



NAAGRCY

National Authorities for Apprenticeship:
Companies as Sustainable Partners for Apprenticeship in Greece & Cyprus

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**Companies as Sustainable Partners
for Apprenticeship in Greece and Cyprus**

**WP3: Develop and Adaptation of In-Companies
Apprenticeship Procedures**



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GUIDELINE

“EXAMINATIONS AND ASSESSMENT OF LEARNING OUTCOMES”

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1. INTRODUCTION

This guide aims at informing and supporting representatives from ministries and competent bodies in charge of VET as well as companies and VET providers in their activities of development and improvement of apprenticeship offers in Greece and Cyprus. It focuses on examination and certification procedures in Greece, Cyprus and Germany.

We shall consider for Germany initial vocational education and training based upon the Federal vocational education and training legislation with duration of three years in average. For Greece, this guideline considers apprenticeship training under the responsibility of OAED offered at EPAS. For Cyprus it considers the New Modern Apprenticeship scheme. This scheme includes 2 apprenticeship levels (preparatory and core level). The core level of apprenticeship lasts 2 years and addresses students with completed compulsory education or preparatory apprenticeship course.

Figure 1: Overview of main features of the VET system in Greece, Cyprus and Germany relevant to training regulations and examination

| | Greece | Cyprus | Germany |
|--|---|---|--|
| Number of apprentices | 6,663 apprentices with in-company training in 2013; 7,761 apprentices with in-company training in 2014; 7,282 in 2015 and 6,487 in 2016. | From the introduction of New Modern Apprenticeship to June 2015 (School years 2012/13, 2013/2014 and 2014/2015) 276 learners (counting every individual learner only once) in preparatory courses and in core apprenticeship | 1,391,900 apprentices in initial dual VET (2013); 522,200 newly concluded training contracts (2014) |
| Number of companies and VET schools involved | 51 OAED EPAS 2,426 companies participated in 2012-2013 2,841 companies in 2013-2014 2,414 companies in 2014-2015 and 2,452 in 2015-2016. | 3 Technical Schools and 67 companies (counting each individual company only once) | 438,000 companies involved in delivering training (2013) |
| Number of | 202 occupational | Specialisations offered in | 327 training regulations |

| | | | |
|---|--|--|--|
| training regulations | profiles During school year 2014-2015, 30 occupations operated in all EPAS Schools of OAED | school years 2012/2013 and 2013/2014 car mechanics. In school year 2014/2015 car mechanics, electrical installations and hairdressing. | |
| Duration of training | 2-year dual apprenticeship programs | 3-year new modern apprenticeship program at Core level | 3 ½ years It normally lasts three years. Some occupations only require two years and there are also regulations allowing a reduction in the training period for trainees with an Abitur, the school leaving certificate allowing entry to higher education. |
| School-based and in-company training phases (average) | Morning practical training (6 hours/day), which is alternated by afternoon class or laboratory lessons in the EPAS | NMA = 3 days in companies during the first and second years (increasing to 4 days during the third year), remaining 2 resp. 1 day at VET schools | 30% in part-time VET schools; 70% in-company learning |
| Most popular training occupations | Car technicians Electricians Computer technicians Administrative assistants Plumbers Hair dressers Cooks | 3 NMA specialisations: Car mechanics (most popular) Electrical installation Hairdressing | sales assistant for retail services warehouse operator machine and plant operator specialist in the hospitality services industry skilled express and postal services employee |
| Number of examinations per year | Examinations take place twice a year: In January by the end of the 1 st semester and in June, by the end of the school year | XX | 495.213 (2013) (success rate: 91,8%; Passed: 445.443) |
| Form of examination | Continuous | XX | X (Lernerfolgskontrolle) |
| | interim | XX | X |
| | Final | XX | X |
| In-company training | No Certificate of | | Yes Apprenticeship diploma |

| | | | |
|---|----------------------|--|---|
| relevant for final examination | attendance delivered | | |
| Examination forms | Written, oral | | Written, oral and on-site demonstration |
| Source: BIBB (2016): VET data report; internal reports on Greece and Cyprus VET systems | | | |

While reading this guideline, one must bear in mind the main differences between the three apprenticeship systems as far as apprenticeship regulations and cooperation between both learning venues are concerned: In Germany school-based learning and in-company learning are fully integrated since apprentices spend about 70% of their learning time in companies and in-company learning is an integral part of the awarding of apprenticeship diploma.

2. GENERAL PROVISION FOR EXAMINATIONS IN IVET

2.1 TYPES OF EXAMINATIONS IN APPRENTICESHIP SYSTEMS

In the German VET apprenticeship systems, apprentices are undergoing two major examinations: an interim examination and a final examination or journeyman examination (in the field of handcrafts). The Federal law by part 5 of the Vocational Training Act [Berufsbildungsgesetz] (Sections 37-50) regulates the examination system in the dual system. A continuous informal assessment of performance (Lernerfolgskontrolle) supports the training and learning process. For this continuous assessment, the record book (Ausbildungsheft; Ausbildungsnachweise) is playing an important role. The apprentices have to keep their written record books updated, describing the tasks undertaken at the workplace as well as the learning outcomes acquired; the apprentices, trainers and teachers are able on this basis to follow learning progress of the apprentices. The record book as mentioned in the Federal VET law is also a requirement for admission to final examination. The continuous assessment includes exams taking place at the vocational school and in the training company by so-called 'continuous instructions and evaluations'. This continuous assessment supports the assessment of learning success by the apprentices and the control of efficiency and adequacy of training (didactical and pedagogical methods and means) by the in-company trainers and teachers. It is also a means for the apprentices to keep track of their own learning processes.

