Assessment of vocational knowing
：experiences from the Swedish pilot project with Upper secondary apprenticeship 2008-2011

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Abstract

In 2008, a pilot project with apprenticeship as an alternative pathway of upper secondary vocational education (USVE) started in Sweden. This paper is based on a follow-up study 2009-2011, funded by the Swedish National Agency for Education (SNAE) focusing on pedagogical aspects of apprenticeship. We interpreted 'pedagogical aspects' as concerning teachers' curriculum work, i.e. the organisation and design of apprenticeship in relation to following aspects: division of labour between school and work; the content; the roles of teacher and supervisor; and follow-up and assessment of students' development regarding vocational knowing in relation to the Swedish national curriculum for each of the programmes. In this article, we present results related to assessment in upper secondary VET apprenticeship. The issue for this article is to illuminate conditions for assessment in USVE-apprenticeship, the foci of assessment and the tools used for assessment.

According to regulations of apprenticeship, trilateral assessment sessions (teacher-supervisor-apprentice) are to be held regularly for follow-up and, at the end of a course, marking students knowing. As a representative for the education authority, the teacher is responsible for marking, but the supervisor is to provide the teacher with the information needed for follow-up and marking. The assumption is that during these sessions, there will be a dialogue between supervisor, apprentice, and teacher that will contribute to both follow-up and marking.

The results presented in this paper build on interviews with teachers, apprentices and supervisors, as well as some audio-recorded trilateral sessions for assessment. Our preliminary results show that these trilateral sessions are one of the critical situations in USVE-apprenticeship. A main result is that assessment was either focused on social and behavioural aspects or on vocational knowing. Which one that dominated was related to firstly, the qualifications of the teacher; secondly, to the division of labour on the workplace; and thirdly, to the local history of USVE-apprenticeship. These results and the consequences of them will be further developed in our article.

A short historical review of apprenticeship in Sweden

School-based VET has been dominating in upper secondary VET in Sweden since the 1940's. Unlike many other European countries the apprenticeship system in Sweden was never re-institutionalised as legislation, once the guilds were dissolved in 1846 (Nilsson 1981; Olofsson 2005). Instead the importance of school-based VET was gradually agreed upon by key actors such as the Employers' Federation, the Swedish Trade Union Federation and the Social Democratic government and came to be 'the Swedish model' after the Second World War (Lundahl 1998). During the recession of the 1940s, school-based workshops for learning various vocations became a strategic tool for labour market policy: by preparing young people to be skilled and ready for the labour market as soon as the economic situation would change, Swedish economy was expected to recover rapidly (Nilsson 1981).

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The apprenticeship system became more and more regarded as and an inefficient and out-dated form of VET. Craftsmanship was gradually replaced by industrial production and division of labour, which no longer demanded the long period of learning related to the mastery of a vocation and apprenticeship (Lindberg 2003). Aspects of the apprenticeship tradition remained, though, merely as informal paths of training – as a complement to some vocational programmes at upper secondary level: building and construction is an example of this (Berglund 2009).

With the reforming of upper secondary education in the 1990s, workplace-based learning[1] was introduced as part (minimum 15 weeks) of all vocational programmes and at the turn of the millennium apprenticeship was reintroduced. The concept Modern Apprenticeship (a concept borrowed from U.K., however with different meaning[2]) was established in Swedish educational policy – a reformation that resulted in an upper secondary apprenticeship pathway. Central to this initial apprenticeship track was that this he regular period of workplace-based learning was prolonged to 30 weeks, thereby replacing some of the school-based vocational courses. These first forms of modern apprenticeship were mainly intended for students who either had not qualified for national upper secondary VET-programmes[3] or, for students who had already started a VET-programme, had either failed in several subject or were considered risking failures. So the apprenticeship track was founded as a solution *for students in need of an individual programme*. Contrary to apprentices in countries like e.g. Denmark and Germany, Swedish upper secondary apprentices are not employed. Therefore the apprentices attend upper secondary school as students. This is also the case during periods of apprenticeship in enterprises and organisations – they are students, not employees.

