus creating a shared sense of responsibility. Meaningful learning resulted from student engagement in activities that called for real vocational practices. It was found to be important to carefully specify the vocational practice in order to stimulate students to learn the particular content. Social interaction with people during vocational activities and being given leeway and support in carrying out the activities also contributed to the perceived significance of the learning for the students. Reflective learning was achieved by engaging the students in increasingly complex situations and through joint reflection on their experiences, but only if the students adopted the role of a professional (instead of a student). In doing so, the students identified concepts and processes that can help improve performance, and they became more aware of their abilities and affinities. Finally, learning for transfer was stimulated by comparing and contrasting different practices given the aim of the activity. Critical participation was barely stimulated, however, as it was left up to the students to recognise that they themselves are in the position to further to shape practices. Based on these findings, the tentative heuristics could be further refined.

1.3 Evaluation of engagement in communities of learners for vocational orientation

Chapter 4 aimed to provide insight into whether and how teaching and learning in learning communities contributed to the students' engagement in learning (Research Question 3). The chapter gives a sociocultural account of engagement in learning. According to sociocultural approaches, engagement is the result of the interaction between a student and the activities in which he or she participates (Hedegaard, Edwards, & Fler, 2012; McInerney, Walker, & Liem, 2011). Engagement in learning is generated when students attach meaning to what they learn during participation in learning activities. During participation in a (simulated) vocational activity students can come to understand the meaning of vocational knowledge and skills if the goal of the vocational activity cannot be accomplished without the particular knowledge and skills. Then, the goal of the vocational activity provides students with a motive for developing the particular knowledge and skills. That motive is called an object-motive. By attaching an object motive to the vocational activity, students become engaged in learning. Therefore, the goal of vocational activities should be made clear to them. Besides object motives, students can also have personal motives to do or do not participate in vocational activities. It was assumed that teaching and learning in communities of learners for vocational orientation makes students aware of personal and object motives to participate in vocational and thus learning activities, while at the same time they are encouraged to align their personal motives with the object motives that they attach to the vocational activities in which they participate.

In order to answer research question 3 the study focused on the same designed and redesigned curriculum units of the subject Care & Welfare – Activity Morning I and II – and the same ninth-grade students as in the study reported in the previous chapter. In order to investigate *whether* working in a community of learners for students in pre-vocational education contributed to the students' engagement, questionnaire data regarding both the units that were designed and redesigned and the regular units that preceded them were collected and compared. The students (N = 132) were asked about their appreciation of the value of what and how they learnt and about their investment in schoolwork in each unit. Correlation analysis and analyses of variance for mixed design indicated that working as a community of learners for pre-vocational education did indeed enhance the students' engagement. Overall, students who found themselves learning and working as a learning community more than they normally would better valued what and how they learnt in these as compared with regular units. Students who valued the content and the way of learning more also reported more investment in the Care & Welfare lessons. A direct association between working as a community of learners for vocational education and investment in school could not unequivocally be determined.

To explore *how* working as a community of learners enhanced student engagement, the dynamic interplay between the students and the learning environment was examined more closely for Activity Morning I and II. Stimulated recall interviews (N = 16) were conducted with pairs of students, focusing on three assumptions about how working in communities of learners for vocational education relates to student engagement.

First, it was assumed that the students would appreciate the *value of what they had learnt* during the units, because working as a learning community made them aware of personal and object motives for engaging in vocational practices. This only turned out to be the case in the redesigned unit. Our analysis suggests that the interaction with professionals (primary school teachers) helped the students become aware of the object motives that professionals generally have to engage in the activity only when they felt they were treated as early professionals. The interaction with real 'clients' (school children) helped them become aware of personal motives for engaging, or not engaging, in the vocational practice.

Second, it was assumed that the students would come to *value the way of learning* in a community of learners for vocational education as this method of learning encourages them to align their personal motives with the object motives that they attach to the vocational activities in which they engage. The students did appreciate the freedom they had to shape the event and work according to their own plans. However, this appreciation did not extend to their opportunity to be agents who pursued personal goals that are consistent with vocational goals.

Finally, it was assumed that students who actually become aware of personal and object motives to engage in the vocational activities and align both of these motives would *invest in school*. This was indeed the case in both of the units. The thrill of working with school children encouraged the students to invest during the event at the primary school. Only in the redesigned unit, however, did the preparatory assignments prompt the students to set a goal that was related to the event and did they get the opportunity and responsibility to pursue that goal; the activity became more than a school assignment.

These results led us to the conclusion that learning environments that are designed on the basis of our model of communities of learners for pre-vocational education can enhance student engagement. However, the current model of communities of learners did not necessarily lead to enhanced student engagement. The dynamics of engagement demonstrated that students often perceived the designed learning environments to be similar to the regular school context with regards to learning, and they responded accordingly. It is difficult to change the image of school that students have formed over the years by using a unit of only 40 lesson hours. This prompted a further specification of the model of a community of learners for pre-vocational education in which emotions and tensions play a role in creating the conditions for student learning to spontaneously occur.

