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Titel på paper / Paper title: Learning goals for in-company training: Formulation and Practice	
Context <p>Danish vocational education is organized as a dual system, where the students spend approx. 2/3 of their education in training companies and receive remuneration. After an introductory basic course at a VET college, in-company periods and school-based periods alternate in blocks until the trade test. The training companies are responsible for the students' learning results during their training periods.</p> <p>In this context, the learning goals for in-company training are the competencies that the students need to achieve during the in-company periods. The purpose of the learning goals is to target and to indicate whether and how the student on the whole develops the intended competencies during the training.</p> <p>The learning goals are accompanied by "training declarations" to be sent to the college. Formally the training declarations are the only instruments that ensure the employer's feedback on the student's in-company development before the final trade test.</p>	
Abstract (<i>Se også udførligt dansk notat som bilag: Praktikmål: udformning og praksis</i>) <p>There is an increasing need for higher transparency and quality assurance of workplace learning, caused by increasing international exchange, higher student mobility between the educational institutions/programs and a growing number of frequent short-lasting in-company training periods.</p> <p>Companies ask for clarity of what the students have to learn in the workplace, and the colleges need to know what the students have learned in the companies, for planning and assuring that all students achieve their targeted competencies.</p>	
Problem & objectives <p>The learning goals for the in-company training periods could be keys to meet these needs. But in Denmark, there is great diversity between the trades and within the educational programs, as to how learning goals are formulated, which taxonomies are applied and how achievement is assessed.</p> <p>Within the frameworks of a Nordic initiative on the promotion of workplace learning (2013-2015), a Danish project wanted to identify a model that could lead to a more consistent and homogeneous application of in-company learning goals.</p> <p>Obstacles and prompting initiatives in Denmark were to be identified. The project aimed to point at activities that could be undertaken, if the Danish decision makers wanted to optimize the formulation of and practice with in-company learning goals.</p>	
Methodology <p>The Danish project members carried out a <i>practice-based survey</i>.</p> <p>A total of 19 sources covered work documents and digital platforms from legislation, research and practice, as well as reports from practice with learning goals in 3</p>	

professional fields: construction, electrician, social & health. Nordic/international inspiration and literature was adapted. External presenters, study visits and presentations by practitioners were part of the survey.

The data collection was processed into a work paper, which was updated throughout the entire process, concluding on discussions and findings during 8 seminars, with approx. 25 participants from the 3 professional fields.

New sources were added, as needs for new knowledge came up. Interim results led to further questions, which were treated in the Nordic context.

The conclusions were compared to the recent Danish VET quality reform.

Conclusions & perspectives

Finally, the project members pointed at 6 operational recommendations for the formulation and application of in-company learning goals.

If the decision makers are to heighten quality of VET in general, these decision makers must also address quality in workplace learning and the interaction between VET colleges and training companies.

A presentation in Nordic context indicated the relevance of the 6 recommendations for all Nordic countries, with different emphases and local adaptations to be undertaken. A transnational research project could inspire and monitor parallel processes for quality improvement. This paper and the full Danish report can be considered as a pre-study.

Literature:

- The Danish Qualifications Framework for Lifelong Learning, ufm.dk; Introduktion til den danske kvalifikationsramme for livslang læring, uvm.dk
- Danmarks Evalueringsinstitut EVA, "Skolepraktik i erhvervsuddannelserne", 2011; "Evaluering af sammenhæng mellem skole og praktikvirksomhed", 2013;
- "Taksonomisk beskrivelsesramme til grundfagenes fagbilag", juni 2014, uvm.dk
- "Generelt om viden, færdigheder og kompetencer - beskrivelse af de 3 begreber", emu.dk
- "Apprenticeships in work-based learning", Cedefop, based on strategic papers on promoting apprenticeship
- Danish VET reform, Feb. 2014, implemented August 2015
- Danish APL-project on workplace learning, www.arbejdspladslaering.dk (2013-2015), part of the Nordic initiative on workplace learning for Sustainable Nordic Welfare, Nordic Council of Ministers
- "Udspil om læring i arbejdslivet", red. Illeris, 2002
- "Fra teori til praksis", Aarkrog, 2012
- "Når læring går på arbejde", Elkjær, 2005
- "Kvalitet i fag- og yrkesopplæringen", rapport 3 fra studie, 2011-2015

Keywords (3-5):

Quality assurance of in-company training, learning goals, learning outcomes, interaction between VET college and training company, student-centered learning

Learning goals for in-company training: Formulation and Practice

1. Introduction

This paper is based on a 'result report' (Oct. 2015), one of the final Danish products within the frameworks of a major Nordic initiative on workplace learning, 2013-2015. In this context workplace learning represents the in-company training periods of vocational education in (more or less) dual vocational systems.