Toward a new base for apprenticeship
In 2006 the new liberal-conservative government announced a new reform of upper secondary education, including the launching of a new apprenticeship education. In December 2007, the government decided on a national pilot project with the aim to introduce apprenticeship as an alternative but equal pathway within the 17 national vocational programmes (Prop. 2007/08:1; SFS 2007:1349). The duration of this project was from July 1, 2008 to June 20, 2011. The project was scoped to allow participation by approximately 4,000 students each year; and special funding was provided (SOU 2009:88). In total, about 13,000 students were engaged in this national project but only 44 per cent of the students who started 2008 completed their VET-programme at the end of the third year (SNAE 2012). Since autumn 2011, the upper secondary apprenticeship track has become a regular alternative within all upper secondary vocational programmes (SOU 2008:27).

Assessment in education and work
When it comes to assessment in school, most research has been directed toward compulsory school. In a Danish study, Kvale (2004) argues firstly, that informal assessment in practice needs more attention and secondly, that research on formal assessment in school has a narrow focus on examinations and marks. Based on empirical studies, he identifies following "forms" (p. 1) of informal assessment in practice:

- assessment as comparisons related to models
- assessment in using
- assessment by users
- assessment by colleagues: verbal and non-verbal

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[1] Between 1970 and 1994, VET students spent approximately two weeks in a workplace. According to VET-teachers, this was rather to be considered an "environmental practice", that aimed at giving the students a conception of what workplaces within the vocation looked like and the kind of jargon that was part of the workplace, rather than actually participating in the work (Lindberg, 2003).

[2] While apprenticeship in the U.K., as well as in many other countries, refers to a position as paid worker, the Swedish version of apprenticeship is framed within upper secondary school context, the apprentices thus being given a position as students instead of workers (Ds 1997:78).

[3] Their school-leaver certificate from comprehensive school was incomplete.

- responsibility for self-assessment
- assessment as increased responsibility

These aspects have been both supported and to some extent criticized by Tanggaard (2004). Her contribution to nuancing Kvale's findings especially shows that both verbal and non-verbal assessment by colleagues may be rather tough, at times even characterized as bullying. Further she shows that the increased responsibility may be unevenly distributed in relation to gender. This was the case in a study of apprentices in diary production, where only male apprentices received increased responsibility. This was because the increased responsibility and more complex assignments also were conceived of as related to physical strength. As female apprentices were considered weaker than male apprentices, the female apprentices were not given other than initial routine work disregarding of how long they had worked at the particular diary. Therefore they couldn't get access to the same progression in assignments as male apprenticeship, which in turn prepared female students only for less qualified positions.

In a British study, formal and informal aspects of assessment are taken as departure for a case study of motor vehicle apprenticeship (Colley & Jarvis 2007). In this case, informal assessment is related to mentoring, which they mean is mainly associated with personal relationships characterized by support and caring, rather than assessment. Formal assessment, on the other hand, points at certification and specified learning outcomes related to specific competencies and content. The formal assessment is related to national vocational qualifications (NVQ) and both national and regional assessors are involved in the procedures. The national assessors' work are framed by regulations related to specific qualifications for the assessors on the one hand and by regulated assignments related to the assessment procedures on the other. Beside this formal assessment, local assessment is expected by *informal verifiers*, who moderate assessment, and by assessors who use portfolios as basis for assessment of candidates. The results of their study show that informal and formal processes of assessment are intertwined – on local and regional as well as on national levels. The authors' conclusion is that

> It appears clear that there are a number of issues posed in thinking about attempts to ensure the rigour and transparency of competence-based assessment, and a recognition that these will only ever be given meaning through local instances of participation that bring them to life—but these instances may also, in doing so, subvert those attempts for better or for worse (Ibid., p. 311.

In a two connected Swedish studies of school-based upper secondary vocational education in the Hotel, restaurant and catering programme, Tsagalidis (2003 & 2008) explored similarities and differences between students' conceptions of what their teachers assess and what VET teachers actually assess. She founds that teachers and students to some extent had a common understanding of what was being assessed, but that one aspect was totally opaque for the students: conditions for the highest mark, Pass with Special Distinction, was acquaintance with the vocational culture. However, this was available only for students who worked part-time during weekends or during holidays although not specified, neither in national goals nor assessment criteria. In her second study, Tsagalidis focused on teachers' judgements. In video-stimulated recall sessions, VET-teachers were asked to assess (comment) students in video-recorded sequences of their work. Also in this study, she founds that for higher marks, what teacher assessed, reflect their vocational culture where experience is given a dominant position.

