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Roles and tasks of higher education teachers in the regional atelier

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Regional ateliers have been founded in diverse Dutch regions with the aim of solving complex social and physical-spatial issues in an interdisciplinary multi-actor learning process. Examples of these issues are climate change, biodiversity loss and social and economic decline. In the regional atelier a diverse group of actors works together. Actors can come, for instance, from governments, businesses, non-governmental organizations, research and education. Participants work together on realistic, authentic projects aiming to stimulate sustainable development in the region (Foorthuis, 2005; Meijles and Van Hoven, 2010).

The regional atelier can be identified as an authentic learning environment in which the school, including both their students and teachers, operates in this interdisciplinary multi-actor learning process as an equal partner in relation to the other participants. Students and teachers fulfil tasks in complex interdisciplinary projects and assignments. These tasks are representative for the tasks they will perform in their (future) professions and therefore labelled as authentic. All participants in the regional atelier together form an innovative learning community.

For teachers, this means that they need to leave the school to participate in the interdisciplinary multi-actor processes. Furthermore, it is expected from teachers to adopt a learning attitude being a participant in an innovative learning community. At the same time they retain their original responsibilities such as supervising students and assessing their learning results. So working as a teacher in the regional atelier requires new responsibilities on the one hand and a simultaneous performance of the new responsibilities in combination with the more traditional, known roles of the teacher focusing on knowledge transfer (i.e. expert) and the support of the learning process (i.e. coach).

Authentic learning environments in various forms have received a prominent place in higher and vocational education (Herrington & Herrington, 2006). Although their design has received much attention (Herrington & Oliver, 2000), the role of the teacher has been underexposed. In other educational innovations, such as competence-based education (Wesselink, 2010) or student-centred higher education (Tigelaar et al, 2004 and Gilis et al, 2008), attempts to identify roles and tasks of teachers have resulted in different role, task and competence profiles. The profiles can help us to identify teacher roles and tasks in the regional atelier, because both competence-based education and student-centred education share characteristics with the regional atelier learning environment. This involves working in practical learning environments for competence-based education and the demand-based approach in comparison with student-centred education. Results from the studies by Wesselink (2010), Tigelaar et al.(2004) and Gilis et al. (2008) might therefore be applied to the regional atelier.

Furthermore, a comparison between roles and tasks of teachers in authentic learning environments and the seven SBL-competencies (Stichting Beroepskwaliteit Leraren) is worth making. The SBL-competencies, established by the Dutch Association for the Professional Qualities of Teachers, are formulated as generally applicable to the performance of every teacher in The Netherlands as implementation of the act for professions in education (Wet Beroepen in het Onderwijs) as effected on August 1, 2006 (Staatsblad van het Koninkrijk der Nederlanden, 2005).

The comparison between the established profiles and the roles and tasks of higher education teachers in authentic learning environments has not yet been made.

The purpose of this study is to identify specific roles and tasks of higher education teachers in the regional atelier as authentic learning environment. The two main research questions in this paper are: What are the roles and task of higher education teachers in the regional atelier? And: to what extent are these roles and tasks unique to the regional atelier? To answer the second question, identified roles and tasks for the regional atelier as a result from the first research question, will be compared with roles and tasks that have already been identified for other learning environments.

To be able to identify teacher roles and tasks in the learning environment regional atelier, the work process in the regional atelier has been taken as a starting point. The work process illustrates the activities carried out by participants and the products to be delivered in the different steps. The assumption is that the description of the work process gives insight in the distinct roles and tasks necessary for a successful accomplishment of a step in the work process. A description of the work process has been formulated in the programme Regional Transition funded by the (former) Dutch Ministry of Agriculture, Nature and Food Affairs (Kuijper, 2010). The five steps that are taken as part of the work process are described below. Although the steps are numbered, they do not necessarily occur in chronological order in the practice of the regional atelier.

