

M-ECVET-S: Development and test of a modular system in the field of professional further training

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Introduction, background and context

The M-ECVET-S Leonardo da Vinci Innovation Transfer Project (ITP) is built upon the acknowledgement within Europe of the need to facilitate trans-national mobility and promote borderless lifelong learning through the recognition of vocational learning expressed as learning outcomes.

In this respect, the Recommendation of the European Parliament and of the Council of 18 June 2009 on the establishment of a European Credit System for Vocational Education and Training (ECVET) was adopted. This Recommendation is referred to hereafter in this document as REPC.

The purpose of the REPC is to *“create a European Credit System for Vocational Education and Training (ECVET) intended to facilitate the transfer, recognition and accumulation of assessed learning outcomes of individuals who are aiming to achieve a qualification”*. The REPC then goes on to articulate six recommendations related to its intentions with respect to ECVET, including the following article (#2):

“create the necessary conditions and adopt measures, as appropriate, so that as from 2012 – in accordance with national legislation and practice, and on the basis of trials and testing – it is possible for ECVET to be gradually applied to VET qualifications at all levels of the EQF, and used for the purpose of the transfer, recognition and accumulation of individuals’ learning outcomes achieved in formal and, where appropriate, non-formal and informal contexts”

The M-ECVET-S project was conceived to address this recommendation, specifically in the area of ‘trials and testing’ of ‘individuals’ learning outcomes achieved in... non-formal and informal contexts’. It builds upon and utilises the outcomes from the successful Leonardo da Vinci Pilot Projects, ESO-CERT, ESO-CSA and ESO-CRS. Specifically, the assessment platform and methodology developed in the ESO-CERT project will be used as a tool for the assessment of ECVET since the allocation of credit for non-formal and informal learning is entirely dependent upon a proven and appropriate method of assessment.

This is the only ECVET project that is both proposing and testing a modular scheme for the transfer, recognition and accumulation of individuals’ learning outcomes from non-formal and informal ‘lifelong learning’. Whilst the scope of the M-ECVET-S project is quite specific, the potential for extension of the outputs of the project

on a much wider European scale, to a much broader range of vocational areas, is enormous. To develop and test a modular ECVET system which, by its inherent flexibility and underlying practicality as well as and above all its **workability** is the goal, the impact of which, if successful, will be highly significant and will fulfill the expectations implicit and explicit in the REPC. Thus, the aims of this project are quite specific, but its potential is enormous.

Included in this document are a series of annexes/appendices which provide supporting information, evidence and discussion related to the methodology for allocation of ECVET credit and to the methodology of describing learning outcomes to a modular vocational education and training system.

I. Part: Allocation of ECVET credits (Product 1 and 4 of the project M-ECVET-S)

In the context of the advancement and enhancement of the ECVET – based method for the assessment of professional competencies developed in the EU project ESO-CERT, this part has two aims. Firstly, the development of an assessment method, using credit points, associated with modular education units of Vocational Education and secondly the development of a methodology to allocate credit points to these modular education units.

The twin aims of this will align with and build upon the method developed in the EU-funded ESO-CERT project and will draw from current developments in ECVET in European and national contexts.

Whilst these results are an integral part of the M-ECVET-S Leonardo da Vinci project, this recommendation as one of the key outputs of the project is also a 'stand alone' entity and has a broad, general nature which can be used in other ECVET applications and developments, as appropriate.

1. The M-ECVET-S System Methodology and Processes

The following describes and visualises the M-ECVET-S Methodology and the processes involved in awarding ECVET credit to successful candidates. Certain assumptions are made and founding principles of this methodology are stated below:

Assumptions and basic principles

1. Learning is achieved through a variety of sources and mechanisms.
2. In the vocational context, the learning enables to learner to perform his or her job.
3. It does not matter if the learning comes as a result of formal education or training or non-formal and informal means.
4. ECVET credit recognises the results or outcomes from any source of learning.
5. ECVET awards credit for what a learner has learnt and not how he or she learnt it.
6. ECVET credit gives new opportunities for all learners.
7. ECVET credit has the benefit of transparency, flexibility and portability across EU States and potentially beyond.
8. Simplicity and workability will be crucial conditions for the M-ECVET-S system to succeed.

Practical information

1. ECVET credit will be awarded to any learner passing appropriate tests using the **CEMES** online testing method which was developed in Leonardo da Vinci Pilot Project ESO-CRS.
2. ECVET credit will be awarded for passing ECVET modules.
3. ECVET modules will be developed in specific vocational areas and will each be subdivisions of a vocational curriculum e.g. a module on Basic Bookkeeping will be a subdivision of an Accounting curriculum.
4. Each ECVET module represents the **smallest element of learning** for which ECVET credit can be awarded.
5. Each ECVET module will have **an equal credit value of 6 ECVET credits**.
6. ECVET credit itself **will not be graded**, but will be **allocated to a specific EQF Level**.
7. Each ECVET module will have **a specific and unique name**.
8. Learners who pass an appropriate test for each module will be awarded 6 ECVET credits which can be regarded as a **'stand-alone' entity** or, with other such ECVET credits in the same vocational area, can be used to build a full, **named vocational qualification**.
9. Within a module, no distinction will be made between knowledge, skills and competence.
They will not only be given equal levels of importance, but the **pass mark** i.e. the minimum percentage of learning outcomes achieved to merit passing the module will be **applied to each type of learning outcome**. All three types of learning are **equally important**.
10. **In an ECVET programme** which results in a named vocational qualification, **all modules must be passed** before the qualification is awarded.

ECVET Modules, Learning Outcomes, Benchmarking and Notional Learning Time

1. The basis for awarding ECVET credit will be demonstration of achievement of **learning outcomes**.
2. Learning outcomes are defined as **'statements of what a learner knows, understands and is able to do on completion of a learning process and which are defined in terms of knowledge, skills and competence.'**
3. Each ECVET module will be developed described in terms of learning outcomes as defined in point 2 above.
4. ECVET learning outcomes will be defined by **benchmarking against equivalent learning from formal learning programmes**, since formal learning programmes are strictly structured.
5. In order to ensure equivalency of formal and non-formal/informal qualifications, the basis for development of ECVET modules of learning will be **notional learning time**, as this is a widespread measure used in the development of formal learning programmes.
6. Notional learning time is a measure of the amount of effort a student has put into the learning process to achieve a given set of learning outcomes. It is defined as the **average time a learner in formal education or training would take to achieve a given set of learning outcomes**.
7. Notional learning time is an average, but includes **not only formal contact hours with tutors, but also preparation for these, private reading and study, and the completion of formative assessment tasks and revision**. As such it is a measure of blended learning time.
8. It is important to understand that in the context of ECVET, whilst notional learning time is the basis for allocation of credit and the development of appropriate numbers of learning outcomes (the measures that are to be assessed), **it is notional, not actual**.
9. One ECVET credit point equates to the learning outcomes achieved through **20 notional learning hours**.

10. The ECVET Levels will be assessed by benchmarking against the various levels of equivalent formal learning
11. ECVET credit (6 per ECVET module) will be awarded on the basis of a candidate passing a **rigorous testing process** which assesses achievement of the module's learning outcomes.
12. ECVET modules are described in Learning Outcomes and are measures of **what they know at a point in time**. The ECVET Learning Outcomes which comprise individual ECVET modules are '**snapshots**' of learning attainment on the day that they are tested.
13. Within any ECVET module all types of learning outcomes – knowledge, skills and competence – will be **treated as a whole**.
14. The minimum pass mark in the tests for all ECVET modules will be **50% of questions answered correctly** for each type of learning outcome (knowledge, skills or competence). Only those who pass each module will gain ECVET credit and for each module passed they will be awarded 6 ECVET credits. It is a pass or no pass arrangement; all 6 ECVET credits are awarded or nothing.