Our question is related to the Swedish apprenticeship model, where teachers are appointed the formal role of assessors, regarding both the kind of continuing assessment that is part of the follow-up of USVE-apprentices during their placement, and the final summative assessment when they are to assign a mark for the

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USVE-apprentices vocational knowing as it is defined in national syllabuses and assessment criteria, while they hardly see the apprentices in working situations at all. – *What characterizes the conditions for VET-teachers' assessment of students' vocational knowing in USVE-apprenticeship? What is being assessed and what kinds of evidence are used as a basis for follow-up and assessment?*

Our study – methods an data

This article is based on data produced during a follow-up study for the SNAE, aiming at illuminating pedagogical aspects of upper secondary apprenticeship during the national pilot project (Berglund & Lindberg, in press).

The rational for selecting participants for the study was based on the idea of exploring an assumed variation in the realisation of Swedish upper secondary apprenticeship. Thereby we wanted to be able to contribute with nuanced and rich descriptions. The variation we planned for was related to five factors, the first related to geographical area; the second to facilitator of school; and the others related to programmes: the students these recruited regarding gender; and the programme's historical relation to workplace-based learning.

In total, eleven schools participated, representing schools in urban and rural areas as well as small towns and municipal or independent facilitators. Further, three of fourteen vocational programmes were chosen: the Construction programme, the Health Care programme and the Business and Administration programme. The Construction programme is a programme that mainly recruits male students, whereas the Health Care programme mainly recruits female students, and the Business and Administration programme attracts both male (app. 35 per cent) and female students. Further, these three vocational areas have different relations to and traditions for workplace-based learning. The construction sector has a long tradition of post-secondary apprenticeship. The Swedish Construction Industry Training Board (BYN) has played a central role in this development (Berglund 2009). Hospitals and other caring institutions have a long history of practice as part of VET, although not in the form of apprenticeship (Lagström 2012), and within trade it is common to use short-term seasonal employees that need on-the-job training for particular assignments.

For the study, data were produced on two separate periods, from December 2009 to April 2010 and from January 2010 to May 2011. While the apprenticeship pilot project started in 2008, the data from the later period mainly relates to students during their final year of apprenticeship, while the initial data production was concentrated on the first and second year of apprenticeship. The types of data produced were the following:

- Group-interviews with various kinds of teachers involved in apprenticeship in school, methodologically inspired by studies on collective remembering (Konkola 2000; Lindberg 2007; Middleton & Edwards 1990; Wertsch 2002) with specific focus on firstly, how apprenticeship was implemented in the respective school; and secondly, on changes in the organisation over time;
- Interviews and conversations with apprentices as well as with their supervisors at work;
- Digital photos of school environments, students' assignments and instructions for students at work-places, and work environments;
- Local documents produced by schools or teachers – plans, templates for documentation of apprentices' work, matrixes for assessment of apprentices' work, and assignments for apprentices;
- Statistics on upper secondary apprenticeship from the SNAE; and
- A questionnaire to 136 apprentices: A day as apprentice.

In total, the audio-recorded data of 100 hours represent 40 visits to workplaces and 54 interviews. In this article, the focus is on results related to teachers' follow-up and assessment of the USVE-apprentices.

As a first step in processing data, documents, digital photos, and transcriptions of interviews were read comparatively in order to find similarities and differences within programmes as well as between programmes. The results from this work were organised in two themes described below: *Conditions for assessment and evaluation, and Procedures and tools for assessment and evaluation.*

A second step was to identify patterns in similarities and differences, for instance whether specific aspects of the theme Conditions for assessment were related to a certain programme or school or actors (teachers, supervisors), or whether specific procedures and tools for assessment could be related these.