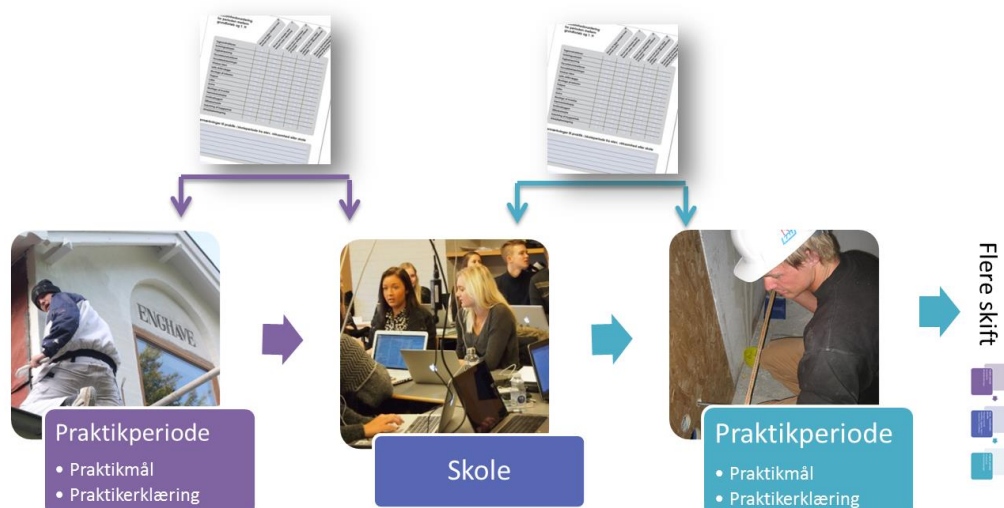
The Danish part of the project wanted to identify a generic model that could lead to a more consistent and homogeneous application of "in-company learning goals". The purpose of the learning goals focus students' progression and to indicate whether and how the student on the whole develops as intended during the training.

During the project it became necessary to rethink the goal of a generic model and redirect to an identification of obstacles and beneficial provisions, when elaborating and applying learning goals. A practice-based survey led to conclusions and recommendations, which are unfolded in the following. The survey was supplemented with trial-runs in practice and the film ["Learning goals in Northern light"](#) (2015).

The result report was elaborated by Danish country coordinator for the project, Regina Lamscheck-Nielsen, Moeve aps, loyal to the findings and reviews during the process, as described under methodology.

2. Background & context

In-company learning goals are those competencies that the students have to achieve during their in-company training periods¹. In Denmark, the responsible authority for formulation and practice of learning goals are the social partners from each trade - in daily operation their "trade committees" secretaries.



Lamscheck-Nielsen, 2014

The learning goals are formulated by these trade committees for their own specific educational programs, as a part of the guiding regulations ("uddannelsesordninger").

The purpose of learning goals is to indicate whether and how the student develops the targeted competencies during the in-company training periods and on which of the pre-defined levels. The employer/trainer has to assess the learning goals in "training declarations", in dialogue with the student, and as a minimum after each training period. These declarations are dispatched to the college. Ideally, the college adapts their teaching during the school periods out of consideration for the declarations, while the companies' trainers use the declarations as a starting point when planning the next training periods with the students.

Thus, the adaptation of learning goals fulfills a kind of formative evaluation, whose results may cause adjustments of the training and/or teaching during the education. Formally, training declarations are the only instruments that ensure the employers' assessments before the final trade test.

3. Needs & problems

There is an increasing need for higher transparency and quality assurance of workplace learning, caused by increasing international exchange, more student mobility between the educational programs and a growing number of frequent short-lasting in-company training periods, alternating with periods in school-based training centers.

Companies - especially new training companies - ask for clarity of what the students have to learn in the workplace, while colleges need to know what the students have learned in the companies, in order to be able to plan and assure that all students achieve their targeted competencies.

In all cases, the formal learning goals for the in-company training periods can be keys to meet these needs and to tighten the link between college and training company.

In Denmark until now, there has been a great diversity between the trades and within the educational programs, as to how learning goals are formulated, which taxonomies are applied and how the achievement is assessed. The applied taxonomies (= levels of students' performances) vary widely among the educational programs. Besides that, there may be regional differences within the single educational program in how and to which degree the learning goals are in use locally.