Types of Learning

Informal Learning	Non-formal Learning	Formal Learning
This is learning which is acquired as a result of a series of unplanned experiences, either in or out of a work environment.	This is learning which is acquired as a result of ad-hoc planned experiences and training, either in or out of a work environment.	This is learning carried out at or from a competent training or educational institution. Usually it leads to a named qualification and can be carried out on a full-time or part-time basis.
Informal learning is generally unrecognised except by reference to 'experience'. There is currently no widespread value or recognition placed on this kind of learning.	Non-formal learning is generally recognised and valued but only in relation to 'training for and doing the specific job'. It can also have some 'currency' in related occupations.	Considerable value is placed upon formal learning in each country where it is carried out, although there is not yet comprehensive acceptance of the resulting local qualifications in other countries.
Informal learning is not time-specific or timebound. Learning occurs at all times and at variable paces according to the individual learner.	Non-formal learning tends not to be time-specific although the individual training elements will be timebound.	Formal learning is time-specific, i.e. a fixed amount of 'learning time' is allocated to formal learning programmes.
<p>Examples of informal learning sources include:</p> <ul style="list-style-type: none"> • <i>On-the-job learning</i> • <i>Learning by doing</i> • <i>Learning by observing</i> • <i>Team learning</i> • <i>Learning by enquiry</i> • <i>Learning by instruction</i> • <i>Learning by reflecting</i> • <i>Learning from mistakes</i> 	<p>Examples of non-formal learning sources include:</p> <ul style="list-style-type: none"> • <i>Job-specific training</i> • <i>Task-specific training</i> • <i>In-company training</i> • <i>General skills training</i> • <i>Area-specific training</i> • <i>Vocational training</i> 	<p>Examples of formal learning sources include:</p> <ul style="list-style-type: none"> • <i>Schools</i> • <i>Colleges</i> • <i>Universities</i> • <i>Business Schools</i> • <i>Training centres/companies</i>
<p>M-ECVET-S does not differentiate between sources of learning, but provides a mechanism for acquisition and benchmarking of formalised academic credit across all forms of learning. Formal learning is the most structured type of learning and learning process and provides the ideal benchmarks for other forms of learning</p>		

2. Application of Methodology to a Concrete Example

M-ECVET-S lead partner IBS has developed a practical concrete example of a modular system in the area of accounting for testing in this project. The example that has been developed is a part of a qualification in accounting that might be delivered by formal education/training. In selecting the modules for development, IBS has included modules that a representative of study at more than one level of difficulty in order to demonstrate the way that a modular structure might work. Ten modules have been developed, as follows. It is important to note here that the ten modules combined do not comprise the whole qualification, but are exemplars. The ten modules together represent **60 ECVET credit** points and equate to **1200 notional learning hours** in total, which is equivalent to **one full year of traditional (formal) study**. The 10 modules are:

Module 1:	Windows, Word, Excel – Basics (a business computing module)
Module 2:	MS Word, Excel – Advanced (a higher level of business computing module)
Module 3:	General English for Beginners – Level A1 (an introductory foreign language module)
Module 4:	Business English Basics – Level A2 (an introduction to a foreign business language module)
Module 5:	Business English Basics – Level B2 (a higher level foreign business language module)
Module 6:	Economics & Business Studies, General legal requirements – Basics (an introduction economics, business and law module)
Module 7:	Bookkeeping/Financial Accounting – Basics (an introductory module)
Module 8:	Bookkeeping – Advanced (a higher level bookkeeping module)
Module 9:	Payroll Accounting – Basics (an introductory module)
Module 10:	Payroll Accounting/Construction industry wages (a higher level module)

In choosing to develop these particular modules, there is an assumption that certain of them will be **pre-requisites** of others, meaning that they would need to be studied and passed before a student in formal study would be allowed or able to tackle a higher level module. They are thus **consecutive modules**. Specifically, the following should apply:

- Module 1 (basic level) is a **pre-requisite** of Module 2 (same area; advanced level)
- Module 3 is a **pre-requisite** of Module 4, which is itself a **pre-requisite** of Module 5 (same areas)
- Module 6 is a basic module in the field of commerce.
- Module 7 (introductory level) is a **pre-requisite** of Module 8 (same area; higher level)
- Module 9 (introductory level) is a **pre-requisite** of Module 10 (same area; higher level)

For each of the 10 modules a detailed descriptor has been developed which indicates the following:

- Module title/descriptor
- Detailed learning outcomes expressed separately in terms of knowledge, skills and competence.
- Notional learning hours (=120 hours in all cases)
- ECVET points (=6 in all cases)

Each of the 10 modules developed in the field of accounting is a **stand-alone** entity, which is capable of incorporation into a number of different **named vocational qualification** programmes of study/qualifications. To provide an example using the above modules:

1. Modules 7 and 8 (bookkeeping) might both be important modules for a qualification in Accounting and any such programme might require both of them to be included.
2. Module 7 might be necessary and sufficient for a qualification in Business Administration as this area might not require such high levels of knowledge, skills and competence in bookkeeping.
3. Similarly, in addition to Accounting, Modules 1 and 2, the business computing modules might also both be an important element of a qualification in Human Resource Management.
4. It is this 'stand-alone' nature that represents the beauty of a modular system of education; elements of learning that can be applied in a number of different contexts and applications. This is entirely consistent with the concept and principles of ECVET.

Whilst, as indicated above, some of the modules are pre-requisites of other more advanced modules in the same area, under the testing method trialed in this project, it is perfectly possible for a candidate to sit a higher level test at the same time as a lower level test, if the learner believes that his/her learning is at the higher level, provided that the candidate also sits the lower level test. In such instances, the successful candidate would not only be awarded 6 ECVET credit points for the lower level module but also 6 ECVET credit points for the higher level module.

3. Online testing of ECVET Modules using CEMES Method

- In the Leonardo da Vinci project ESO-CSA, a three-step method for the assessment of competences was developed and awarded with the Helsinki Award 2006.
- Thus the assessment method developed in the ESO-CSA project takes due account of the many and different learning routes that may have contributed to the student's total learning in any given vocational area.
- The ESO-CSA assessment method measures **knowledge, skills and competences in 3 steps** and in that respect it is ideally suited to the assessment of ECVET learning outcomes.
- In the project ESO-CRS was developed the CEMES tool as an online-based competence assessment tool. It was developed according to the 3-step assessment method from the project ESO-CSA.
- CEMES structure:
 1. The highest level is competence area
 2. The competence area is divided into competences
 3. Competence is divided into related skills
 4. Skills are defined in technical terms (knowledge)
 5. The technical terms are connected with qualified questions (Multiple Choice and Open questions)

- The CEMES structure gives the user an exactly idea what a created test measures and the user can give an exactly statement to the evidence of the test results considering the CEMES structure.
- In the project ESO-CERT was developed a methodology to allocate credit points for the recognition of non-formal and informal learning.
- The project M-ECVET-S transferred the projects ESO-CRS and ESO-CERT.
- The CEMES tool has been used for the testing phase in this M-ECVET-S project.

