

COMMET

Transfer of new methods to identify competence based on the example of two professions, i.e. the mechatronics engineer and a lathe operator

Project No. DE/07/LLP-LdV/TOI/147036 COMMET

Report on work package V: Interviews in companies in the regional metals and electrical industries to examine the practical applicability of the competence grids developed
(as per: 30 September 2009)

Bildungswerk der Wirtschaft in Berlin und Brandenburg e.V.

Within the scope of the COMMET project, qualitative expert interviews were conducted in order to assess the quality of the instruments developed by the European project partners to present competence and in order to gather proposals for improvements and/or enhancements. The talks with those in charge of HR and vocational training in the regional companies were held on the basis of the competence grids for mechatronics engineers and lathe operators in order to integrate hand—on expert knowledge into the project results. It was interesting to see how the practitioners assessed the content, structure and practical applicability of the current drafts for the occupational competence grids. This was supplemented by ideas regarding various options for application in HR, especially as a support for work references / certificates (*europass*). Key instruments and tasks in the field of personnel management were also discussed: job description, personnel recruitment and selection, personnel assessment, remuneration, personnel development (skill/talent management) as well as the assessment of the consequences of layoffs.

The following companies¹ were polled in Berlin and Brandenburg:

- Gühring G-ELIT Präzisionswerkzeuge GmbH, 13407 Berlin
- P&G Gillette Deutschland GmbH & Co. oHG, 12099 Berlin
- GTMB Metallteilfertigung GmbH, 14929 Treuenbrietzen
- EBK Holding, 14513 Teltow

Staff in charge of personnel and training (Gühring, Gillette), works managers (GTMB, EBK) and company directors (EBK) were polled at the companies.

Overview of the results

To sum up, it can be said that all those polled expressed keen interest in the subject of competence. For practitioners, the focus is on the in-house application of competence grids. Contrary to the educational and political discussion, the "competence" topic is more or less an integral part of the

¹ A short profile of the companies polled can be found in the appendix.

"remuneration" topic for HR staff in companies. Whilst this is frequently ignored in educational research, it must be included in considerations for practical application.

"You can ask for anything as long as you are willing to pay for it... in this case, we will have difficulties on a company level." (Interview 2)

With a view to the **competence grid** developed for **lathe operators and mechatronics engineers**, the **following key questions were discussed with the dialogue partners**:

- Have the spheres of activity (taken and compiled from the vocational education framework plans and the framework curricula for vocational training and education) been correctly drawn up and demarcated?
- Have the process phases (parts of the complete activity) been correctly described?
- Are the competence dimensions (specialist competence, methodological competence, social competence, personal competence) plausible?
- Are the competence grids suitable, for instance, as certificate supplements for europass?
- Are there other fields of HR management where the competence grids can be used?

The *definition of spheres of activity* was classified as correct. One dialogue partner explicitly pointed out that the method of deriving the spheres of activity from the vocational education framework plans and the framework curricula for vocational training and education was a particularly good approach because learning fields and goals, along with the competence to be taught, are already described there as a standard for certain vocational qualifications. The reason for the approval of the formulation of the spheres of activity is probably also due to the dialogue partners' familiarity with these descriptions - this is especially the case when it comes to those in charge of vocational training and education. It was emphasised here that in addition to the knowledge and skills directly related to a job, it was also important to observe other competences. One company compiles skills in the form of a "training matrix". Taking other competences into consideration was accepted as a good suggestion.

"That's a vocational training profile according to the vocational training contract. The other thing is the actual activity." (Interview 4)

"Vocational training is as complex as possible ... and afterwards in the actual job at the company, further specialisation takes place ... and this is reflected in the training matrix." (Interview 4)

Those interviewed also clearly understood the analytical break-down of the complete activity into individual *process phases* (analysis, planning, performance, control, documentation, evaluation). The phase break-down was confirmed in the form proposed and seen to be relevant although there was different weighting in the routine work of the different occupations examined. This means, for instance, that a qualified mechatronics engineer has or should have mastered the competences

defined. As a result of the respective area of application, however, different areas of focus then develop over the course of work experience, e.g. control of work results in quality assurance, i.e. the "control" process phase. With a view to the process phases, a suggestion was made to additionally consider other workflows specifically related to the production process.