Chapter 5 elaborated on the insights in *Chapter 4* in order to determine the characteristics of communities of learners for vocational orientation that may explain how student engagement is enhanced (Research Question 4). A community of learners for vocational orientation can be described as a pedagogical space that addresses both the personal and object motives that students attach to vocational activities by allowing them to encounter and overcome boundary experiences. This chapter particularly focused on how boundary experiences are evoked and can be used to enhance students' engagement in learning.

One of the designed curriculum units—the so-called MADD unit (Make A Difference Day, after National Volunteer Day)—was investigated. In particular, the investigation focused on one group of four students who, supported by teachers and professionals (diversional therapists), worked on an activity for elderly people with dementia in a nursing home. Data consisted of video recordings of this group and interviews with the students about their perceptions of the teaching-learning activities, their engagement in learning as well as the products and assessments they completed during the unit.

The results show that working as a community of learners for vocational orientation, as operationalised in the unit, enhanced the students' engagement and learning due to the emergence and processing of boundary experiences. During their work at the nursing home, the students encountered situations in which they were not able to function adequately. Vocational knowledge and tools were offered for developing the competencies that were necessary for the vocational activity they were going to perform. At the same time, the students had choice and control in developing these competencies. Because the professionals acted as role models and treated them as junior colleagues, the students began to join them in pursuing their professional object of the vocational activity. The vocational activity, not the subject content as such, became the intended object of the students' actions. The object motive that is central in traditional schooling, i.e. merely 'learning', was thus replaced by the object motive of preparing, accomplishing and evaluating a vocational activity professionally. Working as a community of learners for vocational orientation helped the students imagine themselves as early professionals in a particular vocational practice. This was not, however, a smooth process but was associated with experiencing ruptures and boundary experiences. For boundary experiences to occur, however, *actual* border crossing between school and vocational practice appeared to be crucial. The experiences of two students who were selected for further interviews showed how personal motives influence the

perceptions of the object of the curriculum and co-determine engagement. The alignment of educational and personal motives appeared not to be guaranteed and to require specific attention.

1.4 Joint design research by teachers and researchers on communities of learners for vocational orientation

Chapter 6 reflected on the collaboration between the researchers, teachers and the school middle manager to design curriculum units that foster communities of learners for vocational orientation. It provides a detailed review of the joint efforts made during the process of design and the resulting curriculum units of the first year of the study at one of the two participating schools offering pre-vocational education. Data were collected through observations of all the meetings of the development team, all the lessons of the implemented units and interviews with teachers and students. The results show that the teachers were actively involved in the process of designing and implementing the curriculum units. Nevertheless, they did not appreciate the value of using the theoretical framework of a community of learners for vocational orientation. The community of learners concept did not seem to become meaningful for them, and little reflection on the concept's relationship to the school's vision regarding teaching and learning occurred.

In retrospect, one might wonder whether the participants truly had a shared goal in this design research study. Although the teachers, the school middle manager and the researcher agreed to collaborate on fostering communities of learners for vocational orientation, they each pursued their own goals. For the teachers, the main focus was designing activities that the students would enjoy, the school middle manager's focus concerned school development and disseminating innovative learning practices and the researcher was interested in investigating the use of communities of learners to enhance students' quality of and engagement in learning. Realising so many different goals at such different levels may have been too ambitious for a two-year project.

These problems might be typical of collaborations between researchers, teachers and school middle managers, but being more explicit about the expected roles of the participants and allowing more time for the design process may mitigate some of these issues. Analyses of the two curriculum units that had been designed in the first year at the participating school showed that the teachers were better able to promote student learning as intended by means of the second curriculum unit (the Activity Morning) than by means of the first (the Coffee Morning). Despite the challenges encountered, it was possible to elaborate on the concept of a community of learners in a way that is useful for pre-vocational secondary education. All evaluations during the design research study yielded new suggestions for improvements. The collaboration between the researcher, the teachers and a school middle manager resulted in ecologically valid designs and elaborated heuristics. Additionally, the curriculum units appeared effective in enhancing students' quality of learning and engagement. Moreover, several years after our design research study, the units became part of the regular curriculum of the school, and similar units were developed later.

2. DISCUSSION OF THE MAIN RESULTS

The findings presented in this dissertation display the potential of a community of learners for use in the early years of initial vocational education, in particular for the enhancement of student learning and engagement. In this section, the theoretical and practical contributions of this dissertation are discussed. Then, limitations of the study as well as suggestions for future research are presented.