Table 1: Forms of continuous assessment¹

| Forms | Examples for implementation |
|----------------------------------|--|
| Written assessment | School work, written exam, multiple-choice tests |
| Oral and semi-written assessment | Direct or indirect repetitions, home works, minutes of classes, seminar paper or project |
| Practical assessment | Experiments, tasks orders, production orders |

The training regulations set reference times in weeks with separation before and after the interim examination. The framework training regulations set what has to be learnt and learning outcomes to be acquired for interim and final examination, the VET law defines as well as the framework conditions for examinations that are defined more in details in the respective training regulations as illustrated in annex 4.

The final apprenticeship examination leads to the award of the certification by Chambers of Commerce and Industry, Chambers of Crafts, depending upon the sphere of competences. It takes place on the same date all over Germany since VET programmes are starting in September each year. It aims at: ‘determining whether examinees have acquired the necessary vocational competence. In the final examination examinees shall demonstrate that they have mastered the necessary vocational skills, possess the necessary vocational knowledge and qualifications, and are acquainted with the subjects taught at part-time vocational school as an essential part of their initial training. The examination shall be based on the initial training regulations’ (§38 BBiG). This article of the Federal VET law underlines the relevance of the learning outcomes approach in the German apprenticeship.

¹ Spöttl, Gerog (2016). Das duale System der Berufsausbildung als Leitmodell. Peter Lang.

Final examinations can take place in regular form or as extended final examination (*gestreckte Abschlussprüfung* or *Gesellenprüfung* for craft professions). Between 2002 and 2005 the extended final examination has been piloted before being introduced in the VET law in 2005. Its introduction follows formulated critics that until then the final examination was only focussing on acquired knowledge (and less on assessment of performance). This change is an indication on the orientation towards learning outcomes and process approach. Concretely the final examination is split into a first part before the end of the 1,5 years of training; the second part is carried out at the end of the training period. Both parts need to be passed for the award of the qualification (VET law).

2.1 INVOLVEMENT OF VET STAKEHOLDERS

Under the terms of the German Vocational Training Act, the competent bodies (i.e. Chambers) have the task to conduct the interim and final examinations or journeyman examinations. The relevant Chambers publish the examination dates (IHK Finder: <http://www.ihk.de/#ihk-finder>²).

Table 2: Involvement of VET stakeholders

| | |
|-----------------------------------|--|
| Tasks related to examination | Activities by different stakeholders in Germany |
| Definition of examination content | The reference used is the relevant training regulation and the framework set by the VET law/craft code. The reference is developed at BIBB in consultation with Ministries, representatives of employers' and employees' organisations (see guide on training regulations). The training regulation describes the content of the final examination (description of what should be assessed) as well as the weighting of the different examination areas. |
| Support for implementation | BIBB is publishing explanatory notes on training regulations (including examination), the BIBB Website Foraus.de is supporting examiners in implementing the regulations. |
| Adaptation of | Regional competent bodies (Chambers) |

² <http://www.dihk.de/themenfelder/aus-und-weiterbildung/ihk-pruefungen/ausbildungspruefungen/ausbildungspruefungen>

| | |
|------------------------|--|
| framework rules | |
| Taking the examination | Examination boards |
| Awarding certificates | Chambers of Commerce and Industry, Chambers of Crafts, etc. depending on the definition of the relevant competent bodies (VET law) |

2.2 EXAMINERS AND EXAMINATION BOARDS

The German VET law “Vocational Training Act (Berufsbildungsgesetz - BBiG)” foresees that board of examiners are set up to take the final exam. The examination board shall consist of at least three members. The members must be experts in the fields covered by the examination and must be suitable persons to act as examiners’ (§40 BBiG). The board of examiners consists in an equal number of employers’ and employees’ representatives and at least one vocational school teacher. At least two thirds of the total membership must consist of employers’ and employees’ representatives. Each member shall have a substitute. For quality assurance matters, examinations are independent from provisions of VET, meaning that the VET schoolteacher (member of the examination board) is not the one having trained the apprentice in a given training occupation. More than 300.000 persons are working for the competent bodies as voluntary examiners (Prüferportal; 28.4.16). Examiners do not receive any salary or indemnities for their activities; the Chambers reimburse their travel costs.

BIBB issues guides for implementation (*Umsetzungshilfe*) which give in-company trainers, examiners and trainees tips for preparation to intermediate and final examinations in new and modernised occupations.