No critical statements were made regarding the *competence dimensions* (specialist and methodological competence, social and personal competence). However, those polled did emphasise that it would be good to achieve a uniform demarcation and/or definition of competence fields in different framework requirements (e.g. vocational training framework plans, qualification frameworks, etc.). However, practitioners are used to different structures and requirements and could also use these flexibly in the respective context. What is important are clear definitions. The "methodological competence" category was questioned in the discussion because methodological skills and knowledge does not appear to make much sense in a job without a specialist reference. In this respect, breaking down specialist competence into specialist knowledge (cognitive) and specialist skills (practical, manual) appears to be more conceivable. Knowledge and skills can also refer to specific devices and machines or machine controllers (from certain manufacturers).

"I consider that to be important also for personnel development ... a shift manager should have both technical competence and social competence. That's why the question of requirements is important. What must a shift manager be able to do?" (Interview 4)

"The team co-ordinator and the production foreman are allocated to 4 in terms of specialist competence. That's because he prepares - that also fits with a view to cognitive skills, but when it comes to communication, then I have to go down a bit ... like a Lego block ... just like when leading staff, I have to make a distinction: Is he guiding them on a technical level only or is he guiding them with a view to discipline." (Interview 1)

When using competence profiles, a clear distinction must be made between the different activities: production planning and work preparation, as well as the production of tools or specific machines and systems (e.g. in automated production) are marked by more vague fields of knowledge. The requirements are high in all the fields of competence. This area classified as "Service" is marked by personalised knowledge and skills. These staff are difficult to replace and determine the scope which a company has when soliciting orders. In production, on the other hand, knowledge is more formalised and staff are easier to replace. A distinction must be made here between fitters and operators. With a view to the activity, a distinction must be made between automated production and manual production. In the case of manual production, the fitter, for instance, has a managerial function because work tasks have to be practiced with employees. The competences required vary accordingly.

Possibilities for using the competence grids for PR work in companies

The competence grids developed in COMMET provide a set of information regarding the competences of an individual, group, organisation or the competences required for a task or for a workplace. This information is broken down according to spheres of activity, process phases and competence dimensions. This information can be arranged as requirements profiles when dealing with the requirements which a workplace, job or specific task demands of the employee, or as ability profiles when it comes to the abilities and skills (i.e. competences) which an employee has. Those polled believe that competence grids or profiles can be used *in all phases of HR work*:

- Job descriptions according to areas of work /spheres of activity, competence dimensions and process phases
- Job evaluation, e.g. using an analytical workplace evaluation like sometimes used in collective wage agreements, but also for evaluating civil servant jobs in the public sector
- Personnel recruitment and selection
- Support for personnel recruitment within networks (e.g. for SMEs or in the case of more extensive co-operation between large-scale contractees and contractors/contract manufacturers)
- Personnel assessments, both in terms of work performance assessment as well as for assessing potential
- Determination of remuneration, both with a view to basic remuneration and to systematic performance evaluation
- Personnel development, in this case, skill and team management too
- Organisation design, e.g. within the scope of job formation
- Support for business development, if, for example, the competences are integrated into the documentation of the management process and of the quality assurance process
- Assessment of the consequences of layoffs (with a view to protecting and improving in-house competences)
- Work references / certificates, e.g. within the scope of *europass*
- Measuring individual, collective and organisational competence (as a kind of human capital balance sheet).