This tool has been used in the following way for the modular programme in the field of accounting developed by IBS:

- The online assessment tool focuses on testing the **learning outcomes** articulated in the 10 module descriptors.
- These learning outcomes are the **starting point** and the reference points for the assessment process.
- These learning outcomes **cover equally knowledge, skills and competence** in the respective module areas.
- A **comprehensive test bank of questions** has been developed which will be capable of testing all the learning outcomes.
- The questions **were developed by experts** in the individual fields covered by the modules.
- The **testing of learning outcomes is rigorous** – the correct answer to a single question will not be enough to be certain of a candidate’s learning; there must be inbuilt **double-checks**. Thus, a number of aspects of knowledge will be separately tested and cross-checked.
- **The pass mark is 50%** for each of the 10 accounting field modules. Thus 50% of the learning outcomes in terms of knowledge, skills and competence – a minimum 50% for each type of learning – must be achieved in order to pass the module.
- The underlying criterion for the success of the CEMES system and its application to M-ECVET-S is **workability**. Without this condition, the wider European application of M-ECVET-S is in doubt.

4. How the M-ECVET-S Process operates

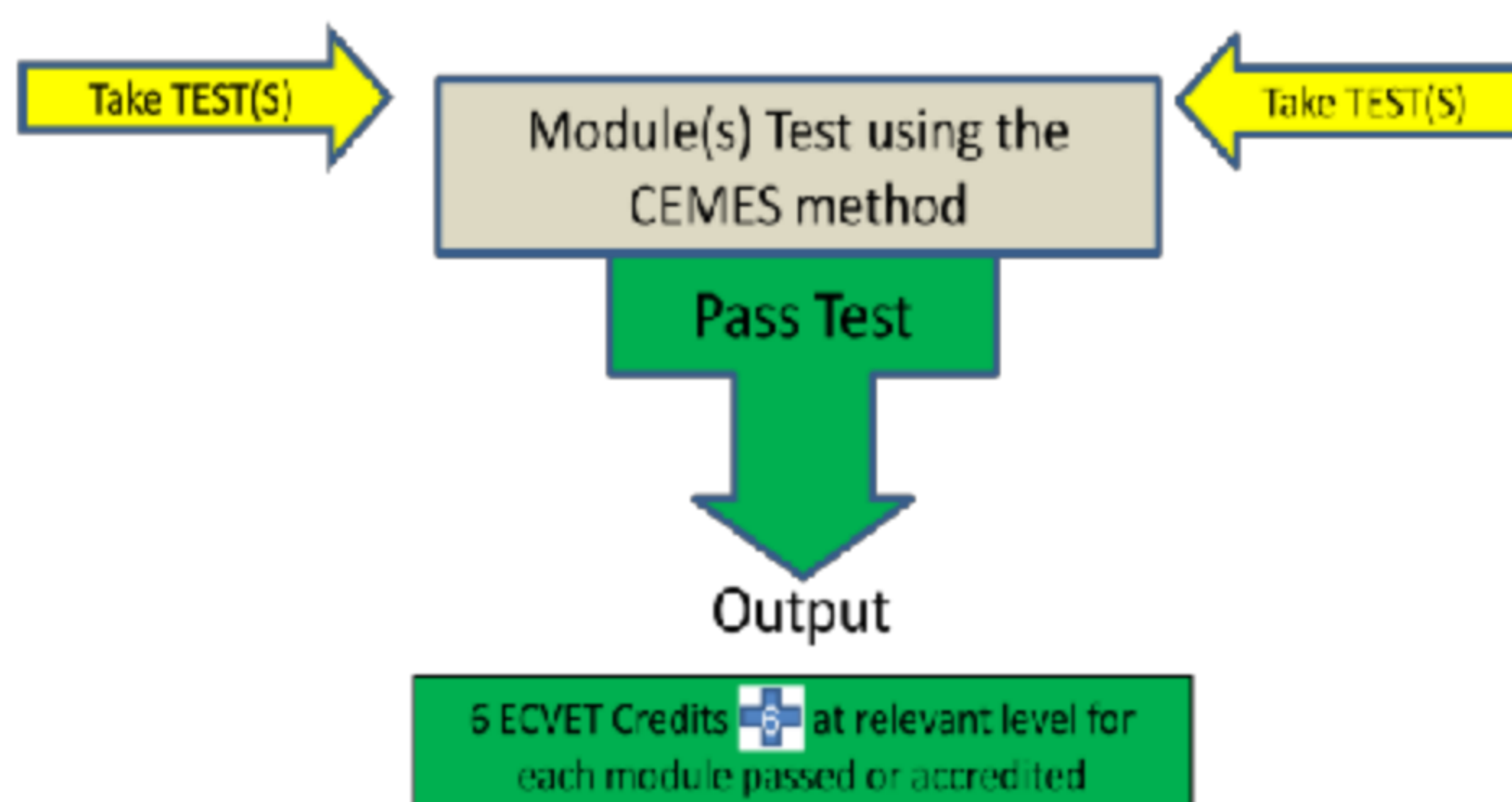
ECVET credit is available for learning acquired by non-formal, informal or formal means. The M-ECVET-S Process is essentially the organisation and execution of a testing method appropriate to the individual ECVET modules which have been developed with suitable and specific learning outcomes. This method utilises the CEMES system of testing described in brief earlier.

The M-ECVET-S process works in the ways described on the next pages. In both cases described, to be awarded ECVET credit for non-formal/informal learning and also for formal learning, a learner is rigorously tested using the CEMES online testing system. The testing process provides a 'snapshot' of what the learner/candidate knows and is competent in or skilled in at any point in time. The awarding of ECVET credit does not, in itself, involve any teaching or learning input, as it is a 'snapshot'.

Nonetheless, the process adopted allows for learners who will not or have not achieved success in demonstrating a satisfactory level of learning outcomes either to embark upon further training or to take the time to gain more experience on the job and be formally tested as many times as it takes to succeed. This is in the spirit of continuous improvement.