Table 3: Prerequisites to act as examiners

| | |
|--|--|
| Expertise or expert knowledge (Sachkunde) | <p>Only examiners having a profound knowledge of the matter can judge upon the performance of the examinees. This profound knowledge is deemed given when the examiner is holder of a corresponding VET diploma or has professional experience of some years in the relevant professional field. A specific training certificate to act as an examiner is not required. The requirements are somewhat different in the field of handcraft (§34 HwO).</p> |
| Personal aptitude (Persönliche Eignung) | <p>Examiners should act as responsible and mature persons as well as have educational skills. Absolutely required is a good knowledge of the training regulation and examination rules so as to ensure a regular examination process. Examiners should be able to assess the relevance of the examination situation as well as its effects on the examinee; they should have the skills to ask and assess achievements.</p> |
| Other | <p>Age, membership to chambers, current employment situation, political involvement, nationality or private situation, is of no relevance for acting as examiner.</p> |
| <p>Source: http://www.prueferportal.org/html/158.php</p> | |

The competent body adopts an examination regulation for the final examination on the basis of the corresponding training regulation. In praxis, the chambers have different branches responsible for different regions within Germany. Depending on the number of trainees within a training occupation in a specific region, the examination boards are established. Usually one examination board is formed per training occupation. The boards are regional and act for the trainees educated in that region which belongs to the respective branch of the chamber.

The appointment of examination committee members is regulated in § 40:3 of the VET law (BBiG) and § 34:2/34:4-6 of the Craft Code (HwO). Accordingly, the members of the examination committee shall be appointed for a single period of maximum 5 years. After this period, a reappointment is possible. Shorter periods or appointments for only one exam date are also possible under certain conditions. The appointment is an administrative act, under which the existence of the eligibility requirements is checked; the competent body³ proceeds to the appointment. Members of the examination committee receive an official appointment document that sets their rights and

³ <http://www.prueferportal.org/html/721.php>

obligations and those of the competent body in supporting them. The competent body should give the new examination committee member all relevant documents for his activities and thus provide the necessary tools. The vocational Training Act and the Crafts Act rule somewhat differently the appointment of the employee and employer representatives.

Further to attending and holding the interim and final examination or final examination, the examination board takes over further tasks as specified in the Vocational Training Act and the respective examination regulations. These include in particular:

- the decision concerning the admission to the final examination if the competent body does not consider the admission requirements
- the decision on the examination tasks on the basis of training regulations
- the assessment of individual examinations tasks and the examination as a whole
- the decision on the passing and failing of the final examination
- the determination of the examination result and its transcript
- the formulation of the certificate
- the preparation of a transcript of the examination

The tasks require some preparatory and follow-ups activities which include for example sending invitations, keeping the minutes of committee meetings and the implementation of the resolutions.

2.3 PREPARATION AND ADMISSION TO APPRENTICESHIP EXAMINATIONS

Preparing the apprentices for final examination is part of the tasks of the in-company trainer and VET schoolteacher. This explains for instance that the further qualification for aptitude as trainers contains a module on this very matter. The in-company trainers have access for instance to former examination documents, exchange with schoolteachers and their peers to best possibly prepare the apprentices. The interim examination gives also valuable indication of the learning progress and proficiency of the apprentices.

The admission to **regular final examination** (Abschlussprüfung; BBiG or Gesellenprüfung; HwO) requires fulfilling four main criteria:

- Completion of period of initial training or their period of initial training is due to end no later than two months after the date set for the examination;
- Participation to the prescribed interim examinations;
- Full prescribed written initial training records;
- Initial training relationship is entered in the register of initial training relationships or has not been so entered for a reason beyond the control of the trainees or their statutory representatives (BBiG / HwO § 43 BBiG, § 36 HwO).

Admission is also open to full-time VET school learners and learners with specific background upon agreement with the competent bodies (so-called external examination). Learners having followed a full school-based VET training or similar training background might be admitted to the apprenticeship final examination if their training corresponds to a recognised training regulation. The VET law defines the 'equivalence' of training content as follows: A qualification pathway shall correspond to initial training for a recognized training occupation if

- it is equivalent in terms of subject matter, standards and duration to the respective initial training regulations;
- it is pursued in a systematic manner, in particular within the framework of a syllabus and timetable; and
- an appropriate proportion of practical specialized initial training is ensured through cooperation between learning locations.

The Land governments shall be authorized, after consulting the Land vocational training committee, to prescribe by ordinance which qualification pathways fulfil the conditions for equivalences regarding the full-time schools training.

To be eligible to external examinations, candidates have to fulfil some criteria as defined in the VET law and Craft codes. They have to bring evidence that 'they have been employed in the occupation for which they wish to take the examination for a period at least one and a half times as long as is prescribed for the period of initial training' (BBiG; §45). If the person has previously followed an initial vocational training in a relevant field, this period of training can be recognised in terms of

period of relevant employment. Should the apprentices have followed a training abroad, the same requirements are applicable.

2.4 SCOPE OF ASSESSMENT: WHAT IS ASSESSED?

Final training examinations are geared to vocational practice and performance, i.e. to work requirements and processes of the occupation. They determine whether examinees have acquired the necessary vocational competence. In the final examination examinees shall demonstrate that they have mastered the necessary vocational skills, possess the necessary vocational knowledge and qualifications, and are acquainted with the subjects taught at part-time vocational school as an essential part of their initial training. The initial training regulations (VET law; section 38) set the basis for the examinations.