2.1 Theoretical contributions

The main theoretical contribution of this study lies in exploring the potential of the concept of a ‘community of learners’ in the context of the early years of Dutch initial vocational education, which to our knowledge has not been done before. From a sociocultural point of view, a theoretical framework of a ‘community of learners for vocational orientation’ was elaborated consisting of four interrelated parameters—shared learning, meaningful learning, reflective learning and learning for transfer. In a community of learners for vocational orientation, students learn by participating in activities related to vocational practices. The framework adds to conceptualisations of communities of learners for students in general education (e.g. Brown & Campione, 1996; Scardamalia & Bereiter, 1991, 1994) that introduce students to the practice of doing research.

In the present study, the theoretical framework served as an ideal picture of teaching and learning as a community of learners for students in the early years of initial vocational education and was used to map out current teaching-learning processes in two Dutch schools offering pre-vocational education. In this way, aspects of learning environments in pre-vocational education that should be improved to optimise student learning and engagement could be identified in detail. Although (simulated) workplaces that are commonly used in pre-vocational education do meet the learning needs of students to some extent, our analysis of current teaching-learning processes illustrated the limits of (simulated) workplaces as contexts for learning: real workplaces lack the time and distance for reflection, which impedes learning, and simulated workplaces often display only some of the relevant aspects of working in vocational practice, which hinders the development of a vocational orientation. The need to overcome these limits of workplace learning as it commonly takes place is also addressed in other studies about learning across school and work in later years of initial vocational education (e.g. Akkerman & Bakker, 2012;).

The theoretical framework was complemented by a set of tentative heuristics, which were refined in the design research study. The set of heuristics contributes to research that distinguishes design principles or heuristics for the design of communities of learners in general education (e.g. Bielaczyc & Collins, 1999; Brown & Campione, 1994; Engle & Conant, 2002; Rico & Shulman, 2004). For instance, the principles of cooperative learning that are usually applied in communities of learners in general education proved to be insufficient for shared learning in pre-vocational education. To be explicit about the professional goal that they are jointly pursuing is especially an addition needed to encourage students of pre-vocational education to learn in a shared way. Another example is the heuristic for meaningful learning according to which students should be engaged in real

vocational activities in the context of vocational practices. In a community of learners for general education, students are often encouraged to engage in researching a big idea of an academic discipline. The heuristic of engaging students in a vocational activity proved to be sufficient for the students that participated in the design research study, but it could be further refined—the vocational activity and practice that students are asked to engage in need to be carefully chosen and clearly specified to stimulate their learning of the particular content. It should be easy for the students to discern the object motive of the vocational activity that professionals generally have to engage in the activity, and the learning content should be crucial to pursue that motive and accomplish the activity.

The community of learners for vocational orientation was not only developed as a means to optimise pre-vocational learning but also to address motivational problems of students in pre-vocational education. Sociocultural approaches to motivation, like the one in this dissertation, have begun to emerge relatively recently (Hedegaard, Edwards, & Fleer, 2012). From a sociocultural perspective, it was possible to shed some new light on student engagement in learning. Especially the fundamental notion that engagement arises in a dialectic between an individual and the features of an activity in which he or she participates, and the related concepts of ‘personal motives’ and ‘object motives’, were found to be useful to understand and explain why the students did or did not engage in learning. As such, this dissertation supplements studies on student motivation that are based on long-established motivation theories, like the studies of Peetsma and Van der Veen (2009, 2015), Van Nuland (2011) and Prince (2014) on student motivation in pre-vocational education.

An important finding was the role of boundary experiences in communities of learners for vocational orientation. Boundary experiences often evoke emotions like uncertainty, which can lead students to withdraw from learning if they do not expect to be able to remedy the situation. However, it was found that communities of learners for vocational orientation could support and encourage students to develop their competencies and identities as a way to overcome the distress of boundary experiences, thereby creating student engagement in learning. This finding supports studies with a similar line of thought, like Matusov (2009) and Matusov, Von Dyke and Han (2012) on ‘dialogical provocations’ in communities of learners, and Zittoun’s (2008) study on transitions (i.e. learning, identity change, meaning-making processes) that follow ruptures perceived by people. Additionally, the design research study led to refinements of the heuristics for shared, meaningful, reflective and transfer-oriented learning for the design of learning environments in which student engagement is enhanced in communities of learners by stimulating students to encounter and overcome boundary experiences. This finding supports that of other studies that explain student engagement in communities of learners (e.g. Engle & Conant, 2002).

2.2 Practical contributions

In the introduction of this dissertation, it was argued that the Dutch initial vocational education system does not fully succeed in realising its primary goal of preparing students in pre-vocational education for senior secondary vocational education. Organising teaching and learning in (simulated) workplaces, as it is usually

established, has its limits: in real workplaces, a lack of time and distance for reflection impedes learning, and simulated workplaces often display only some of the relevant aspects of working in vocational practice, which hinders the development of a vocational orientation. These limits of (simulated) workplaces as contexts for learning and motivational problems of students in pre-vocational education require specific attention. This dissertation shows that organising teaching and learning in communities of learners for vocational orientation contributes to tackling these problems.