Gaining ECVET credit for non-formal, informal and formal learning

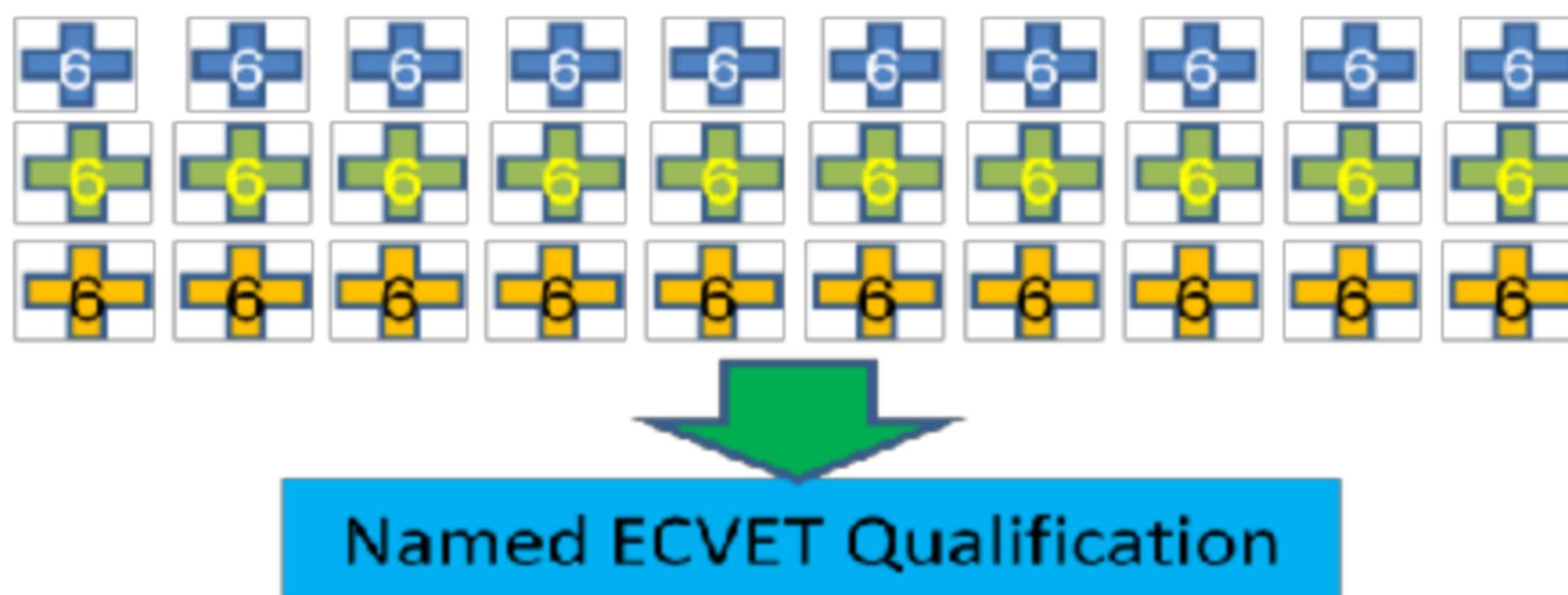
Taking the test and passing the test:



Regardless of how s/he achieved the learning outcomes, the learner who passes the CEMES test for given ECVET module(s) has satisfied the ECVET module learning outcomes and is therefore awarded 6 ECVET credits for each ECVET module s/he has passed.

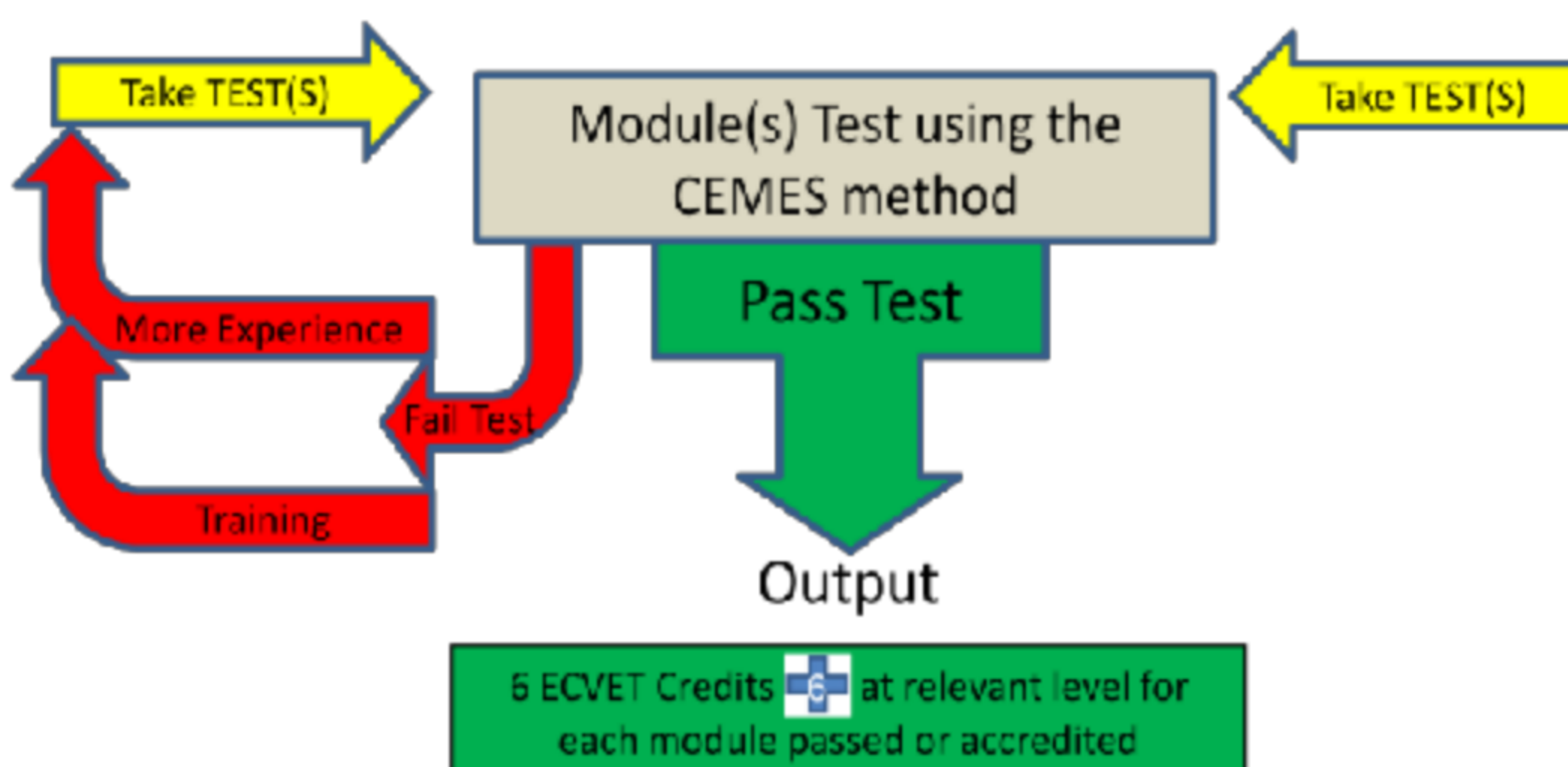
These 6 ECVET credits per module can be used individually, taken as a part of the learner’s educational achievement or can be added to with other ECVET modules in the same or similar vocational areas to build progressively to a named ECVET Qualification.

All learners achieving ECVET credit following tests:



Learners who achieve success in the ECVET CEMES tests have the opportunity either to treat them as individual ECVET module credits in their CV/résumés, or to add them to other appropriate awards of ECVET credit points to achieve a named ECVET Qualification.

Dealing with failure of the CEMES test:

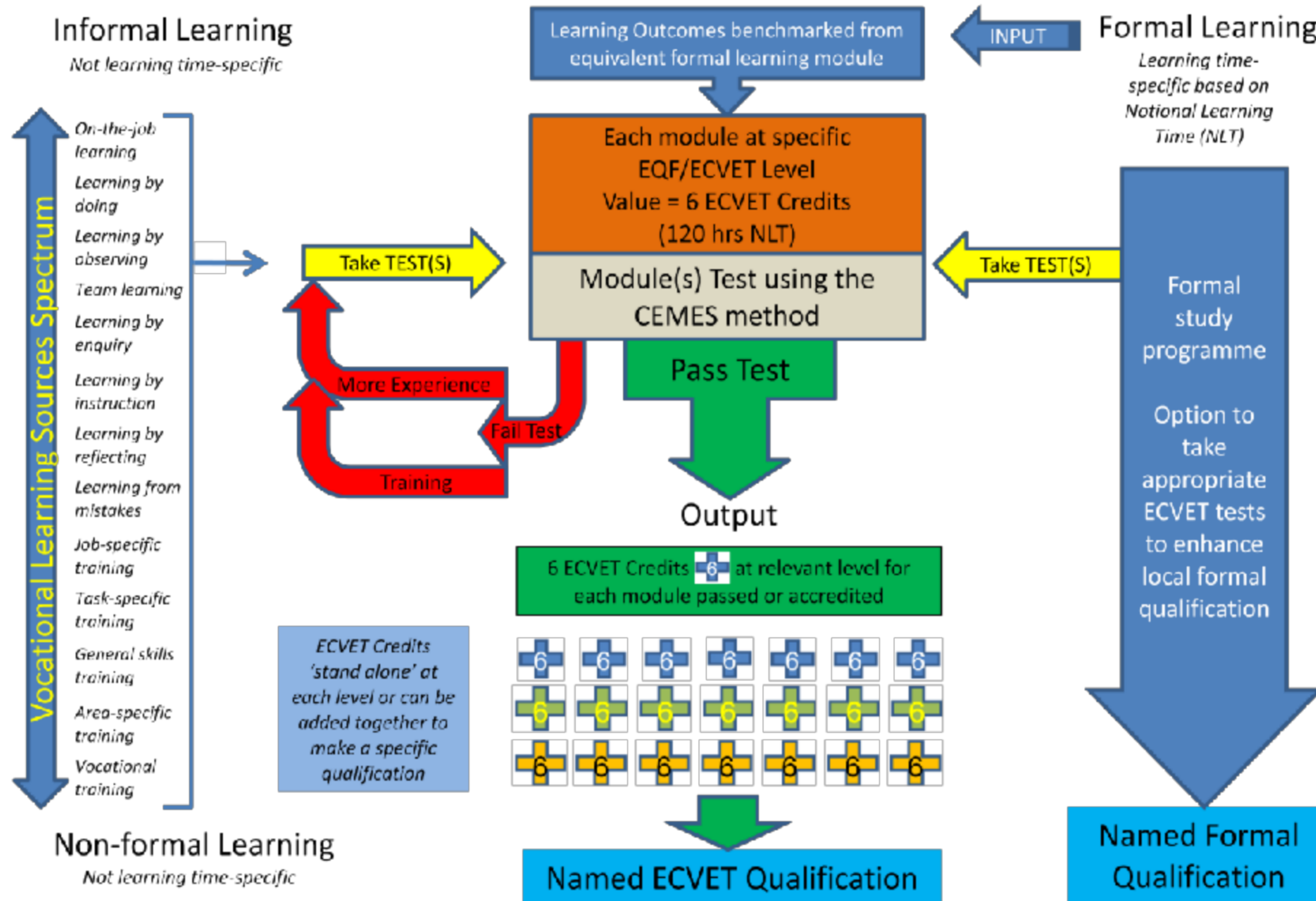


Those learners who take and fail the CEMES test for any given module are NOT awarded any ECVET credit. Instead, they have the option to embark upon more training, give time for the benefit of more experience to increase their total level of learning related to the specific learning outcomes of the given module (knowledge, skills, and competence).

At such a time as the learner is confident that s/he has enough learning, s/he is allowed to take the module(s) test(s) again.

A composite graphic of the M-ECVET-S Methodology and Processes is shown on the next page.

M-ECVET-S – Methodology and Processes



II. Part: Description of learning outcomes (Product 3 of the project M-ECVET-S)

The description of learning outcomes is an essential step towards the development of a European credit point system. Based on the project ESO-CERT, the project M-ECVET-S wants to generate ten action-oriented descriptions of competences for selected training modules, in accordance with the recommendations of the European Parliament and the Council. The experience which has been gained when generating descriptions of competences shall be generalized and used in this methodology.

1. Methodology to describe learning outcomes

After having conducted intensive research, the following findings are based on results of the project “Building up mutual trust: Zooming in on EQF-level six with regard to the engineering sector”, on the paper “Guide to Writing Module Learning Outcomes at DCU. What are learning outcomes?” by M. Keene, both from 2009, and on the recommendation of the European Parliament and the Council on the establishment of a European Credit System for Vocational Education and Training from 2009.

Learning outcomes can be described as follows:

- 1.) Learning outcomes take the completion of a qualification as a basis and refer to an average graduate.
- 2.) Existing curricula and other relevant documents are the basis for describing learning outcomes.
- 3.) Learning outcomes do not reflect the content description of a qualification but are strictly outcome-oriented.
- 4.) Learning outcomes are described in the form of results. They refer to the day of the exam and to the things that expected from the learner.
- 5.) The way of learning is not relevant for the description of learning outcomes.

- 6.) The ideal number of learning outcomes depends on the complexity of the learning programme.
- 7.) Learning outcomes must be realistic in terms of time and resources.
- 8.) Learning outcomes must be verifiable from the outside.

The principles mentioned above do not only characterise learning outcomes but are also valid for their formulation. Furthermore, there are recommendations which shall ensure an exact and comprehensible formulation.

- 1.) Use verbs in their active form.
- 2.) Use verbs which correspond to the cognitive, psychomotor or affective domain of learning and define a possible examination scenario.
- 3.) Write short and concise sentences.
- 4.) Do not describe the learning outcome too vaguely or too specifically.
- 5.) Avoid ambiguous words and phrases.
- 6.) Do not use too many active verbs to describe one learning outcome but use dependent verbs which refer to each other.
- 7.) Do not use the same verb too often in one description.
- 8.) Do not describe too many and not too few learning outcomes.
- 9.) Do not describe learning developments. They are difficult to measure and require several assessments at different times.

Exemplary formulations which shall illustrate these recommendations are described under point 3 of this second part.

In addition to these general recommendations on the formulation of learning outcomes, there is another, very practical discussion on how learning outcomes should be formulated. At the moment, there are three typical kinds of formulation:

1.) "Can-form"

Example: S/he can book procurement transactions.

2.) "Able-to-do-form"

Example: S/he is able to book procurement transactions.

3.) "Present-tense-form" without auxiliary verbs

Example: S/he books procurement transactions.

The "can-form" and the "able-to-do-form" are very similar because "can" in connection to a full verb and related to a subject describes skills, i.e. what

somebody is able to do. Advocates understand the connection of auxiliary verb and full verb as the general form of valid learning outcomes at the day of the exam. Opponents of the “can-form” and the “able-to-do-form” say that the result is defined only vaguely due to the use of “quasi-auxiliary-verbs”. This leaves room for possibilities and eventualities when learning outcomes are defined, e.g.: *He is able to draw up a balance sheet if he has studied and if he did not forget his glasses.* The quasi-auxiliary verbs blur the image of the average graduate and distort the expectations concerning the results on the day of the exam.

Advocates see the “present-tense-form” as the best possible way to actively describe a result which is expected from an average graduate and is tested on the day of the exam. This approach does not imply that there is any development on the day of the exam. The learning outcome is valid on the specific day. It is possible that the candidate does better or worse in the exam and it is also possible that the candidate enhances his competences afterwards but for the time of the assessment this is not relevant.

Opponents of the “present-tense-form” do not see it as the best possible way to describe a result. They define this form as a kind of progressive form, i.e. as an action which is not yet completed and therefore allows a development and not a defined average.

2. Use of the descriptions of learning outcomes in the project M-ECVET-S

Based on the EU recommendations on the characterisation of learning outcomes and on the recommendations on the formulation of learning outcomes, the project M-ECVET-S has taken ten commercial modules and has described them in an outcome-oriented way.