More uniformity across the trades and across geography would ensure a fair and more transparent treatment of the students.

On the other hand, the Danish system offers the basic frameworks to fulfill the outlined needs:

- Legislation with explicitly mentioned learning goals
- Nation-wide freely available online platform Elevplan for individual data sharing between college/company/student
- Administrative database for expert users, EUD-adm, with the formal guiding regulations
- Financially supported educational modules for trainers, as well as for instructors in training centers
- Joint official competence term (in NQF)

But the implementation degree differs widely and is in general too low. Practitioners as the consultants of training companies, VET teachers, student counselors etc. typically are met by an assumption that a consistent use of learning goals and mandatory empowerment of trainers would afflict companies' resources, which would lead to a lower number of training companies.

Furthermore, it is not clarified how frameworks and resources at colleges, school-based training centers and training companies should be adapted to offer sufficient time, financial resources and competencies for a student-centered mutual exchange.

Current Danish processes in school-based training centers might contribute to a general quality rise, as learning goals locally are unavoidable keys for quality assurance.

4. Organization

The Danish project group consisted of members from the 3 vocational fields electrician, construction work and social & health. The fields were represented by practitioners from trade committees, training companies and school-based training centers, respectively VET colleges. The project coordinator reported and processed work papers during the survey. A steering group from the Ministry of Education followed the process as observers.

All sources were freely available for the project members via a common virtual data archive. Beyond the survey, the members were in contact with each other during joint project activities, such as Nordic conferences, virtual meetings and on co-creation of the nationwide Danish conference.

The work paper was finally approved in August 2015 by all participants, except of the trade committees for the electricians, respectively social & health. These trade committees chose an indirect and information-receiving position in the project because of their own work pressure.

5. Methodology: A practice-based survey

The process

The project conducted a 'practice-based survey', resulting in a joint report as one of the major outputs.

The methodology for this process is based on community action researchⁱⁱ (Senge/Scharmer, 2001): Members of a network across organizations are committed to producing knowledge jointly, comparing practice with each other and reflecting collectively on interim results. At the same time, local practice is inspired, improved and contributes to the collective process, vice versa. External consultants/researchers assist and challenge the process.

In this case, the work paper was processed as following:

A total of 19 sources covered work documents and digital platforms from legislation, research and practice, as well as reports from practice with learning goals in 3 professional fields: construction, electrician, social & health. Nordic/international inspiration and literature was added. External presenters, study visits and presentations by practitioners were part of the survey.

The data collection was processed into a work paper, which was revised throughout the entire process, concluding on discussions and findings during 8 structured "development seminars", with approx. 25 participants from the 3 professional fields.

New sources were added, as the need for new knowledge came up. Interim results led to further questions, which were treated in the Nordic context of the project.

The conclusions were compared to the requirements from the recent Danish VET reformⁱⁱⁱ (Feb. 2014, implemented Aug. 2015), having quality development on its agenda.

The pedagogical reference frame

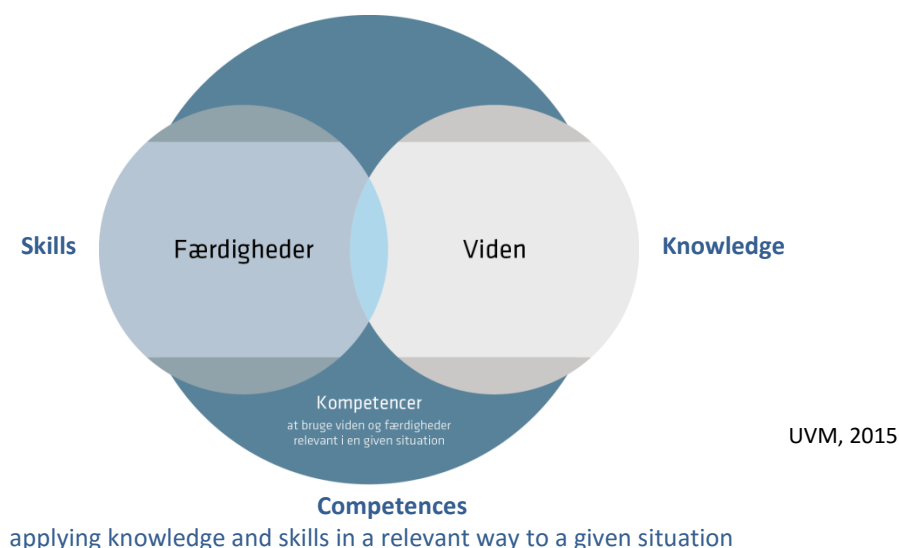
The pedagogical framing of the survey was undertaken by regarding central Danish principles for workplace learning, as well as referring to national models for crucial terms, such as ‘competence’ and learning taxonomies.