Outcomes

Here, we initially describe the characteristics of the two main themes, Conditions for assessment and evaluation, and Procedures and tools for assessment and evaluation. Both themes relate to the follow-up and assessment of students' progress in vocational knowing and to the evaluation of what has been made available for them in the workplaces. Thereby, the follow-up relates both to the student and to the workplace, while assessment rather relates to marking the students vocational knowing.

The first theme is based on a) teachers' interpretations of the curricular guidelines that contribute to division of labour between school and workplaces; b) teachers' descriptions of their background regarding education and experiences; and c) of the supervisors' contributions. Also the second part is descriptive – variations in procedures and tools for assessment are described. Based on these descriptions, we construct two different ways of understanding the object for apprenticeship – in other words: two ways of conceptualizing the societal motive for introducing apprenticeship: employability.

Conditions for assessment and evaluations: VET at workplaces
The apprenticeship and the school-based track are both regulated by the same steering documents – the national curriculum, the goals for the respective programme and the syllabuses – with one exception: half of the programme for the USVE-apprenticeship track is to be realized as workplace-based learning (ordinance SFS 2007:1349). In the case all common subjects are accomplished in school, which we found was the only way the participating schools had chosen, about 80 per cent of the vocational subjects became the responsibility of the workplaces. The remaining 20 per cent were related to introductory courses within each vocational area, that is, basics of the respective vocational area, and issues related to security and environmental issues was what remained the VET-teachers' responsibility. So once the students had finished these introductory vocational courses, VET-teachers actually saw very little of apprentices' performance related to vocational content.

Regarding choices of workplaces, the geographical area of the school was of significance: schools in urban areas clearly had a broader choice of companies, enterprises or care-givers than was the case in rural areas where the options were limited. On the other hand, we also found examples related to rural areas when it was an obvious advantage for apprentices that the teacher, a parent, or the apprentice him/herself had a personal relation to an enterprise. The character of workplaces recruited differed between programmes, as well as the strategies for recruiting and matching workplaces and apprentices. While micro-companies dominated workplaces for both the Construction and the Business and Administration programmes, county councils dominated within the Health Care programme. Although small, some of the companies that took on apprentices from the Business and Administration programme were part of franchising chains. This was of significance, since these companies had resources to offer the apprentices, for example in form of introductory courses. Within the Construction programme, it was common that the companies recruited were part of the VET-teacher's personal

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network. This had consequences for teachers' efforts to match apprentices to workplaces: teachers were reluctant to send students they saw as dysfunctional to workplaces while this was seen as risking the teacher's future relation to the workplace.

Characteristic for companies taking on apprentices from both the Construction and the Business and Administration programmes was that they did so because they saw an opportunity of recruiting a future employee but also a contribution to production/service during the three year of apprenticeship. This was a matter that teachers emphasized in negotiations with companies about taking on apprentices[4]. Within the Health Care programme, social and health institutions have had a long tradition of VET-students coming for periods of practice and it is seen as part of the regular work. While most health care providers are public, this was an advantage in negotiations about apprentices. Despite the differences, all teachers mentioned the high amount of work connected to recruiting workplaces.

Also the processes of choosing workplaces for apprentices varied. The extremes in variation are here exemplified by the Business and Administration programme, with registers of companies and the kind of work they offer on the one hand, and schools, mainly in rural areas, where students had an agreement with a workplace already when entering the programme on the other. Teachers emphasized the importance of finding "the right place" (matching) for each student – often with the argument that this was crucial for whether apprenticeship would work or not.

These variations were of significance in relation to one aspect of teachers' assessment actions: evaluation of content of work made available for the students and thereby conditions for progress in vocational knowing. Some teachers did not want to risk loosing a workplace by demanding that the apprentices should be given a broader variation or more complex assignments. Others had considered a rotation, but of the same reasons chose not do so. Supervisors saw apprentices as an investment and did not want to engage if they could not rely on keeping them for all three years. Also apprentices themselves, who were offered the opportunity to work extra against payment, preferred staying on although they experienced that they learned nothing new. The extra money, and the security in having a job when they had finished school, contributed to their decision. However, in the Health Care programme, rotation was seen as the only possible solution. Apprentices in their first year were considered having neither the knowledge nor the experience needed for hospitals and therefore had to start in institutions for caring. Not until their third year hospitals were available for the apprentices.