When describing the learning outcomes – in German and in English – we only used the present tense. The reasons for doing so were:

- Active verbs use the present tense and describe a result, i.e. a current state. → This way of description is applied in the project.
- The “can-form” and the “able-to-do-form” leave room for possibilities and eventualities when learning outcomes are defined. → Both ways of description are not applied in the project.

The descriptions of learning outcomes in the partner countries Sweden, Italy and Turkey have been translated in a country-specific way and it is therefore not possible to elaborate on how these descriptions were generated and what kind of characteristics were incorporated.

The learning outcomes were always described according to the same pattern. In the project, we use the following template:

Module number	Title	
General name of the qualification		
Reference of the qualification to the EQF		
... description of the learning outcomes ...		
Knowledge	Skills	Competence
... itemised description of the learning outcomes	... itemised description of the learning outcomes	... itemised description of the learning outcomes
Work load		
Methods and criteria of assessing the learning outcomes		
ECVET points		

The template contains the following items:

- 1.) A module number and a title are assigned.
- 2.) The module is put into the context of a qualification.
- 3.) The EQF level is estimated (in the context of this project, this kind of development work has not been done).
- 4.) Afterwards, the learning outcomes are described holistically and the descriptions are itemised in terms of knowledge, skills and competence.

- 5.) Based on a formal training, the learning time (1 notional learning hour $\hat{=}$ 60 min)) is defined. (For the recognition of LO's the learning time is not relevant.)
- 6.) The evaluation and the recognition of the learning outcomes are discussed (in the context of this project, first considerations have been made).
- 7.) Allocation of ECVET points

Annex 1 contains the ten outcome-oriented module descriptions in English.

3. Examples of formulating the descriptions of learning outcomes

According to the recommendation on the formulation of learning outcomes, we will now present examples which shall illustrate the recommendations. Some examples are taken directly from our own descriptions of learning outcomes.

1.) Use verbs in their active form.

Example: S/he generates the accounting documents of an annual balance sheet according to the legal provisions.

In this example, the verb is an active one regarding the tense form and regarding the meaning of the verb itself.

2.) Use verbs which correspond to the cognitive, psychomotor or affective domain of learning and define a possible examination scenario.

Example: S/he names the elements of an annual financial statement for private companies and capital companies.

The active verb defines the learning domain and refers to the corresponding cognitive level of the learning outcome and to a possible examination scenario.

3.) Write short and concise sentences.

Example: S/he states costs and expenses on an accrual basis in the profit and loss statement.

In this example, the verb is an active one and the learning outcome is defined briefly and concisely.

4.) Do not describe the learning outcome too vaguely or too specifically.

Insufficient example: S/he is responsible for staff planning.

*Insufficient example: S/he presents the tasks of staff planning using
the example of an institute for further training.*

*Good example: S/he plans the future qualitative and quantitative staff
requirements of a company.*

The first two examples do not put the learning result into a clear context, it remains vague and the context is defined too closely. Both examples are therefore not sufficient for describing learning outcomes. The third example defines the context of the learning outcome without being too vague or too specific.

5.) Avoid ambiguous words and phrases.

*Example: Procurement transactions were defined accurately. S/he was
able to book them.*

This example does not refer to the learner but to descriptions of content and it does not include an active verb in the present tense. There is no precise way of assessing the learning outcome. This is not sufficient for describing learning outcomes

6.) Do not use too many active verbs to describe one learning outcome but use dependent verbs which refer to each other.

*Insufficient example: S/he inserts, edits, revises, designs and
deletes headers.*

*Good example: S/he analyses and interprets selected key figures from
a balance sheet analysis in relation to the economic
situation of a company.*

Do not describe learning outcomes the way it is done in the first example because the list of active verbs is too long and the result can be combined. The second example uses two interdependent verbs for the definition of a learning outcome.

4. Relevance of the descriptions of competences for the competence assessment with the CEMES platform

The CEMES platform (Competence Evaluation Method for European Specialists) is an online-based, multilingual system which is able to assess and evaluate professional competences – regardless of how these competences have been acquired. The structure of the system corresponds to the EU recommendation on defining professional competences and in return concludes that knowledge, skills and competences have to be assessed accordingly.

In previous LdV-projects, a scalable competence rating system was developed. This system is not only able confirm formal knowledge acquired through a training course but it is also able to confirm non-formal and informal knowledge to a certain extent.

The competence management system is structured as follows:

The competence area (level 1) is characterised by relevant competences (level 2). These competences can be defined with required skills (level 3) which in turn are determined by technical terms/knowledge (level 4). The knowledge/the technical terms are allocated to multiple choice questions and open questions which are the basis for the competence assessment tests and evaluations.

The structure of the platform is groundbreaking and very productive for the validation of learning outcomes in the field of vocational training. It reflects the sub-division of the descriptions of learning outcomes and thus the EU recommendations.

The CEMES platform enables us to generate a systematic compilation of the learning outcomes and to conduct an adequate competence assessment. Due to the fact that the learning outcomes are strictly outcome-oriented and due to the condition that the descriptions are valid at the day of the exam, it becomes irrelevant whether the learning results have been acquired formally, non-formally or informally. They are recognised in any case. The platform becomes an ideal system for the assessment and recognition of learning outcomes.

Conclusions

The recommendations of the European Parliament and the Council from 2008 and from June 2009 are markers and are the basis for allocating credit points and describing learning outcomes. On the basis of a modular further training system which is constantly applied and against the background of definitions, the following questions were raised: “How to create and apply a workable methodology to allocate ECVET credit to a modular education system?” and “What is an outcome-oriented description of learning outcomes and how can we generate exemplary descriptions for ten selected modules?”

The foregoing represents the basis of the methodologies for the M-ECVET-S project. Annex I contains the ten learning outcome descriptions.

It is intended that this project and its outcomes are capable of extrapolation to a wider European context. With its emphasis on simplicity and workability combined with appropriate rigour, it is clear that the M-ECVET-S project should offer enormous potential for widespread acceptance across Europe. By organising the complete body of vocational learning in such a way, using a modular approach which references both the EQF and formal vocational education, but stands alone, the framework developed for the assessment of non-formal and informal learning, acquired outside the classroom should be very strong. The project partners acknowledge the potential difficulties of gaining widespread ‘buy-in’ across all European member States, but assert that being guided by workability and simplicity, the project has the best possible chances of widespread success.

The test phase will determine the level of workability of the schemes, but on the assumption that the testing process will either be an unqualified success, or give guidance for modification, where necessary, the project will be widely disseminated using all means at the disposal of the project partners.

If successful, the impact of this methodology and process across European member states can be enormous.

Summary of test phase

The developed products were tested in a three-step test phase. Various interrelated test objectives were pursued.

At first a full test of the CEMES platform with participants in the vocational training was conducted in all five partner countries. At the second step the partners had to conduct interviews with representatives and stakeholders of vocational training to evaluate the developed methodologies. Finally, strategical stakeholders evaluated the developed application scenario (offers of modular vocational training) for ECVET.

The results were surprising, but show very clearly the current difficulties and problems in the implementation and application of ECVET.

According to the objective to recognise learning outcomes achieved in a modular system across the borders the consortium compiled a comparable test in the field of commerce through the different partner countries. This field was chosen due to expected local particularities which might lead to specific findings.