As a rule, a final examination covers four or five fields relevant to the occupation. Performance in general subjects, such as languages and mathematics, is evaluated within the framework of school reports. Various methods are used in examinations depending on the occupation and duration may vary especially in practical examination which examination assignments are to be performed in the form of a work sample and/or work task should not be less than one hour and should not exceed seven hours (excluding preparation and post-processing). For written tasks, a period of two hours is usually allocated for the examination, and oral examinations usually last 30 minutes⁴.

Table 4: Overview on structure of examination, example of hairdressers

| | | | | |
|--|------------|--|--|--------------------------------|
| First part of the training (Months 1 to 18) | | Second part of the training (Months 19 to 36) | | |
| Basic knowledge | common and | First part of the | Further common knowledge and competences | Second part of the examination |

⁴ Hippach-Schneider, U., Hensen, K. A., & Schober, K. (2011). Germany. VET in Europe – Country Report 2014, p. 24

| | | | |
|-------------|----------------------------|---|--|
| competences | examination (interim exam) | One specialisation has to be chosen: <ul style="list-style-type: none"> • Beauty treatment / face • hairdressing for long hairs • nail modelling • Hair extensions • Dying | (final exam) – diploma award (Gesellenprüfung) |
|-------------|----------------------------|---|--|

2.6 QUALITY CRITERIA FOR EXAMINATIONS

Quality of examination procedures is an important element of the quality approach in German dual apprenticeship system for regulated professions in IVET. Measurement of performance should be as fair and constant as possible. Quality is defined along four main criteria by the Chambers of industry, commerce and crafts:

1. **Objectivity:** Results of examination should be independent of the examinations environment. This concerns for instance similar examination duration, available equipment to carry out the examination tasks, opportunities for the examinees to ask questions;
2. **Reliability:** the results of examinations should be similar by similar examination environments and similar training of the examinees;
3. **Validity:** the scope of the examination should be in line with the requirements in the training regulations in view of evaluation of occupational proficiency (*berufliche Handlungsfähigkeit*);
4. **Economy:** The costs in terms of time spent, personal costs and material costs should stay in relation to the three first criteria.

Table 5: Quality criteria for apprenticeship examination

| |
|--|
| Germany |
| <ul style="list-style-type: none"> • objective, • understandable and unequivocal • avoids to be one-sided towards one or the other subjects and hair-splitting • concentrates on occupational proficiency • delivers reliable results • only concerns what should be examined (content) • differentiates between high and low performance |

- considers costs/effectiveness balance

Source: Qualitätsstandards für Prüfungen der Industrie- und Handelskammern

3. COMPETENCES OR LEARNING OUTCOMES APPROACH IN ASSESSMENT

3.1 GRADING AND EXAMINATION TASKS

The examination board decides on the basis of the training regulation the examination items. Those items maybe already fixed by previous examination boards or be decided among the members of the board. In that case the examination board will schedule specific meetings dedicated to this activity, not only will the examination items have to be elaborated but also the materials and equipments needed by the examinee.

The examination purposes and rules for grading are fixed within the corresponding training regulations and will be adapted. As an example, the overall weighting of the mechatronics fitter examination is constituted as follows:

1. Working on a mechatronic sub-system (40 percent)
2. Work order (30 percent)
3. Work planning (12 percent)
4. Function analysis (12 percent)
5. Business and social studies (6 percent)

Note that the grade gained during the intermediate examination is part of the final grade. The “Work order” comprises a comprehensive practical examination. The candidate should execute a company order within 20 hours including provision of practical documentation and take part in an order-related specialist oral examination of no more than 30 minutes’ duration. The specialist oral examination should be conducted on the basis of the practically related documentation of the company order processed; the order-related specialist oral examination should act as a vehicle for evaluating relevant process skills with regard to the execution of the order under due consideration of the practically related documentation. Part 3 to 5 of the final examination are written exams. For some examination methods or instruments such as the work order the training company suggests a vocationally typical work order that will have to be processed by the examinee. This work order is to be approved by the examination board within a given deadline.

3.2 PERFORMANCE ORIENTED EXAMINATIONS

The assessment of performances or vocational proficiency is no easy task and requires examination to be performance-related and based upon learning outcomes or competence approach. Major stakeholders are still in the process of developing support materials to implement performance-oriented examinations.

In its recommendation 158 (2013⁵), the BIBB Main Board reminds of the rules for examination as defined in the corresponding training regulations and lists examination tools. It also states in its preamble that each examination area should correspond with at least one examination tool; should tools be combined, their relevance for the grading should be set beforehand. Examination tasks should be understandable by the apprentices and formulated for instance as follows: ‘the examinee shall demonstrate that ...’ in accordance with the concept of occupational proficiency. The listed examination tools are as follow:

- **Written examination tasks**

Those tasks have practical relevance or are typical for the concerned vocation. The tasks are fulfilled through specific outputs such as answers to questions, business letters, order lists, project documentation or users’ manuals etc.