The indications in the interviews with teachers and apprentices – monotonous assignments and little or no progress from the first to the second year, was confirmed in the questionnaire answered by 136 apprentices in other schools in 2010 than the ones in the main study. Although fewer, we however also found examples of strategic planning of the apprentices' assignments in relation to broadened or specialized vocational knowing based on an idea that the apprentices the enterprises took on should have access to the variation of projects the enterprise was involved in – recurring routine jobs as well as specialized. The owner of painting company with ten employees described that each apprentice had a main supervisor they followed. Whenever the company became contracted for less common projects, like putting up wallpaper – something that is seldom chosen nowadays, or using old techniques for painting – the apprentice was moved from his/her ordinary workplace and worked with a temporary supervisor. The main idea that guided this employer's planning of the apprentices' learning trajectories was that apprentices should get access to a variety of assignments – and thereby the knowing – within the area. Further, he emphasized economical thinking: when a project comes close to the end, neither employees nor apprentices "should leave the premises without carrying something in

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[4] In a report on Swedish modern apprenticeship, this is explicitly expressed as an advantage and as a motive for taking on apprentices (Stockholms Hantverksförening/Handkraft 2002)

their hands" (Interview, spring 2011). The point here was not to waste working hours on carrying things away or cleaning, but instead use time as effectively as possible.

The students that caused most administrative work for VET-teachers were those who either were not accepted as apprentices by the workplaces available, or who quit their apprenticeship period because of a dysfunctional relation to their supervisor, or were sent back to school by the workplace. We found that VET-teachers used one of the following strategies for these students. If the school also offered a school-based programme, the student was given vocational assignments to work with in school while waiting for the teacher to find another workplace. In some cases the teacher could also find an external project for the school, and in such cases the student was involved in this project. Sometimes this kind of school-based apprenticeship was given to students early in the programme, because their teacher assumed the student was not yet mature enough for a workplace, or – again – saw the student's behaviour as a risk for the relation to a workplace.

Supervisors

The supervisors for apprentices were of great importance for the outcomes. Nevertheless no formal qualifications are required of supervisors – an introductory course on supervision is commonly offered them (mainly related to curriculum and syllabuses). These kinds of courses are organised by the schools, but few supervisors attend them. Instead, teachers cope with this by preparing binders with documents concerning apprenticeship to deposit at the workplace. The school and the workplace make an agreement and sign a contract on practical matters, one of which is the person within the workplace that is appointed as the formal supervisor. In micro- as well as in small-size companies, this is mostly the owner of the company. Here we found that the person appointed as supervisor (the formal supervisor) commonly was not the one giving supervision (the actual supervisor). This had consequences for the apprenticeship since the formal supervisor was the one expected to attend the obligatory training of supervisors organised by school. Thereby the formal supervisor, who seldom or never worked with the apprentice, received the instructions needed for supervising, while the actual supervisor, working on daily basis with the apprentice, was not aware of the expectations related to supervision and received little or no information of how to use the instructions, information, and d.

VET teachers

When it comes to VET-teachers, we found that the staff employed as teachers involved in apprenticeship had various backgrounds. However, the conditions for those employed as VET-teachers in relation to the responsibilities assigned to them: organizing the apprenticeship as collaboration between school and workplaces as well as assessing and assigning marks to apprentices vocational knowing in relation to syllabuses, varied. Both the educational and experiential background varied significantly among those involved in upper secondary apprenticeship. Following types of teachers were represented in the study:

1. formally qualified VET-teachers, according to Swedish standards: a VET-education or equivalent within an area that is relevant for the studied programme, a minimum of four years of work-experience, required for entrance to VET-teacher education, and a VET-teacher education,
2. formally qualified VET-teachers as above, but representing a different vocational area than the programme in question – for example industrial engineering teacher working with apprentices in construction, or health care teacher working with apprentices in floristry,
3. persons employed as VET-teachers but without a VET-teacher education. Most of these had a relevant vocational education as well as working experience but we also found examples of secondary school teachers with the responsibilities of VET-teachers – for example a VET education in business and administration who had completed a teacher education for compulsory school,
4. persons with other education – general subject teachers, or counsellors – were involved in apprenticeship

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but with different responsibilities than VET-teachers.