The first step in the work process is an exploration of regional issues and involved stakeholders aiming to set up a long-term and programmed cooperation in the region. The educational institution can play the role of initiator in this first exploratory step, but in most cases they only act as a participating actor. Products of this phase of the working process are a knowledge consortium, an active regional administration, a signed letter of intent, a joint research agenda and a business plan for the regional atelier. The research agenda forms the basis for the formulation of projects in which actors start to work. The second step in the work process concerns the articulation of demand, that is the translation of the research themes and questions of the research agenda into feasible projects for various educational programs. The third step is the actual implementation of projects. Learning expectations of students, teachers and commissioner(s) are recorded in a learning contract that is signed by all parties involved. Students carry out projects in close collaboration with other regional

stakeholders, including teachers. Students receive coaching focussed on both content and process. Students are also assessed, both during and at the end of a project. The fourth step in the work process is the optimization of the knowledge arrangement with the aim to guarantee a long-term collaboration between education, research and other relevant actors in the area. Activities in this part of the work process are the compilation and dissemination of newly developed knowledge and methodologies into usable products for regional development and process-oriented investments for the continuation of the multi-actor cooperation. Finally, a part of the work process consists of the translation of the learning results out of the projects into existing curricula. Existing curriculum elements can be modified or enriched with practical experience of teachers. The design of the curriculum according to the work processes within the regional atelier could also be part of the activities. This entire work process aims to build up and continue a learning network in which all actors learn and in which transparency of learning processes is an objective.

Method

Given the exploratory nature of this study, a document analysis was performed on available documents (n=95) of twelve regional ateliers published in the period 2005-2011, that is from the creation of the regional atelier to date. The website www.de werkplaats.eu was used as a source for the selection of the documents. Participants consider this website to be the official communication medium for the regional atelier. The documents included policy documents, business plans, information brochures and films, annual plans, annual reports and work reports.

From each document, all sentences or phrases have been selected that referred to one single role or task for a teacher working in the regional atelier, provided that the sentence or phrase had been mentioned by a teacher or by another participant talking about a teacher. The total number of selected excerpts was 677.

A role is defined as a coherent set of tasks associated with a step from the work process of the regional atelier. Every step of the work process was assumed to correspond to one role. A task is defined as a meaningful activity that is performed to execute a specific step in the work process. The text fragments about roles are grouped according to the description of the work process of the regional atelier. The text fragments about tasks were then grouped by role. For each role, a label was formulated based on the excerpts about this role and the excerpts about the associated tasks . Finally, the tasks per role were brought together in a summary. This resulted in eight distinct role descriptions and for each role a list of associated tasks.

The selection of the text fragments, the selection of roles and grouping of tasks were carried out by the first author. The result was submitted for validation to the second and third author. Where

disagreements existed these were discussed until all analysts reached agreement. This was done to increase the inter-subjectivity of the analysis.

To answer the second research question about the specificity of the roles and tasks as identified for the regional atelier, the list of roles and tasks for the regional atelier was compared to the list of roles and tasks for teachers in competence based education (Wesselink, 2010), to the teacher competencies as formulated for teachers working in student-centred higher education (Tigelaar et al, 2004; Gilis et al, 2008) and to the list of competencies as formulated by the Dutch association for the professional qualities of teachers (Staatsblad van het Koninkrijk der Nederlanden, 2005) .

This comparison resulted in a breakdown of the roles of higher education teachers in the regional atelier in 1) specific for working in a regional atelier, 2) already identified as a role in other learning environments, but with a specific interpretation of duties in the case of working as a higher education teacher in the regional atelier and 3) not specific for the regional atelier, also identified in other learning environments.

Results

Based on the analysis, eight roles were identified for working as a higher education teacher in the work process of the regional atelier. One or more tasks were identified for each role. Table 1 describes the identified teacher roles and tasks in the regional atelier. Below, a comparison is made with the role, task and competence profiles in the context of competence-based education and student-centred higher education.