- **Case-related expert discussion (fallbezogenes Fachgespräch)**

The discussion relates to one executed practical task. The examinee should have the opportunity to prepare for the discussion with documents and to use them during the expert discussion. Professional questions, matters and approaches as well as problems and solutions should be discussed.

- **Order-related expert discussion (auftragsbezogenes Fachgespräch)**

⁵ The following text is based upon the Recommendation 158 by BIBB main board, own translation

This discussion is complementary to the executed operational in-company order, a produced examination piece, a work sample or task order and supports the examination board in its assessment.

- **Situational expert discussion (situatives Fachgespräch)**

The situational expert discussion relates to the task fulfilled during the examination or the work sample. It supports its assessment. Questions concern professional tasks, contexts and approaches as well as problems and solutions. It takes place during the implementation of the task order or work sample. One or more such discussion phases can take place during the examination.

- **Simulated communication (Gesprächssimulation)**

The simulated communication is a role play. The examinee acts as he/she will in his/her future position, his/her communication partner is either a member of the examination board or a third person. The partner may act as a customer (internal or external to the company), as a guest, as a colleague. The examinee has the opportunity to prepare for this examination part in written and can use his/her notes during the role play.

- **Presentation**

The examinee presents a vocationally typical fact and/or professional contexts related to an operational in-company order, an examination product/piece or a professional task and answers related questions. He/she can use tools.

- **Documentation with practice-related files (dokumentieren mit praxisbezogenen Unterlagen)**

Practice means work tasks, work sample, examination piece or operational in-company order. The examinee produces practice-related documents such as reports, minutes, contractual documents, materials lists, work plans, test and measurement reports, user manuals and/or compiles existing documents to ensure full description of the planning, executing and control of the tasks. The documents are supporting the examination board

while assessing the working methods and procedures and can be supported by the work output. Documentation supports will not be assessed.

- **Examination piece (Prüfungsprodukt / Prüfungsstück)**

This examination task consists in producing something typical of the profession concerned. Examples for such products are metal or wood artefacts, computer programme, marketing concept, project document, technical drawing, bunch of flowers. Additionally, this part of the examination can include the documentation, presentation, or order-related expert discussion.

- **Work sample or task demonstration (Arbeitsprobe)**

The examinee has to carry out a single task typical of the profession concerned. Examples are a given customer-service or maintenance task. The results can also be considered for the grading. This demonstration can be completed by an order-related or situational expert discussion, the implementation can be with usual documents completed.

- **Task order (Arbeitsaufgabe)**

It consists of a single complex task typical for the profession. The task can be supplemented by order-related or situational expert discussion, or usual practice-related documents, written examination tasks or a presentation.

- **Operational in-company order (Betrieblicher Auftrag)**

It consists of a company-based and profession-related typical order. The company order is developed by the training company and approved by the examination board. It is executed either within the company or at the customer's location. The examinee fully documents the order execution in a practical approach and discussed in the frame of the order-related expert discussion; a supplementary presentation can take place. The output of the order is relevant for the grading.

Each examination tool corresponds with specific expected learning outcomes as indicated in the following table.

Table 4: Examination tools and assessment of learning outcomes

| Examination tools | Expected learning outcomes | Specific examination requirements ⁶ | Specific weighting by grade |
|--|---|--|-----------------------------|
| Written examination tasks | Professional knowledge, understanding of underlying assumptions and backgrounds, methodical approach and course of action selected, Formal aspects (structure, phrasing) can be assessed. | yes | yes |
| Case-related expert discussion (fallbezogenes Fachgespräch) | Understanding of background and interrelated contexts, methodical approach and course of action selected and/or communication skills | yes | yes |
| Order-related expert discussion (Auftragsbezogenes Fachgespräch) | Understanding of background and interrelated contexts, methodical approach and course of action selected | no | no |
| Situational expert discussion (Situatives Fachgespräch) | Understanding of background and interrelated contexts, methodical approach and course of action selected | no | no |
| Simulated communication (Gesprächssimulation) | Understanding of background and interrelated contexts, methodical approach and course of action selected, communication skills and customer orientation | yes | yes |
| Presentation | Methodical approach, communication skills, type of presentation. | no | no |
| Documentation with practice-related files (dokumentieren mit praxisbezogenen Unterlagen) | Working methods and approach, or output | Same as for task, work order or work demonstration | |
| Examination piece (Prüfungsprodukt / Prüfungsstück) | Final output or product | yes | yes |
| Task demonstration (Arbeitsprobe) | Working methods and approach | yes | yes |
| Work task (Arbeitsaufgabe) | Working methods and approach as well as work output or only Working methods and approach | yes | yes |

⁶ Eigene Prüfungsanforderungen; eigene Gewichtung

| | | | |
|---|------------------------------|-----|-----|
| | | | |
| Company order (betrieblicher Auftrag) | Working methods and approach | yes | yes |

As presented in the above table some examination tools are considered as supportive one to the other, for instance expert discussion can be envisaged as one element of assessing task demonstration. This explains why the expert discussion is not noted with its own specific examination requirements or grading recommendation.