The sources were mirrored in these principles and understandings during the development seminars.

Principles The reference frame is unfolded in the 13 thematic papers^{iv}, describing principles such as the social partners’ as authorities for work place learning and the regulations, the training companies’ autonomous translations of learning goals to work tasks, etc.

Terms The project members referred to the official Danish model for a common understanding of ‘competence’, as described in the Danish National Qualifications Framework.

Another important reference frame was the official taxonomy as described in the main law of VET^v: “Beginner - experienced - advanced - expert”



6. Conclusions: 6 recommendations and process improvement

Based on the findings of the practice-based survey, it could be stated that the Danish VET system is provided with a range of excellent methods to support a professional interaction between colleges and training companies. In this interaction, well-working learning goals play an important role.

These methods are also described in the 13 thematic papers^{vi}, which have been produced by the Danish project members as a contribution to the Nordic framework of the project.

Principles and models for uniform formulations exist, such as for the competence term, in the official steering documents of VET.

But these principles and models are only partly implemented!

Thus, the problem is not specifically about innovation and testing, but about a *consistent, trade-crossing* and *broad* implementation of appropriate formulations of learning goals and appropriate application of learning goals in practice, in all regions and in all educational programs, through all phases of the educational programs.

- *Consistent* means in correlation with key terms and principles of all steering documents in vocational education
- *Trade-crossing* means a higher degree of uniformity across the trades
- *Broad* means geographical dispersion in the specific educational programs

Such an implementation would increase the probability that all students would experience fair treatment, as the different teachers and trainers would have common guidelines.

The students, also the increasing number of mobility students from abroad, would be met with more transparency as to what they are supposed to learn during their in-company training in Denmark.

The students themselves ask for more clearness about *what* they need to learn *when* (during which college / training company periods) and *on which level* they are in their professional development.

6 Recommendations

If the formal decision makers want/need to heighten the quality of VET in general, these decision makers must - according to the project members - also relate to what happens qualitatively during workplace learning and to the interaction between VET colleges and training companies.

Thus, the project group came up with 6 recommendations, should the trade committees - as the mainly responsible decision makers want to optimize the formulation of and practice with learning goals.

These 6 recommendations are accompanied by operational proposals for quality procedures, as listed in the table below. The project members' considerations and the conclusions behind the 6 recommendations can be tracked to their sources listed in annex 1.

During the work process, the project members experienced that there are obviously different understandings from different key stakeholders of the basic competence term in Danish VET.

To be able to hit the mark with the 6 recommendations, it is fundamentally important to achieve a joint understanding of the basic terms. The project group finds it essential that all involved key experts - among the trade committees, among the ministry's consultants and among the VET colleges' persons in charge of local education plans - operate with a joint understanding and interpretation of the term 'competence'.

Steering documents such as the guiding regulations with learning goals are elaborated in a complex process, with mutual dependency between the numerous involved experts and stakeholders. A common understanding of fundamental terms is a significant quality indicator.

The interdependent procedure and flow for the description of steering documents should be outlined clearly, in order to identify issues or passages for improvement.

6 RECOMMENDATIONS	Proposals for operational implementation
1) <i>must be user-friendly for companies, students and colleges / school-based training centers</i>	<p>Learning goals have to</p> <ul style="list-style-type: none"> • be formulated in an operational and action-directing way • be used as dialogue tools • be short sentences, low "lix-figures" ("læsbarehedsindeks" - readability index) • match the logic of the profession's production, regarding the distribution of the learning goals along the timeline of the educational program^{vii} • be applicable both virtually and as analogue versions • be typed into the administrative platform eud-adm (Elevplan compability)