Table 1. Roles and tasks of higher education teachers in the regional atelier

Role	Tasks
Business developer	- Initiate, build and maintain strategic networks in the region - Contribute to the preparation of the regional research agenda - Acquisition of the project tasks - Organization of the work process
Learning project developer	- Translation of a regional demand into one or more feasible projects for various educational programmes - Project management (embedding in school organization, planning and finance)
Process facilitator	- Management of expectations with respect to involved commissioners, educational institutions and students - The facilitation of mutual learning in an interdisciplinary

	learning network with project members from different disciplines and educational levels
	• Design of reflexive monitoring
	• Controlling the commonly set quality standards
Supervisor student project	• Supervision of projects in terms of a content oriented, methodological and process oriented incentive and guidance of student project teams consisting of pupils and students from different disciplines and educational levels
Assessor	• Assessment of a student project in light of both the educational requirements and the requirements of the commissioner(s)
Actor	• Participation in projects as an equal partner in relation to other actors
Expert	• Create and distribute common knowledge and research methods
	• Upgrade or translate project results of students into an advice to the commissioner
Curriculum innovator	• Apply learning outcomes from projects in existing education
	• Incorporation of the learning environment regional atelier into the curriculum and the educational organization

Business developer

The role of business developer has been appointed as being specific for the regional atelier. The business developer leaves the school to build up a learning network in the region. A parallel can be drawn with the manager from the profile of Wesselink. However, this manager is building a network with the school as a starting point. In the regional atelier, the regional development is taken as a starting point. The competencies set for the domain of organizer as formulated by Tigelaar et al are, in contrast to the tasks of the business developer, focusing on the internal school organization. Gilis et al don't mention any competencies in this regard. The SBL names some associated performance requirements, among which to build up and maintain contacts with institutions outside the school (if necessary). This is argued from the training of and care for the student, and not aiming on the set up of a regional knowledge network.

Learning project developer

The learning project developer has already been defined as a role in the profile of Wesselink (cf. learning broker). However, the difference with fulfilling this role in the regional atelier versus in

competence-based education, is that multiple societal interests must be served simultaneously. The regional atelier sets the objective that all parties learn. In case of competence-based education the task of the learning broker is limited to the formulation of a project task that, if done properly, serves the wishes of the commissioner(s) and contributes to the competence development of the student and not necessarily to regional sustainable development.

Process facilitator

The role of process facilitator was identified in other learning environments (compare for example the coach of Wesselink and the teacher as a facilitator of learning processes of Tigelaar et al), but has specific tasks in the context of the regional atelier. These specific tasks include running the expectation management, facilitating a learning network, the design of reflexive monitoring and controlling the commonly established quality standards.

Moreover, the specificity of the tasks of the process facilitator in the regional atelier is indicated by the simultaneous presence of the characteristics interdisciplinarity, working with pupils and students from different educational levels in one project and working in a learning network. The execution of expectation management wasn't mentioned in any of the other profiles, nor was the facilitation of a learning network with partners from outside the school.

The design of reflexive monitoring is a specific task compared to the already known reflection task of teachers in the sense of looking back with students on what and how they have learned (Gilis et al and SBL) or reflecting on the lessons learned in relation to a future role in the professional practice (cf. the coach of Wesselink) or reflecting on your actions as a teacher (cf. the lifelong learner of Tigelaar et al and the professional attitude of Gilis et al.). Reflexive monitoring entails the constant questioning of the set goals and values for the duration of the project, and if necessary the joint adjustment of them (Sol et al, 2011). Furthermore, the teacher in the role of process facilitator is not only responsible for reflection on his own performance and those of the students, but for the actions and learning of all actors involved.

Quality control is also indicated as a competence by Gilis et al, but in this case it concerns the adjustment of the own educational practice by the teacher. Ensuring quality standards in the regional atelier concerns the monitoring of the quality agreements as set between student, teacher and commissioner(s) in the learning contract. SBL lists the knowledge and skills teachers need in the field of group processes and group communication to shape a good working relationship with the students and between students. These competences are probably also required for guiding groups in the regional atelier, but are not specific for this setting.