The design of examination tools is supported by all stakeholders. We can quote two projects, one by the Chamber of Commerce and Industry with financial support of the Federal Ministry of Education and Research „Innovativ Prüfen“ and one by the Chamber of Craft „Projekt 2000plus“; both are providing templates that can be customised. Further see annexes 2 and 3.

4. RECOMMENDATIONS

One of the major differences between Germany, Greece and Cyprus is the scope of the assessment procedures (the procedure includes in the German dual VET system theoretical and applied competence acquired). In Greece and Cyprus, there are indications that the objective of the assessment (although it takes place in a school context) is oriented towards performance or demonstration of acquired competences and knowledge.

In Greek VET system the in-company learning is not part of the assessment process; students receive a certificate for attendance, there are no examinations related to the in-company learning. Yet all competent State bodies are engaged in the definition of examination for the school-based learning. OAED is responsible for the activities listed in table 1 in cooperation with the related Ministries, as well as EOPPEP (National organization for the certification of qualifications and vocational guidance). So far, employers' and employees' representatives do not participate in the procedure of exams since it is school based process. It would be very important similar exams to take place also in the Greek system (also regarding the work-based part). In EPAS programs, the examinations consist of theoretical and practical parts, and take place only at VET schools, not in enterprises. The diploma

award is based upon the results of theoretical and practical examinations as well as the certificate of attendance of students at schools (Doc 1st managerial meeting, 28-29 September 2015).

More specifically, examinations in EPAS take place twice a year: In January by the end of the 1st semester and in June, by the end of the school year. The assessment process includes theoretical and laboratory examinations. As far as laboratory courses are concerned, examinations can be either written or oral or a combination of both written and oral tests, according to the type of the lesson and the specialty. The aim of the whole process is the proper assessment of knowledge and skills acquired by the trainees at school and in-company training within the 2 years of dual apprenticeship program.(JMD 40087/FEK 2376/B/14-12-2007).

In the framework of Re-Engineering OAED'S business model, in the improvement of Apprenticeship, there was a study about the partnerships with social partners. According to it, by the end of the apprenticeship program, companies should undertake the responsibility to provide a certificate and a letter of recommendation, with reference to the trainees duties and tasks during the in-company training.(OAED, Study for Apprenticeship partnerships, November 2015)

Moreover, according to the Quality Framework for Apprenticeship (JMD 26385/FEK 491 B/2017), the assessment of the in-company training is going to be recorded in "logbook" and a final examination is foreseen by the end of the apprenticeship. The exams will include skills performance and presentation of projects. The final examination can take place twice a year with the participation of the teaching staff of VET school as well as with social partners, chambers and enterprises representatives. The skills competition takes place in a non-formal way at EPAS Career Offices over the last two years. In fact, by the end of the school year, Career Offices organize skills performance and assessment in several technical specialties with the participation of enterprises, chambers and sectoral bodies.

Finally the Quality Framework for Apprenticeship foresees that 50% of the final assessment of apprentices refers to in-company training and the learning outcomes for each specialty will be included in the Apprenticeship Contract.

In Cyprus, the training company/employer must excuse the apprentice from training for the examination, pay the examination fee, and provide all necessary materials.

ANNEXES

A. EXAMINERS PORTAL

A major source of information and data is the BIBB run platform 'Examiners Portal'. It addresses examiners, examinees and any interested VET stakeholders and provides advice on issues relating to examinations (www.prueferportal.org). The portal is financed by the Federal Ministry of Education and Research and well used for instance by Chambers to inform on examination timetable or by BIBB to inform on new publications related to examination.

B. CHECKLISTE FOR ACTION-ORIENTED EXAMINATION TASKS⁷

- to ensure that examination tasks are action/performance oriented, the following aspects should be taken into consideration:
- to reference the examination tasks to the training regulation and the framework curriculum
- to assign the examination tasks to examination subject/examination field
- to reproduce typical work flows and action plans
- to reproduce as precisely as possible a holistic course of action. Should it not be possible, decide on company work assignment and/or case studies
- to avoid mere knowledge questions, rather integrate them into the examination task
- to avoid isolated individual examination tasks or a sequence of individual tasks with pre-defined answers
- To avoid questions & answers examination tasks

⁷ Source: BIBB (15.02.08); own translation

- To use – as far as possible- original documents and templates from the respective daily business life.
- To keep company-related data and templates fictitious so as to avoid uncertainties or confusion by the examinees
- To choose carefully which tools and information (legal regulations, cost overviews etc.) will be put at disposal to solve the examination task
- To check whether the use of internet for specific task is appropriate and technically possible
- To be aware that too many documents and information might be less useful
- To check before defining the examination task which competences and skills will be evaluated with the specific examination task
- To check while designing the examination task whether the answers could encompass next to specialist knowledge (legal requirements, calculation, measuring precision etc.) further knowledge (general knowledge or linked to customers' or clients' needs) that could lead to alternative possible solutions
- To check whether the examination tasks include typical problems, disruption factors and sources of error which could support the evaluation of professional skills
- To check the number of points for the tasks and in relation to the point distribution by examination subject/examination field