Further, a few teachers also had a higher education. These various backgrounds contributed to differences in conditions for apprenticeship. A general finding was that the educational level of teachers varied between programmes. Teachers within the Health Care programme were those with the highest level of education, whereas those within the Construction programme had the lowest level of education.

The division of labour within the Business and Administration programme differed from the other programmes: general subject teachers and counsellors were responsible for the social and VET-teachers for the vocational follow-ups.

Follow-up and assessment of vocational learning – Trilateral talks
According to Swedish steering documents, teachers are the only officials who have the legal right to assign marks to students' achievement, but they are also obliged to continuously inform students about their progress. In policy documents, the follow‐up of apprentices learning is described in terms of *trilateral talks* involving the apprentice, supervisor and teacher. Although such conversations were included in our design for situations to observe in the project, we had few opportunities for such observations. On several occasions, these conversations had been re‐scheduled, or either the apprentice or the supervisor was absent‐ill or had forgotten the appointment. According to the teachers, this was a common phenomenon. VET‐teachers reported that administrative work, especially with absent apprentices or problems between workplace and apprentice, was time‐consuming, mostly at the sacrifice of these trilateral talks. Further, especially within the Construction programme, if the apprentice and his supervisor already had finished their work for the day on the specific construction site where the conversation was planned to take place, they had moved on to another site. Especially when worksites were located far from the school, it contributed to teachers spending much time on the road, rather than doing work the teachers felt more important. Other obstacles reported were changes of teacher, in which case the next teacher found it difficult to interpret previous documentation.

Depending on the combination of actors for the trilateral meetings intended for follow-up and assessment of apprentices' learning, the conditions for discussing the content of learning and the apprentices actual vocational knowing varied a lot. A best-case-scenario in the data included the apprentice, a VET‐teacher with a vocational education as well as work experience relevant for the programme, discussing with the formal supervisor that also was the actual supervisor. An example of this is a VET‐teacher who interviewed the supervisor by guiding him/her through the relevant syllabuses, complementing the formal text with examples of possible situations contextualized in the specific workplace. In these cases, the conversation moved between supervisor and apprentice, with commented examples from work‐situations and assignments, sometimes interrupted by a question from the teacher, e.g. "has she experienced an C.A.?"‐meaning cardiac arrest‐where teacher and supervisor shared meaning of the abbreviation. As knowledge of how to act when a situation of cardiac arrest is at hand was crucial for nurse assistants, they were able to find a solution for how the apprentice should be instructed at the ward, as this is a situation necessary for health care apprentices to be prepared for. A worst‐case‐scenario included the apprentice, a teacher or other staff from school and the formal supervisor (but not the actual supervisor). These conversations tended to focus on the apprentice's behaviour and social qualifications. In both cases the conversation was intended to either form the basis for further planning of needs of the apprentice in relation to the goals of the programme or to assign a grade to the apprentice's vocational knowing. However, the conditions for these were very different.

The tools used for follow‐up consisted of teacher constructed checklists or matrixes for aspects to assess. Characteristic for the checklists was that there were detailed lists of assignments, situations, or tools that the

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apprentices were expected to either do or otherwise experience, for instance by demonstrations. These were ticked off, thereby indicating that most important was that the apprentice had done or experienced the situation, but in the interviews with teachers and students about the use of these, we found few indications of discussions related to the qualities of the apprentices performances, or of the need of help or specific supervision in order to produce a better result. The matrixes for assessment mostly focused on social or behavioural aspects of the apprentice – we found few examples of aspects related to vocational knowing other than the checklists. However, we found a few also examples of a kind of combination of checklists and matrixes, with space for the teacher to write comments about the quality of each apprentice's work or result.

The main impression was that the intended trilateral meetings had low priority. In the interviews with apprentices, some reported that their first follow‑up had taken place as late as a few weeks before they finished the programme.