Those polled were familiar with the *diverse use of competence descriptions*: The present workforce can be described in view of existing competences, e.g. using the employees' competence profiles. When it comes to qualitative planning of staff requirements, it is also necessary to describe the competence which a job demands (*requirements profiles*). These do not have to be identical to the competences of the job holder (*ability profiles*). The difference between the two can be used to derive measures for personnel development, but also for transfers. Personnel recruitment considers both the requirements profiles, which result from the activity and/or job descriptions, and the

applicant's ability profiles, which have to be identified. A central task when selecting staff is to identify whether the applicant has the competence required. If shortcomings exist in the ability profiles, these must be set off within the scope of initial job training by way of suitable staff support and personnel development measures.

The analysis of the competence documents (e.g. in a training matrix) can over the course of time provide information for developing requirements for staff and for shaping in-house knowledge management. When it comes to the training matrix, one of the companies polled had introduced an evaluation of competence on four levels: (1) Basic knowledge, (2) Process execution under supervision, (3) Independence in the specific activity, (4) Ability to convey knowledge of the process in question. This matrix can be used both to search for suitable staff and to document the competences available in the company and to determine remuneration. Those polled, however, did point out that employees in production especially often preferred a simple, variable wage system linked to objective criteria (piece wage). Transparency and fairness were important.

"What is needed is a guideline that can be used as a basis and which another superior can use... these are the levels, these are the contents, that's the reason for wage classification ... that can certainly be made public." (Interview 3)

With a view to knowledge management, it is obviously important to develop practically suitable media which combine the information from employee files (e.g. certificates of training) with the production-related knowledge matrix. Such electronic documentation already begins with the job application. Several companies emphasise how important it is to cover their own HR demand with trainees who have completed vocational training in the company. This is where acceptance exams, talks with the people involved and their parents, trial days, etc. come into play. Work experience for school goers and experience as a works student can pave the way for a job later.

All the companies polled welcomed the use of competence grids or profiles, respectively, for evaluating (both for self-assessment by staff and for assessment by superiors) and for developing personnel. According to those polled, almost any kind of standardisation is helpful.

"I can adopt a more modular approach here, by saying: it fits – it doesn't fit." (Interview 2)

"The more precisely a job is described, the more precisely I can search for or train the employee." (Interview 3)

Generally speaking, the different "basic applications" of competence descriptions are distinguished as follows:

- *related to the occupation field*, as a description of a formal, occupational competence; this can be both a target competence or an as-is competence.
- *related to a company, area or workplace*, as a description of target competence that is related to a certain activity (or role).
- *individual-related* competence, in other words, the as-is competence of a certain individual (could also be a group or a department). This competence is usually assigned to the employee who has a certain qualification or who works at a certain workplace. If a difference exists between the target competence and the as-is competence, this provides a starting point for personnel development.

Qualitative personnel planning and the preparation of recruitment procedures are ideally carried out using competence profiles (requirements profiles). One possible approach could be to first distinguish the areas and/or roles which are to be drawn up for a competence profile. These can be work groups (teams), company departments, sub-operations or operations of a company, however, they can also be groups of employees or fields of activity. The spheres of activity are then determined. Each sphere of activity covers different activity phases or process levels. Each of the spheres of activity selected must be evaluated in terms of competence dimensions (e.g. specialist competence, personal competence) according to activity phases. Each competence can then be rated with a view to the respective sphere of activity and activity phase on the basis of a scale that must be defined. It is now possible to derive average values from the individual evaluations (if necessary, according to the weighting of the individual evaluations). These average values refer, for instance, to a specific sphere of activity, a competence dimension or also to the entire level. Using the grid, the manifestation of competences can be assessed in different "dimensions".