C. GUIDE FOR CONCEPTION OF PERFORMANCE BASED EXAMINATION (DE)

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| Competent body | | Training occupation: |
| Examination type | Examination (Interim examination, final examination, extended final examination) | |
| Issue: ... | | |
| Scenario: company standard situation: description | | |
| Sector or company background: Scope of process chain | | |
| Typical work orders: under the responsibility of the workers | | |
| Event typical operating incident which initiates a work order to the worker | | |
| Tool: PA-Basis-Tool © Hans-Joachim Müller (2009) – own translation | | |

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| Practical exam (according to training examination regulations) Examination tools: for instance, practical task, complex work task, operational order | Time allowance (according to training examination regulations) (ex. 60 min., 180 min., max. 7 hrs., 14 hrs, 21 hrs) | Score 100 points |
| Assignment: (typical work orders linked to the incident) | | |
| Order information: | | |
| Performance to be assessed (the performance might be a product or activity) | List of work safety requirements, accident prevention, health and environment protection | |
| (optional) evaluation feedback | | |

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| Expert discussion Duration (see training examination regulations): 20 min.; 30 min. | Possible discussion topics related to the order: Possible more advanced topics | |
| Tool: PA-Basis-Tool © Hans-Joachim Müller (2009) – own translation | | |

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| Final examination | |
| Family name of the examinee: | |
| First name of examinee: | |
| Registration number of examinee: | |
| Date, place: | |
| Examiner: | |
| Tool: PA-Basis-Tool © Hans-Joachim Müller (2009) – own translation | |

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| Examination field (according to training examination regulations): | | |
| Topic: | | |
| Target time: | | Evaluation: max. 100 points |
| Assignment | | |
| Order data | | |
| Examination performance to be assessed | Establish a list of requirements to be fulfilled concerning work safety requirements, accident prevention, health and environment protection. Follow all of them during implementation | |
| Feedback | | |
| Expert discussion | A expert discussion of XXX minutes will follow the practical exam. The questions focus on the task implementation/performance. They are based on the documentation produced by the examinee during the practical examination part. | |
| Präsentationsform: PA-Basistool © Hans-Joachim Müller (2009) – own translation | | |

D. INTERIM AND FINAL EXAMINATION AS DESCRIBED IN TRAINING REGULATIONS (DE)

The following is an excerpt from the ordinance on Vocational Education and Training in the Occupation of Mechatronics Fitter (Mechatroniker-Ausbildungsverordnung – MechatronikerAusbV) as promulgated on 21 July 2011 in Federal Law Gazette 2011 Part I No. 39, published in Bonn on 29 July 2011. It illustrates how examination procedures and learning outcomes approach are stated in ordinances

| <i>Final examination</i> | |
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| General examination objectives | <ul style="list-style-type: none"> ⇒ to ascertain whether candidates have acquired occupational employability skills. In the final examination, candidates should demonstrate mastery of the necessary occupational skills, possession of the required occupational knowledge competences and familiarity with the teaching material essential to the vocational education and training to be imparted via teaching at vocational school. ⇒ The training regulation shall constitute the basis of the examination. Skills which have already constituted an object of examination in Part 1 of the final examination shall only be included in Part 2 of the final examination to the extent that such inclusion is necessary for the determination of the requisite occupational competence pursuant to § 38 of the Vocational Training Act. |
| Examination pattern | <ul style="list-style-type: none"> ⇒ The final examination comprises Parts 1 and 2, which are held at separate times. ⇒ Part 1 of the final examination should take place before the end of the second year of training. So Part 1 is similar to an interim examination. |
| Structure of the final examination | <ul style="list-style-type: none"> ⇒ Part 1 of the final examination comprises the examination area of “Working on a mechatronic sub-system”. Candidates should carry out a work task which includes situational oral examination phases and written assignments. ⇒ Part 2 of the final examination comprises the following examination areas: <ol style="list-style-type: none"> 1. A work order 2. Work planning 3. Function analysis 4. Business and social studies ⇒ Due consideration should be accorded to vocational education and training, employment and collective wage agreement law; structure and organisation of the company providing training; health and safety at work; environmental protection, company and technical communication; planning and management of work processes; evaluation of work results; business processes and quality management. |
| Examination criteria | <p>Part 1: Candidates should demonstrate that they are in a position to:</p> <ul style="list-style-type: none"> ⇒ 1. evaluate technical documentation, determine technical parameters, plan and agree work processes, plan material and tool requirements; |