During the first part of the project, we found that most marks would not be assigned until the final semester. Therefore we had a special focus on this issue during the second part. In the final interviews with the apprentices, they confirmed that the marks were assigned by teachers in school and that they mostly had little or no idea of what they were based on, except for their results on written tests, in cases such had been used.

Nevertheless, besides these formal aspects of school practices of assessment, we also found indications of work‑based non‑formal assessment: apprentices being given more demanding assignments or responsibility, like working alone or being offered employment for weekends or holidays. However, although these were mentioned, we did not find that teachers explicitly used them as part of evidence in relation to assessment.

Conclusions

1. The obviously best-case scenario – in terms of conditions for informed assessment and marking of apprentice's learning – was the combination of a VET-teacher with a vocational basis related to the programme in question, in combination with a supervisor that worked on daily basis with the apprentice. Under such conditions, it was possible to discuss the content of work, the assignments and the tools and techniques used and to involve the apprentice. Also the trilateral conversations provided information for the enterprise to adjust assignments or to combine enterprises.

2. In other cases, the content of work – the basis for vocational knowing – was represented in a weaker way, until the worst-case scenario: a teacher representing another vocational area or a general subject discussing with a formal supervisor who seldom saw the student working. In these cases, what was possible for the teacher and supervisor to discuss was the apprentice's behaviour or social skills. Further, there was no feedback to the enterprise in relation to the relevance or level of the assignments for the apprentice's learning the vocation.

3. Most VET-teachers seem to have little experience of developing formats for documentation of students' learning and follow-up of assignments. Here we found differences between teachers representing different programmes, which can be related to literacy-based educational experiences.

4. Forms of informal assessment related to work-based learning seem to have been neglected or unnoticed, for instance the positive assessment that results in being given more demanding assignments, being left alone with the responsibility for the shop for some time or for an assignment, being offered jobs during weekends etc. (Kvale 2004; Tanggard 2004). However, negative assessment given by the workplace – like being rejected as apprentice by a workplace or the supervisor calling the school for a serious talk – is

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recognized.

5. W also found forms of assessment in school that were of significance for students' learning trajectories: the first assessment was related to whether a student got access to a workplace at all. We found examples of teachers who decided not to send students to a workplace, referring to that they didn't have the social skills needed. So the initial assessment was related to the student as a person, which was a kind of first *Pass-grade* that had to be achieved before the content of work in the workplace was made available for him or her – before the *student* could become an *apprentice*.

6. In interviews with apprentices we found that they had only vague ideas of what the basis was for supervisors' and teachers' follow-up and marking.

In relation to the findings by Colley and Jarvis (2007) we conclude that both formal and informal assessment was weakly developed during the pilot project on USVE-apprenticeship in Sweden. Instead, several examples show that teachers not only were expected to plan, organize and implement a new form of VET with very varying conditions but also to find quite new types of evidence of apprentices learning. In relation to Tsagalidis work (2003 & 2008), we found that the apprenticeship track during the pilot project has made the basis for assessment even more opaque for the apprentices than it was for the VET students in her study. These aspects need to be further and more systematically developed.

References

Berglund, Ingrid (2009). *Byggarbetsplatsen som skola – eller skolan som byggarbetsplats? En studie av byggnadsarbetares yrkesutbildning* [The construction-site as school – or school as construction-site? A study of the vocational education of construction workers. In Swedish]. Doktorsavhandlingar från institutionen för didaktik och pedagogiskt arbete 4. Stockholms universitet.

Berglund, Ingrid & Lindberg, Viveca (forthcoming). *Pedagogiskt och didaktiskt arbete i lärlingsförsöket* [Pedagogical work in the Swedish pilot project on upper secondary apprenticeship]. Stockholm.

Ds 1997:78. Gymnasieskola i ständig utveckling. [Upper secondary school in continuous development]. Stockholm: Ministry of Education.

Konkola, R. (2000). *Yhteismuistelu työyhteisön historiaan liittyvän aineiston keräämisen välineenä* [Collective remembering as tool for dataproduction in communities of work. In Finnish]. Working papers No. 3. Helsinki University.