	<ul style="list-style-type: none"> training declarations have to mirror the results from the assessment of the learning goals during the given training period 		
2) <i>must be formulated in a way that they can support students' learning in practice – in formulations and in taxonomies</i>	<ul style="list-style-type: none"> Clarification of the competence term behind the learning goals Have to be formulated with "the student can..." Personal as well as social competences in all educational programs Condition: The training company is first and foremost a workplace! 		
3) <i>must apply one universally valid taxonomy across educational programs/vocations</i>	<p>Agreement can only be achieved in dialogue with and among the trade committees!</p> <ul style="list-style-type: none"> More dialogue and consensus between the trade committees A mutual dialogue among the trade committees, based on a draft for a common taxonomy Quality assurance of a common taxonomy to be undertaken (use also this project's materials) To mirror qualitatively the students' progression of learning: To ensure that the taxonomy supports the student in process thinking and reflection Check the relevance for a quantification (see business education) 		
4) <i>must refer to the definition of the Danish national Qualifications Framework NQF</i>	"Knowledge" (profession, society)	"Skills" (competences of the vocation, choosing tools, analysing problems, assessing quality)	"Competences" (Responsibility, cross-professionalism, active learning, planning, developing)
	1) Outlining the procedure for elaboration of regulations and learning goals 2) Clarification of joint understanding of the official Danish competence term ^{viii}		
5) <i>must be possible to be operated via joint electronic platform for college, company, student and school-based training center (Elevplan)</i>	3) Use of Elevplan – also mobile m.elevplan.dk , as far as possible 4) Functionalities for in-company training: User-friendly and user-tested 5) Consideration of which data systems the platform should and can support and correspond with 6) Elevplan with a more attractive graphic interface 7) Difficulty: Major enterprises and municipalities, obligated to use own systems 8) Improvement of administrative platform Eud-admin as a data hub		
6) <i>must be quality-assured and have to be maintained</i>	<ul style="list-style-type: none"> Ongoing actualization of professional content: 1x / year and/or when revising the regulation Reports from local educational councils (LUU): Reports on technical renewals In dialogue with the trade organizations Include the trade's regulatives Under the responsibility of the trade committees, with involvement of practitioners: School-based training centers, colleges' company networks 		

Process improvement - possible steps to take

How could such an improvement as a whole proceed?

Innovation projects for new development do not seem to be necessary, whereas there is a need for a motivated initiative towards an increased coordination and common decision making among key experts from the trade committees, the ministry of education and vocational colleges.

With joint will and efforts, an initiative on *implementation* of previously developed methods could have an impact.

Other countries report on in-depth preparations and negotiations with involvement of all parties. Experiences show that improvement and a higher degree of uniformity and transparency in the standards cannot be achieved in short time. The organizations of the labor market must reach consensus on solutions that make sense for all of them across the trades.

Finland attained a joint understanding and implementation of 'competence' in a long process where the social partners finally agreed. The Finnish competence term has existed for more than 19 years. But as late as 2015, it has become integrated in law and ordinances, to be followed by everybody working with ordinances and regulations.

In Germany, a research project (2007-11) was the basis for negotiations between the social partners on nationwide level with the aim of agreeing on a template and common principles for all regulations (2015).

The role of the VET colleges should not be underestimated.

First of all, the colleges' consultants of training companies and the conditions and framework of their work are important.

The new school-based training centers are achieving high competences in working with learning goals, because of their need to apply learning goals effectively in practice.

Furthermore, the capacity of the main courses' teachers for applying the results from training declarations should be examined.

Finally, of course all practitioners should become involved in testing the applicability of new procedures. Practitioners in this context are in-company trainers, students, consultants of training companies, VET teachers and VET colleges' administrative supporters of training companies (LOP).

7. Nordic perspectives

The Nordic part of the project has been a platform for reflection as well as contributing with facts from the Nordic VET systems to the 19 sources. Thus, the Nordic framework has contributed to the 6 recommendations.

Conversely, the 6 recommendations have been presented in a transnational and interactive workshop (4th Dec. 2015).

The feedback of the Nordic participants indicated the relevance of the 6 recommendations for all Nordic countries, with different emphases and local adaptations to be undertaken. A transnational research project could inspire and monitor parallel processes for quality improvement. This paper and the full Danish result report can be considered as a pre-study.



Annex (1): 19 sources for the practice-based survey

The 19 sources covering contributions from Danish and international legislation, research and practice, as well as reports from practice with learning goals in 3 professional fields: construction, electrician, social & health.