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| | <ul style="list-style-type: none"> ⇒ 2. wire up, connect and configure sub-assemblies and components, accord due consideration to compliance with safety rules, accident prevention regulations and environmental protection provisions; ⇒ 3. evaluate the safety of mechatronic sub-systems, test mechanical and electrical protective measures; ⇒ 4. analyse sub-systems, test functions, adjust and measure ratings and establish functionality; ⇒ 5. hand over and explain systems; document the execution of the order, prepare technical documentation including test protocols. <p>Part 2: <u>Examination Area: A work order</u></p> <ul style="list-style-type: none"> ⇒ Candidates should demonstrate that they are in a position to: <ul style="list-style-type: none"> ○ analyse work orders; obtain information from documentation, clarify technical and organisational interfaces, evaluate and select possible solutions in accordance with technical, economic and ecological considerations; ○ plan and agree order processes, stipulate subtasks, draw up planning documentation, accord due consideration to work processes and areas of responsibility at the place of deployment; ○ execute orders, test and document function and safety, comply with standards and specifications for the quality and safety of the systems; search systematically for causes of errors and defects; ○ release and hand over systems; provide specialist information including in English; prepare acceptance protocols; document and evaluate work results and services; invoice for services; document system data and information. ⇒ The examination area should be based on the following activities: assembly or maintenance of a mechatronic system followed by subsequent commissioning in each case. ⇒ In order to demonstrate fulfilment of requirements in the examination area of “Work order”, candidates should: <ul style="list-style-type: none"> ○ execute a company order within 20 hours including provision of practical documentation and to take part in an order-related specialist oral examination of no more than 30 minutes’ duration; the specialist oral examination should be conducted on the basis of the practically related documentation of the company order processed; the order-related specialist oral examination should act as a vehicle for evaluating relevant process skills with regard to the execution of the order under due consideration of the practically related documentation; prior to the execution of the company order the assignment including planned processing time should be presented to the Examination Board for approval; or ○ prepare, execute and follow-up a practical work task in 14 hours, including documentation via task specific records, and to conduct a specialist oral examination of no more than 20 minutes’ duration; the execution of the work task lasts 6 hours; observations of the way in which the task is executed, the task specific documentation |
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| | <p>and the specialist oral examination should act as a vehicle for evaluating relevant process skills with regard to the execution of the work task.</p> <p>⇒ The company providing training should select the examination option in accordance with 1 (3) above and should notify the candidate and the competent body of the selection at the same time as registration for the examination takes place.</p> <p><u>Work planning</u></p> <p>⇒ 1. Candidates should demonstrate that they are in a position to:</p> <ul style="list-style-type: none"> ○ a) conduct problem analyses; ○ b) comply with technical rules in selecting the mechanical and electrical components, cabling, software, tools and equipment required for assembly and commissioning; ○ c) adapt installation and assembly plans; ○ d) plan the necessary stages of work according due consideration to health and safety at work and use standard software. <p>⇒ 2. The examination area should be based on the preparation of a work plan for the assembly and commissioning of a mechatronic system in accordance with pre-stipulated requirements.</p> <p>⇒ 3. Candidates should perform the task in written form.</p> <p>⇒ 4. The examination time is 105 minutes.</p> <p><u>Function analysis</u></p> <p>⇒ 1. Candidates should demonstrate that they are in a position to:</p> <ul style="list-style-type: none"> ○ a) plan measures for maintenance or commissioning according due consideration to company processes; ○ b) evaluate circuit documentation; ○ c) interpret and alter programmes; ○ d) identify and present functional correlations within a mechatronic system, mechanical and electrical values and sequences; ○ e) align signals at interfaces functionally; ○ f) select and deploy test procedures and diagnostic systems; ○ g) localise causes of errors, check protective equipment and test electrical protective measures. <p>⇒ 2. The examination area should be based on a description of the approach to be adopted towards preventative maintenance and the systematic identification of an error within a mechatronics system.</p> <p>⇒ 3. Candidates should perform the task in written form.</p> <p>⇒ 4. The examination time is 105 minutes.</p> <p><u>Business and social studies</u></p> <p>⇒ 1. Candidates should demonstrate that they are in a position to present and evaluate general business and societal correlations within the world of employment and work.</p> <p>⇒ 2. Candidates should process practically oriented tasks in written form.</p> <p>⇒ 3. The examination time is 60 minutes.</p> |
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| Duration of examination | <p>Part 1: The examination time is 8 hours, whereby the situational oral examination phases should be of a total maximum duration of 10 minutes. The duration of the written assignments should be 90 minutes.</p> <p>Part 2: See the above information on the duration of the examination according to the examination areas.</p> |
| Weighting of the areas of the examination | <p>The examination areas should be weighted as follows.</p> <ol style="list-style-type: none"> 1. Working on a mechatronic sub-system - 40 percent 2. Work order - 30 percent 3. Work planning - 12 percent 4. Function analysis - 12 percent 5. Business and social studies - 6 percent. |
| Passing the final exam | <p>The final examination is deemed to have been passed if:</p> <ol style="list-style-type: none"> 1. an overall result of at least “pass” is achieved in Part 1 and Part 2; 2. an overall result of at least “pass” is achieved in the examination area “Work order”; 3. an overall result of at least “pass” is achieved in two of the examination areas pursuant to Paragraph 1 (5) above and 4. no mark of “fail” is recorded in any examination area in part 2. |
| Options | <p>At the request of the candidate, an examination in the areas of “Work planning”, “Function analysis” and “Business and social studies” for which a mark of worse than “pass” has been awarded should be supplemented by an oral examination of approximately 15 minutes if this may be decisive for the passing of the examination. In calculating the result for this examination area, the previous result and the result of the supplementary oral examination should be accorded weighting in the ratio of 2:1.</p> |
| Source: Ordinance on Vocational Education and Training in the Occupation of Mechatronics Fitter | |