The German partner prepared 84 questions. The partners identified and translated about 50 suitable questions for their countries. In the compilation of an uniform test the number of suitable questions reduced to 24. The evaluation of the test revealed that finally only 17 questions were useable. Sometimes the same question was answered totally different. The spread of the correct answer to the national average was between 20% to sometimes 80%.

In conclusion, it shows how difficult will be the successful implementation of ECVET in specific competences and vocational areas.

During the process of the project and the development of the products there were hardly any difficulties in the transnational acceptance in formulating learning outcomes. The uniform outcome-oriented definition of competences, skills and knowledge for the five countries caused hardly any problems, too. But, the results of the test show that the overlapping knowledge reduced to about 20% throughout the different countries.

In summary, according to ECVET we talk about the same competencies, skills and knowledge and we are able to use the same vocabulary, but in fact depending on

the competence area it is not necessarily the same learning outcome, only a comparable one.

The existing example of ECDL shows that it is possible to apply ECVET, especially in a field where competences base on a common technology. In areas where required competences base on national legislations and local particularities the application of ECVET is difficult, but necessary according to the transparency of competences.

The results of the interviews with the VET- representatives and the strategical partners confirm these conclusions.

Summary of the results of WP 5: CEMES platform (product no. 5)

The objective of the WP was the transfer of the CEMES - competence evaluation platform for the use in an ECVET-context. The platform was developed in the project ESO-CRS.

This objective was achieved to the effect that the use of the platform was tested and therefore the basic suitability was confirmed.

With use of the CEMES-platform competences can be identified, learning outcomes can be visualized, the recognition can be realized, and credits can be allocated after a successful assessment.

In summary, the platform can be used in an ECVET-context, but it should be further developed. The results of this WP can be described as follow.

1.) Adaptation of the CEMES platform:

- Translation of menu navigation in additional languages
- Extension of the current set of questions in the module “bookkeeping basics”
- According to language specifics the program were adapted (f. i. the use of apostrophe in input fields in PHP programs)

2.) Using the platform for awarding of credit points:

- Using the example of module 7 „Bookkeeping Basics“:
 - The outcome-oriented module descriptions were entered into the CEMES-platform
 - multilingual competence test was created and used for the test phase

3.) The website www.ecvet-modular.eu was created as multilingual information tool on ECVET and the project objectives.

4.) Development of CEMES- platform

Function and usability of the CEMES-platform was pretested by TINTA (Sweden).

- The results showed, that it is necessary to over work functionality and usability of the platform.
- In collaboration with CCI Education Institute Cottbus, Mr. Bennöhr and IBS GmbH the platform will reset in design, usability and functionality.
- This process will overrun the project end.

On the following pages is added a first interim result:

The screenshot shows the homepage of the CEMES platform. The header is yellow and contains the CEMES logo on the left and a 'Menu' button on the right. Below the header, there is a navigation bar with 'HOME' selected. The main content area is divided into several sections:

- HERZLICH WILLKOMMEN AUF DEM CEMES-PORTAL:** A large text block explaining the platform's purpose as a multilingual system for assessing and recognizing vocational competencies. It mentions that the system can be used by various stakeholders and that it is based on the European Competence Framework (ECF).
- ZUM LOGIN:** A section with an 'Anmelden' button and links for 'Wichtige Kontakte', 'Tutorials', and 'Sprache'.
- ÜBER DIE MACHER:** A section describing the team behind the platform, including project developers, training organizers, and programmers. It mentions the involvement of the IBS Education Center Cottbus GmbH.
- DIE NUTZER DER PLATTFORM:** A section describing the users of the platform, including candidates for exams and those who can create and administer tests.
- KOMPETENZANERKENNUNG:** A section describing the process of recognizing competencies, including the development of learning outcomes and the use of the platform for assessment.
- HISTORIE:** A section describing the history of the platform, mentioning its development as part of the ECET project and its role in the development of the European Competence Framework.

Further information

All websites valid in September 2011.

Dublin City University: Writing Learning Outcomes.

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Keene, M. (2009): Guide to Writing Module Learning Outcomes at DCU. What are learning outcomes?.

http://www.dcu.ie/afi/docs/FINAL_GUIDE_LOs-1%20May%2019th.pdf

Kennedy, D.; Hyland, Á.; Ryan, N. (2006): Writing and Using Learning Outcomes: a Practical Guide.

<http://www.bologna.msmt.cz/files/learning-outcomes.pdf>

M-ECVET-S: Project website.

<http://www.ecvet-modular.eu/>

Official Journal of the European Union (2008):

RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF>

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<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0011:0018:EN:PDF>

The European Credit system for Vocational Education and Training (ECVET):
http://ec.europa.eu/education/lifelong-learning-policy/doc50_en.htm

UCE Birmingham: Guide to learning outcomes.
<http://www.ssdd.bcu.ac.uk/outcomes/UCE%20Guide%20to%20Learning%20Outcomes%202006.pdf>

ZOOM (2009): Building up mutual trust: Zooming in on EQF-level six with regard to the engineering sector.

<http://zoom-eqf.eu>

Annex I: Ten Outcome-oriented unit descriptions (Product 2 of the M-ECVET-S project)

Module 1	Windows, Word, Excel – Basics		
Generic title of the qualification	Computer applications		
The reference of the qualification according the EQF level			
a) MS Windows	The candidate uses Microsoft Windows to manage and organise IT-related duties.		
	Knowledge	Skills	Competence
	<p>The candidate can define fundamental terms and can describe basic functions and settings of MS Windows operating systems.</p> <p>S/he can describe the functionality and application of Windows-Explorer.</p> <p>S/he can name various data storage mediums and the functionality and application. S/he explains data security measures.</p> <p>S/he can list various Windows Add-on programs and can describe the functionality and application.</p>	<p>The candidate applies basic work techniques and uses the function 'Help and Support'.</p> <p>S/he customises the appearance and settings of the user surface.</p> <p>S/he manages files and data clearly and uses optional the "Windows- Search" function.</p> <p>S/he prints data and controls print jobs.</p> <p>S/he uses data storage mediums in compliance with data security measures.</p> <p>S/he applies Windows Add-on programs according to the functionality.</p>	<p>The candidate independently uses MS Windows for IT-related duties at the working place.</p>
b) MS Office Word	The candidate uses MS Office Word to create and edit standard business documents.		
	Knowledge	Skills	Competence
	<p>The candidate can describe various components of the Microsoft Office Word environment.</p> <p>S/he can name fundamental and intermediate functions to create and edit</p>	<p>The candidate opens, saves and prints a Word-document.</p> <p>S/he creates and edits a document, according to national recommendations in official matters. S/he formats text directly or uses style sheets.</p> <p>The candidate controls the page appearance.</p>	<p>The candidate takes responsibility for performing and creating of adequate correspondence using Microsoft Office Word.</p>