Supervisor student project

The role of supervisor student project is similar to the role of coach of Wesselink and counsellor of Tigelaar et al. Gilis et al mention in this context, the competencies regarding the trust and respect of the student as a partner in the educational process, to learn the students to learn and the encouragement of collaboration among students. However, the guidance tasks of the student's supervisor in the regional atelier have a different interpretation because teachers assist student groups with students from different educational levels, from different disciplines and in a context in which they, in addition to students, must work together with other partners in trust and respect. The work organization needs to be adjusted to level differences between students.

Assessor

The role of the assessor is not new. Assessment of learning results occurs indeed in almost any educational setting. A regional atelier specific task for the assessor is that he/she could use the opinion of other involved parties in drawing a final conclusion. Incidentally, all 677 citations referred only once to the role of assessor and once to a related task. In this case a parallel could be drawn with the profile of Wesselink. For this profile the assessor hasn't been identified as a separate role by the teachers participating in a Delphi study. This is in contrast with the considered important position of the assessor in the model for competence based education (Wesselink, 2007). Tigelaar et al distinguish the role of evaluator with the task of assessing student learning outcomes and adjust teaching practices in line with the results of evaluations. SBL appoints the ability to organize the assessment in time, possibly in cooperation with the workplace supervisor of a company. Gilis et al. do not identify any competencies to assess students.

Actor

The role of actor has not been identified in any of the studied competence profiles for teachers in higher education. Different from the teacher in the traditional constellation of student-teacher-representative of the workplace, the teacher in the regional atelier operates in an equal relationship to the other participants and consciously learns himself. Project participation involves working in teams on assignments from the regional research agenda. Examples of the activities of the teacher in the role of actor are designing and carrying out research in close cooperation with the other actors, intense communication with residents, policy makers and experts and the representation of viewing positions of diverse stakeholders.

Expert

The role of expert has a specific interpretation in the regional atelier with the tasks to, whether or not cross-project, combine knowledge, publish it and distribute the knowledge among potential users. The expert contributes to the professionalization of the learning network by sharing knowledge with other regional ateliers, methodology development, research on effective approaches and anchoring methods

in education and research. Furthermore, a specific task is to upgrade results of student projects to an acceptable result for the commissioner. Wesselink mentions the role of expert. However, this expert translates new developments in society into educational practice, broadens his professional domain knowledge by learning from the experience of students and is able to bring students into contact with other sources as long as he isn't sure about his own course material. Tigelaar et al state the expert in the light of domain knowledge. The expert of Tigelaar et al. is able to use relevant domain knowledge in his teaching, where the expert in the regional atelier combines, publishes and distributes the knowledge. The behavioural indicator of SBL in terms of knowledge development also concerns the own professional development with the aim of improving the craftsmanship of the teacher. In the context of the regional atelier teachers also use their knowledge outside the school in favour of regional development.

Curriculum innovator

The specificity of the curriculum innovator in the regional atelier is determined by the task to design and organize the curriculum and the educational organization in such a flexible way that they offer students and teachers that space necessary to optimally learn in the learning environment regional atelier in all its facets. The four profiles used for comparison in this study all refer to the role and tasks of the curriculum innovator. However, no profile refers to the design of a curriculum based on the work processes in an external network. The expert of Wesselink follows developments in society and translates them into the own teaching practice (see also the paragraph expert). The researcher of Wesselink has the task to integrate results of educational research into existing and new parts of the curriculum. The developer incorporates innovative ideas into the existing curriculum. In the context of curriculum innovation, Tigelaar et al only differentiate the ability to contribute to curriculum renewal for the organizer. The developer of Tigelaar et al builds education in such a way that students gradually learn to learn in a self-directed way. Gilis et al state the competence to design together with colleagues the preparation, execution and innovation of the educational practice. The SBL list includes the competence requirement to be able to develop a safe and powerful learning environment.

A comparison of the eight roles and their associated tasks with the existing four profiles of roles and tasks of teachers has answered the question which roles can be identified as:

1. specific for working as a higher education teacher in the regional atelier;

2. already identified as a role in other learning environments, but with a specific interpretation of tasks in the case of working as a higher education teacher in the regional atelier, and

3. identified for teaching in the regional atelier, but also identified for other learning environments.