Kvale, Steinar (2004). Praktikkens evalueringsformer [Forms of assessment in practice. In Danish]. *Uddannelse nr 10/2004: Forskning og erhvervsuddannelse.*
http://udd.uvm.dk/200410/udd200410-06.htm?menuid=4515 (retrieved 2009-10-02).

Lagström, Annica (2012). *Lärlingslärarens – en studie om vård- och yrkeslärares förändrade uppdrag i samband med införandet av den gymnasiala lärlingsutbildningen* [The apprenticeship programme teacher: A study of how the role of the vocational teacher is formulated in conjunction with the introduction of upper secondary school apprenticeships. In Swedish]. Institutionen för vårdvetenskap och hälsa, Sahlgrenska akademien vid Göteborgs universitet.

Larsson, L. (2001). *Industri- och hantverksutbildning under två sekel.* [Education for industry and craft during two centuries. In Swedish] Årsböcker i svensk undervisningshistoria, 194. Uppsala: Föreningen för svensk undervisningshistoria.

Lindberg, Viveca (2003). *Yrkesutbildning i omvandling. En studie av lärandepraktiker och kunskapstransformationer* [Vocational education in transition: A study of learning practices and knowledge transformations. In Swedish]. Studies in educational sciences, 64. Stockholm: HLS Förlag

Lundahl, Lisbeth (1998). Still the Stepchild of Swedish Educational Politics? Vocational Education and

Training in Sweden in the 1990s. In *TNTEE Publications Volume 1*, nr 1, August 1998

Middleton, D. & Edwards, D. (1990). Conversational remembering - A social psychological approach. In D. Middleton & D. Edwards (Eds.), *Collective remembering*. London: Sage.

Nilsson, Lennart (1981). *Yrkesutbildning i ett nutidshistoriskt perspektiv. Yrkesutbildningens utveckling från skråväsendets upphörande 1846 till 1980-talet samt tankar om framtida inriktning*. [Vocational education frm the perspective of contemporary history. The development of vocational education from the abolishment of the guilds in 1846 until the 1980s and some thoughts on future directions. In Swedish]. Göteborg: Acta Universitatis Gothoburgensis.

Olofsson, Jonas (2005). *Svensk yrkesutbildning. Vägval i internationell belysning* [Swedish vocational education. Choices illuminated by international research. In Swedish]. Stockholm: SNS förlag.

Prop. 2007/08:1. *Budgetpropositionen för 2008. Utgiftsområde 16* [Swedish Governmental Bill – Budget proposition for 2008]. Regeringen.

Prop. 2008/09:199. *Högre krav och kvalitet i den nya gymnasieskolan* [Swedish Governmental Bill – Higher demands and quality in upper secondary school]. Utbildningsdepartementet.

SFS 2007:1349. *Förordning om försöksverksamhet med gymnasial lärling* [Education Ordinance: The pilot project for upper secondary apprenticeship]. Utbildningsdepartementet.

SOU 2009:88. *Gymnasial lärling – hur blev det? Erfarenheter från det första försöksåret* [Upper secondary apprenticeship – experiences from the first year of the pilot project. In Swedish]. Delbetänkande av nationella lärlingskommittén.

SOU 2008:27. *Framtidsvägen – en reformerad gymnasieskola* [The road to the future – a reformed upper secondary school. In Swedish]. Betänkande av Gymnasieutredningen.

Skolverket (2012). *Gymnasial lärlingsutbildning de tre första åren. Deltagande, elevernas erfarenheter och studieresultat* [Upper secondary apprenticeship – the three initial years. Participation, students' experiences and their results. In Swedish]. Skolverkets rapport 373:2012.

Stockholms Hantverksförening/Handkraft (2002). *Nya möjligheter med en modern lärlingsutbildning* [New opportunities with a modern apprenticeship. In Swedish]. Stockholm: Stockholms Hantverksförening.

Tanggaard, Lene (2004). Evaluering som regulering af læring [Assessment as regulation of learning. In Danish]. *Tidsskrift for Arbejdsliv, årg. 6*, nr. 4,s. 57-75.

Wertsch, J. V. (2002). *Voices of collective remembering*. Cambridge, U.K. New York: Cambridge University Press.