1. Reports from Danish Evaluation Institute, incl. recommendations for work place learning
2. Learning goals for Social & Health, presentation by practitioners, April 14
3. Learning goals for the construction sector, logbooks, presentations from practice, 2014
4. Learning goals for electricians, presentation from practice, Jan. 2014
5. New model for taxonomy, Industrial educations, Jan. 14
6. 'Model Leif Rye Hauerslev', phd-study, April 2014
7. New nationwide German model for regulations, proposal for legislation^{ix}
8. Eud-adm.dk with guiding regulations
9. Elevplan's reproduction of learning goals
10. Overview on applied taxonomies, Herningsholm^x, Feb. 2013
11. Norwegian report "Kvaliteit i fag- og yrkesopplæringen", part 3 from study, 2011-2015, 1.2.1 "Danish inspiration"
12. Nordic inspiration: Contributions from the Nordic partners on their taxonomies and competence models
13. Inspiration from Switzerland: Regulations and educational plans from the 3 professional fields, webinar, autumn 14
14. Inspiration from Luxembourg: New regulations, spring 2015
15. Overview on applied taxonomies, as freely accessible through the trade committees' websites, Jan. 15
16. Results from EREIVET, EU-project on elaboration and use of joint transnational learning goals, Social & Health, April 15
17. Competence term in guidelines for basic subjects in VET
18. Outlined procedure for the elaboration of regulations and learning goals, March 15
19. Interview with Vibe Aarkrog, pedagogical consultant, Aarhus University and MBUL regarding Danish competence term, NQF, ECVET, July 15

Each of the sources was discussed in its essence during the seminars. The project members concluded on suitability, feasibility and promoting aspects of the sources, regarding the goals of the project. The Danish research report contains the project members' findings for the essence of each source.

References

ⁱ The final learning outcomes ("kompetencemål") for the educational programs are described in the ordinances for the educational programs. The learning outcomes are based on the theoretical and the practical parts of the educations. The in-company learning goals are those competencies that the students have to achieve during their in-company training periods to be able to achieve the final learning outcomes at the end of the education.

ⁱⁱ Senge / Scharmer, adapted by Lamscheck-Nielsen, 2011 <http://www.skolepraktik.dk/perspektiver/5-metoder/b-community-act.-reserach.aspx>

ⁱⁱⁱ Improving Vocational Education and Training (June 2014) <http://eng.uvm.dk/-/media/UVM/Filer/English/PDF/140708-Improving-Vocational-Education-and-Training.ashx>

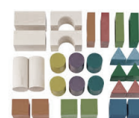
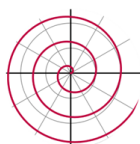
^{iv} See reference, no. VI

^v Bekendtgørelse om erhvervsuddannelser, 16. juni 2014, § 34,

<https://www.retsinformation.dk/Forms/R0710.aspx?id=164802>

^{vi} Elaborated during the project, contributing to the Nordic project frame, Regina Lamscheck-Nielsen, with reviews from the project members: <http://arbejdspladslaering.dk/category/resultater/nordisk-inspiration/>

^{vii} Work model, Lamscheck-Nielsen, 2014:



"Iterativ progression"	"Lineær progression"	"Modulvis progression"
Fx SOSU, industri	Fx elektriker, gastronomi	Fx byggeuddannelser
De samme praktikmål for alle praktikperioder. Sværhedsgrad stigende.	Praktikmålene bygger ovenpå hinanden, evt. med certificeringer undervejs.	De samme praktikmål for alle praktikperioder. Samme sværhedsgrad.
Eleven udfører de samme opgaver, dog på et støt stigende kompleksitetsniveau.	Elevopgaverne bliver mere og mere avanceret. Eleven skal have opnået bestemte færdigheder for at kunne udføre de næste opgaver.	Opgaverne er i princippet uafhængige af hinanden og kan løses mere eller mindre uafhængigt af hinanden.
Dilemma: Driften og forefaldende opgaver styrer!		
Praktikerklæringer: SOSU & Industri	Praktikerklæringer: Elektriker & gastro	Praktikerklæringer: Byggeri

Forskellige udformninger for praktikmålsbeskrivelser - Regina Lamscheck-Nielsen, Tromsø, sept. 2014

^{viii} Described within the frames of the Danish Qualifications Framework for Lifelong Learning:

<http://uvm.dk/Service/Publikationer/Publikationer/Uddannelse-og-undervisning-for-voksne/2010/kvalifikationsramme-stor?Mode=full>

^{ix} Empfehlung des Hauptausschusses, 26. Juni 2014 "Struktur und Gestaltung von Ausbildungsordnungen – Ausbildungsberufsbild, Ausbildungsrahmenplan"

^x <http://skolepraktik.dk/resultatboks/skolepraktik/praktikm%C3%A5l-i-brug.aspx>