The result of this comparison is shown in table 2.

Table 2. Classification of roles of higher education teachers to specificity for working in the regional atelier (for associated tasks see table 1)

1. Specific for working as a higher education teacher in the regional atelier
• Business developer • Learning project developer • Actor
2. Already identified as a role in other learning environments, but with a specific interpretation of duties in the case of working as a higher education teacher in the regional atelier
• Process facilitator • Supervisor student project • Expert
3. Identified for teaching in the regional atelier, but also identified for other learning environments.
• Assessor • Curriculum innovator

Conclusion and discussion

The aim of the study was to identify specific roles and tasks of higher education teachers in the regional atelier seen as an authentic learning environment. Eight distinct roles have been distinguished based on the work process in the regional atelier. Three out of the eight roles appear to be specific roles for working as a higher education teacher in the regional atelier. Three other roles have already been identified as a role in other learning environments, but have a specific character in the sense that in the regional atelier this role includes specific tasks in addition to the tasks associated to this role in the studied role, task and competence profiles. Finally, two of the eight roles and related tasks occur in the regional atelier in the same way as they occur in other learning environments.

The roles of supervisor student project and process facilitator appeared to be distinguished as two different roles in the analysis. It seems that in the regional atelier the more traditional tasks of project supervisor (guidance on content, methods and work process) are distinguished from the specific process management tasks such as recognized in the regional atelier (e.g. expectation management, working in an interdisciplinary learning network with participants from different educational levels and reflexive monitoring).

Only two of the 677 excerpts referred to the role of assessor in the regional atelier. These quotes did not mention any other tasks than determining the assessment for the student's study program. What did occur several times was that the assessment of the final project output was mentioned as a task of the supervisor student project. This could indicate that the assessment within the regional atelier has so far been done by the same person as in other learning environments for which competence profiles

have been studied, namely by the supervisor of a student project and rarely or not by an independent assessor.

The choice for grouping a certain task under a specific role is determined by or a direct link between a role and a task as made in a text fragment, or in an indirect way through taking a task as part of a step in the described work process of the regional atelier. The question is whether this latter method of grouping is sufficiently objective. In any case, the inter-subjectivity has been increased by reaching compliance between the first three authors about the list of roles and tasks. In practice, it is possible that tasks will be performed from a different role as for which they have been grouped in this study. This is partly due to the fact that a teacher often plays multiple roles simultaneously and partly by possible differences in interpretation of the grouping of tasks among roles.

The comparison with the four already established profiles of Wesselink (2010), Tigelaar et al.(2004), Gilis et al (2008), and SBL (2005) could not be made completely unambiguous due to the diversity in the design of the profiles. Wesselink identifies roles and tasks. Tigelaar et al define domains (which receive a role label) and competencies for each domain. Gilis et al identify competencies with indicators and the SBL list appoints competencies, professional requirements and behavioural indicators.

For the task 'learning' 25 text fragments were found. This task couldn't be grouped under a specific role as the task was mentioned in relation to various roles. To be able to make the regional atelier a learning network and achieve transparency of learning, every actor in question must consciously learn both from a content point of view as process oriented. The organization of, for instance, knowledge workshops, peer to peer feedback and inter-vision peer meetings support joint learning.

Future research will focus on the identification of competencies required for the identified roles. The identification of competencies could further confirm the level of specificity of the roles and tasks for the regional atelier. Then the list of roles, tasks and competencies will be mirrored to 422 text fragments derived from empirical data (interviews, focus group discussions). By means of an expert consultation in a Delphi study (Delbecq et al, 1975) the list will then be validated.

The results can be used for a comparison with teacher roles, tasks and competencies in other authentic learning environments and for the design of professionalization trajectories for teachers who work or start working in the regional atelier. To sustain regional ateliers and regional development, teachers in life sciences education are challenged to fulfil the identified roles and tasks.

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