Basing base the competence profiles on vocational education plans was generally seen to be a good approach. However, it was suggested that additional roles (security officer, product manager, quality manager, etc.) be included in the description. It should be possible to design the knowledge competence field especially just as flexible as the process phases. There is hence a clear interest in more specifics in the competence descriptions even though the competences themselves are assigned to the individuals in such a manner as retrievable knowledge that they should support use in variable situations. This, of course, cannot be reflected in detail in general competence profiles.

europass certificate supplement

None of the dialogue partners were familiar with the europass tool. Following suitable explanation, the practitioners saw the competence grids, due to their complexity, as being less suitable as a tool for explaining certificates for the purpose of europass. However, it could not be ruled out that an addressee (e.g. an employer in another European country) could be interested in such an in-depth and analytic description of occupational competence. The europass certificate supplements² are much shorter and provide the reader with a compact overview of the competences specific to the occupation. The competence grids developed within the scope of COMMET could hence provide supplementary information (when needed), however, they do seem to be primarily suitable for use in companies.

Complexity and parallelism of competence instruments

The interview partners were not bothered by the different instruments for describing and evaluating competence (e.g. competence-orientated qualifications framework, competence-based wage classification criteria) since the respective use must be examined. Higher-level qualification frameworks are considered by the practitioners to be more suitable for communication between companies (e.g. job advertisements, references). Differentiated, occupation-related competence frameworks are more suitable for internal communication (personnel development, assessment procedures).

All the companies polled underpin that the competence profiles should be as detailed as possible. One dialogue partner said that it was a "great" instrument for the detailed assessment of work performance and the degree of detail was certainly reasonable when used on annual basis to assess performance.

*"I believe that performance assessment is a by-far underestimated management tool. For me, it is the ultimate management tool ... the money in your pocket or the reward that you feel every month."
(Interview 1)*

In one interview, it was suggested that the competence profiles be expanded to include so-called "roles". In this group-affiliated company, 80 percent of the tasks performed by employees are department or workplace related and around 20 percent are other company functions, e.g. as safety officer. These extended areas of activity could be defined in analogy to the competence grids based on fields of occupation (company-specific).

The competence profiles were seen to promote mobility more in the case of executive staff rather than skilled workers. One of the companies polled works with so-called "step-up cards" and skill matrices. These are designed to standardise activities and are hence somewhat similar to the competence grids.

² A europass certificate supplement has been meanwhile developed for the mechatronics engineer (*mechatronics technician in Germany*).

Those polled considered two other points to be worth mentioning:

1. The evaluation of occupational competence is linked to *specific* abilities, skills and experience.
2. Despite its specifics, the evaluation of competence is also geared towards a certain *type* of employee who, through their work in the company or in department A, has demonstrated that they are also suitable for a job in department B.

1.

In order to determine occupational competence, a distinction must be made between formal qualifications, school and vocational education, training, job experience and work content, as well as methodological competence and "virtues" (order, cleanliness, punctuality) as well as social and self-competence. The reason for applying for a job is also important. The specific areas of application determine the job experience required. In the metals and electrical occupations examined, these include requirements, such as data processing skills (programming, process optimisation, input of parameters); abstraction skills (number of axes); transfer of information from the workpiece or the drawing; process knowledge (turning, milling, drilling, filing); craftsmanship (e.g. filing); a feel for material and shape; handling of different tools and materials; tool selection; selection and operation of measuring equipment, etc.

The way in which the work is organised is also important. Holistic task tailoring or a strong separation of set-up, operation and control affect the qualifications required or expected, respectively. This corresponds to the batch size and the type of methods and machines used.

According to those polled, competence profiles also depend on *specific work processes*, which, on the other hand, require certain forms of competence (e.g. flexibility, holistic thinking). In the case of a company with extensive in-house instructions, the competence required were company-related skills which must be taught to employees. Skill management is employed to manage the skills of each employee of a company. Skill management is designed to help the company to assign employees systematically on the basis of their skills to the correct job in the company. In this respect, this is a form of handling with *competence profiles*. Employee-based tasks are listed in a "skills database". These are:

- Personal data (e.g. name, date of birth)
- Organisational affiliation (department, superior, location)
- Training, accreditation, foreign language skills, experience abroad
- Knowledge of methods, processes and the industry, as well as other areas of competence
- Contacts, involvement in institutes, associations, etc.
- Professional career and further education
- Individual-specific data (e.g. resilience, performance characteristics)

Skills are checked by way of learning success control in the form of knowledge checks in which the process of acquiring knowledge (self-learning) is checked rather than the content of the knowledge

acquired. This application is a prime example of the concept and implementation of *lifelong learning*. The term "skills" is not what is important here. As already mentioned, one company worked with a training matrix in order to describe production-related competences.