The findings of the design research study show teachers, middle managers and educational consultants that teaching and learning as a community of learners for vocational orientation can enhance student engagement in learning. The design research study also provides findings that show how teachers, middle managers and educational consultants could foster communities of learners for vocational orientation. The theoretical framework of a community of learners for vocational orientation that was developed during this study presents an ideal picture of teaching and learning in the early years of initial vocational education. This picture is complemented by a set of heuristics for the design of learning environments that foster teaching and learning as a community of learners for vocational orientation and thereby enhance the quality of student learning and their engagement in learning. The theoretical framework and set of heuristics must be interpreted, further elaborated and applied by teachers and educational consultants to foster communities of learners for vocational orientation in their particular classroom practices. The present study clearly describes examples of how this was done by the teachers at the schools that participated in the study.

The design research study was done in the context of schools for Dutch pre-vocational secondary education related to the professional field of Care & Welfare. However, the findings of the study are relevant to the whole Dutch initial vocational education system. The importance of vocational orientation is also stressed in senior secondary vocational education and tertiary vocational education (vocational orientation as a part of career competence development and the development of a professional identity). With well-developed vocational orientations graduates of senior secondary vocational education and tertiary vocational education are able to find jobs that suit them and that allow them to take their place in society. In pre-vocational education related to other professional fields, in senior secondary vocational education and in tertiary vocational education teaching and learning takes place in different (simulated) workplaces than the workplaces in pre-vocational education related to Care & Welfare. In addition, there are differences in characteristics of the students, the teachers, the schools, and the nearby institutions and companies that provide jobs for graduates. In order to foster communities of learners for vocational orientation in particular educational practices other than pre-vocational education related to Care & Welfare, the theoretical framework and the set of design heuristics must be interpreted, further elaborated and applied with regards to these differences.

2.3 Limitations and suggestions for future research

The objective of this dissertation was to contribute to knowledge and insight on the use of communities of learners in order to enhance student learning and engagement in the early years of initial vocational education. This was done by means of a design research study conducted at two Dutch schools offering pre-vocational secondary education related to the vocational field of Care & Welfare. This relatively small-scale approach opened up the opportunity to explore the use of communities of learners in pre-vocational education and its influence on student learning and engagement in depth. Yet, a large-scale approach with more schools and in the context of different vocational fields is needed to verify the findings described in this dissertation.

Ideally, a design research study with the aim to develop research-based interventions should encompass as many cycles of design, implementation and evaluation as needed to establish optimally refined heuristics for design. In the present study, the number of design cycles was limited for reasons of time and money. Although the findings of the present study led to the refinement of the tentative heuristics at several points, further refinement is needed, especially with regards to the parameters of reflective learning and learning for transfer. Future design research studies based on the theoretical framework and tentative heuristics presented in this dissertation could lead to evaluation outcomes that enable a further refinement and consolidation of the heuristics for design. Moreover, these studies may lead to a database of detailed examples of how the framework and tentative heuristics can be further elaborated and applied that may help teachers to transfer the contextualised knowledge of and insights into fostering communities of learners for vocational orientation in the examples to their particular classroom practices.

The second aim of the design research study described in this dissertation was to gain insight into engagement in communities of learners for vocational orientation as conceived from a sociocultural perspective. Boundary experiences were found to be a key concept for understanding student learning and engagement. A thorough analysis of the MADD unit showed that teaching and learning as a community of learners for vocational orientation was found to stimulate the students to encounter and overcome boundary experiences and thereby enhance their learning and engagement. This finding should be further investigated and verified as a promising explanation of student engagement in communities of learners.

An aspect that has been qualitatively investigated in the present study is the extent to which teaching and learning as communities of learners for vocational orientation actually led to better learning results and well-developed vocational orientations. Quasi-experimental studies are needed to confirm these results, as pre-vocational education aims for these outcomes in order to increase the students' chances of success in senior secondary vocational education.

3. GENERAL CONCLUSION

This dissertation presents the findings of a design research study in which the potential of a 'community of learners' is explored for use in the early years of initial vocational education in order to enhance student learning and engagement. The study has shown how 'communities of learners for vocational orientation' can be

fostered and lead to the enhancement of student engagement in Dutch pre-vocational education. Further research is recommended to refine and consolidate the community of learners model, including the heuristics for the design of learning environments that foster such communities of learners. Further research may also provide more examples that enable educational practitioners to build on the insights of this study and foster communities of learners for vocational orientation in their particular classroom practices. Quasi-experimental studies are important to consolidate the indication that teaching and learning as communities of learners for vocational orientation lead to better learning results and well-developed vocational orientations.