2.

The practitioners polled, however, at times also confirmed the concept of competence as context-independent skills which a person can apply in different occupational environments. They also emphasise that the environment "has to be right". The concrete experience made by an employee is an indication of their context-independent ability to come to terms with similar tasks or difficulties. This opinion corresponds to a differentiated understanding of competence as behavioural dispositions whilst self-responsibility was emphasised at different points.

"If the main competence is there, then he can do the other things too... when the person is suitable for this... the basics are there. When I have a certain type of person who is inclined to be motivated, committed and able to think for themselves,... because I have in fact certain basic types ... what I want to do is clone that person..." (Interview 3)

The interviews provided generally positive information regarding the practical benefits of occupation-related competence grids.

"That will have to take this road in Europe." (Interview 1)

Short profile of the companies polled

The logo for GÜHRING, featuring the word 'GÜHRING' in bold black letters on a yellow background with a black arrow pointing to the right.

GÜHRING

Gühring G-ELIT Präzisionswerkzeuge GmbH, 13407 Berlin

Gühring is one of the world's leading suppliers of rotary cutting tools: tools for drilling, deep-hole drilling, thread cutting, milling, reaming, counter sinking, as well as diamond tools and modular tool systems. The current product range features 1,620 different types of tools with more than 44,000 different items.

Tool development is carried out in a state-of-the-art research and development centre. The service division offers support in all tool matters right through to complete tool management. The tools are manufactured at a total of 26 product centres in Germany and abroad. 37 service centres are available world-wide along with more than 37 national companies or sales offices.

The production and service centre in Berlin employs a staff of 400.

P&G Gillette Deutschland GmbH & Co. oHG, 12099 Berlin



The Gillette factory in Berlin is the most important production centre for Gillette razor blade systems in Europe and the world's second largest producer of wet shaving systems. In 2005, Procter & Gamble (P&G) merged with Gillette Deutschland GmbH & Co. oHG.

Since 1960, P&G has been operating at 20 sites in Germany, including three innovation centres employing a staff of around 1,000 in research and development. P&G has a workforce of around 138,000 in more than 80 countries around the globe, including more than 15,000 employees in Germany. Outside the US, Germany is home to the biggest branch of P&G .

Gillette Deutschland GmbH & Co. oHG in Berlin employs a workforce of 900.

Short profile of the companies polled

GTMB Metallteilfertigung GmbH, 14929 Treuenbrietzen



GTMB Metallteilfertigung GmbH belongs to the companies of KOHL-GRUPPE AG and has been present on international markets since 1996. GTMB emerged from the Mechanical Engineering Division of Gerätewerk Treuenbrietzen GmbH which back in 1990 was one of the first companies to be privatised in Germany's new federal states. Since 1996, the focus has been persistently placed on the production of complex milling and turning parts. GTMB Metallteilfertigung GmbH offers services in the following fields: CNC turning and milling, turning lathe shop, assembly of complex sub-assemblies and devices as well as complete outsourcing projects.

At its site in Treuenbrietzen in the Potsdam-Mittelmark (Brandenburg) region, GTMB employs a workforce of 115.

EBK Elektronische Baugruppen und Komponenten, 14513 Teltow



The EBK Group bundles activities in plastic injection moulding, punching, annealing and electroplating and in the field of tool manufacturing. Thanks to many years of experience as a manufacturer of electronic components within SIEMENS AG, competences have been developed and fostered at the Teltow site near Berlin which now form a solid basis for the development of a successful company.

The EBK Group employs a workforce of more than 100 at several sites.