	<p>documents.</p> <p>S/he can describe national recommendation of text entry and formatting.</p> <p>S/he can describe the advantages of mail merges by several criteria.</p>	<p>S/he proofs documents by using the thesaurus as well as spelling and grammar checks.</p> <p>The candidate creates bulleted or numbered lists, displays common header and footer information, adds charts and graphics, adds hyperlinks and creates tables.</p> <p>The candidate performs mail merges.</p>	
c) MS Office Excel	The candidate uses MS Office Excel to perform basic calculations and present data in charts.		
	Knowledge	Skills	Competence
	<p>The candidate can describe the Ribbon and can explain fundamentals of the MS Office Excel environment.</p> <p>S/he can list various application examples of MS Office Excel.</p> <p>S/he can define basic formulas and functions as well as IF-functions.</p> <p>S/he can distinguish two kinds of lookups.</p> <p>S/he can describe various kinds of charts.</p>	<p>The candidate creates, modifies, and formats worksheets and data tables using various techniques.</p> <p>S/he groups worksheets and consolidates data across worksheets.</p> <p>S/he performs calculations. S/he creates basics formulas and calculates with functions.</p> <p>S/he analyses data with lookup functions.</p> <p>S/he prints workbook contents.</p> <p>S/he presents data using charts. S/he uses different design elements.</p> <p>S/he protects files of worksheets and restricts document access.</p>	<p>The candidate independently creates worksheets and data tables, performs basic calculations and presents data using MS Office Excel.</p>
Work-load	120 Notional learning hours		
Procedures and criteria for assessment of these learning outcomes			
ECVET points	6 (six)		

Module 2	MS Word, Excel - Advanced		
Generic title of the qualification	Computer application		
The reference of the qualification according the EQF level			
a.) MS Office Word	The candidate uses MS Office Word to create high professional documents.		
	Knowledge	Skills	Competence
	<p>The candidate can define the both terms: `style sheet` and `document template`, and can name advantages regarding the use of templates.</p> <p>S/he can name various tools to create, texture, and control large texts for a professional appearance and an easier handling.</p> <p>S/he can explain the advantages regarding the use of a master document.</p>	<p>The candidate creates documents using a document template or wizard.</p> <p>S/he creates a document template.</p> <p>S/he creates, edits, and uses style sheets.</p> <p>S/he controls the paragraph and text flow and inserts section breaks and adds header and footer for a document section.</p> <p>S/he uses the `Search-&-Replace`-Function.</p> <p>S/he customises tables and charts as well as pictures and other illustrations.</p> <p>S/he organises data in master documents and manages work tasks.</p> <p>S/he types comments and uses cross-references in documents.</p>	<p>The candidate independently creates professional documents with various formatting and designing tools using MS Office Word.</p> <p>S/he supports other person in questions on the practical application of the program.</p>
b.) MS Office Excel	The candidate uses MS Office Excel to organise, analyse and evaluate large data tables and calculations, and to create professional charts.		
	Knowledge	Skills	Competence
	<p>The candidate can describe special techniques to manage large data tables.</p> <p>S/he can explain the functionality of MS- Query.</p>	<p>The candidate creates, modifies and formats large data tables.</p> <p>S/he imports data using MS Query.</p> <p>S/he uses and controls formulas and functions in large data tables.</p>	<p>The candidate independently creates large tables and performs calculations, analyses and</p>

	<p>S/he can name certain specialised functions for complex calculations.</p> <p>S/he can describe various tools to analyse and evaluate data.</p> <p>S/he can explain the handling and controlling tasks regarding the collaborating with others in one workbook.</p>	<p>S/he uses available Add-Ins to manage large data tables.</p> <p>S/he analyses data using Pivot tables and charts as well as other various analysis tools.</p> <p>S/he presents results of calculations and analyses with professional, created charts.</p> <p>S/he shares and organises workbooks in collaborating with others.</p>	<p>graphical evaluations using MS-Office Excel.</p> <p>S/he supports other people in questions regarding the application of MS Office Excel.</p>
Workload	120 Notional learning hours		
Procedures and criteria for assessment of these learning outcomes			
ECVET points	6 (six)		

Module 3	General English for Beginners –Level A1	
Generic title of the qualification	Foreign language	
The reference of the qualification according the EQF		
The candidate communicates in English at level A1.		
Knowledge	Skills	Competence
<p>The candidate can describe its own vocabulary as simple basics of familiar words and phrases concerning personal interests and immediate concrete surroundings.</p> <p>The candidate can describe simple grammatical basics.</p>	<p>The candidate communicates in a simple way provided other people speak clearly and slowly and repeat or rephrase things and assist the candidate.</p> <p>The candidate comprehends and uses very familiar expressions and sentences talking about her/himself and own interests.</p> <p>S/he asks and answers simple questions in areas of immediate needs or on very familiar topics.</p> <p>The candidate writes short, simple postcards and fills in forms with personal details as well as s/he reads simple notices and in catalogues.</p> <p>S/he uses some simple grammatical basics from a memorised repertoire.</p>	<p>The candidate applies its memorised repertoire of words, simple phrases and the first grammatical basics on familiar, concrete topics and surroundings provided other people assist her/him.</p> <p><i>Description relate to „Common European Framework of Reference for Languages“.</i></p>
Work-load	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET- points	6 (six)	

Module 4	Business English Basics – Level A2	
Generic title of the qualification	Foreign language	
The reference according the EQF		
The candidate communicates in English at level A2.		
Knowledge	Skills	Competence
<p>The candidate can describe its own vocabulary as basics of terms, short phrases and sentences related to areas of most immediate personal relevance.</p> <p>S/he can describe basic grammatical rules and the use.</p>	<p>The candidate understands phrases and high frequency vocabulary in short, clear, simple spoken messages and announcements.</p> <p>S/he reads very short, simple texts and personal letters. S/he finds specific, predictable information in simple everyday material.</p> <p>S/he communicates in simple and routine tasks requiring a simple and direct exchange of information on familiar topics and activities.</p> <p>S/he handles very short exchanges even though s/he cannot keep the conversation going her/himself.</p> <p>S/he uses a series of simple phrases and sentences to describe in simple terms basic personal and occupational themes.</p> <p>S/he writes short, simple notes, messages and personal letters.</p> <p>S/he uses some simple grammatical rules.</p>	<p>The candidate uses its basic language skills and knowledge in everyday personal and occupational themes at a low level of autonomy.</p> <p><i>Description relate to „Common European Framework of Reference for Languages“.</i></p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Modul 5	Business English Basics – Level B1	
Generic title of the qualification	Foreign language	
The reference of the qualification according the EQF		
The candidate communicates in English at level B1.		
Knowledge	Skills	Competence
<p>The candidate can describe its own vocabulary as an extensive repertoire of familiar topics of professional and personal life.</p> <p>The candidate can describe advanced grammatical rules and structures.</p>	<p>The candidate understands the basics of clear standard speech on familiar matters as well as the main information of many slowly and clearly spoken radio and TV programs.</p> <p>S/he reads and writes simple, connected texts of high frequency everyday or job-related language as well as personal letters.</p> <p>The candidate deals with most situations whilst travelling in an area where the language is spoken.</p> <p>S/he can enter unprepared into conversations on familiar topics of personal and professional life.</p> <p>S/he connects phrases in a simple way to describe familiar matters.</p> <p>S/he briefly gives reasons and explanations for options and plans. S/he narrates a story or relates the plot of a book or film and describes her/his reactions.</p> <p>S/he uses basic grammatical rules.</p>	<p>Candidate communicates on familiar topics of professional and personal life on the first level of independent language use.</p> <p><i>Description relate to „Common European Framework of Reference for Languages“.</i></p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Module 6	Economics & Business Studies, General legal requirements - Basics	
Generic title of the qualification	Economic and business qualification	
The reference of the qualification according the EQF		
The candidate explains circulations of economic activities and supports experts in basic commercial tasks of business processes.		
Knowledge	Skills	Competence
<p>The candidate can define the fundamental terms, principles and legal basics of the economic activity and can describe the circulations and dependences in macroeconomics.</p> <p>S/he can describe the major provisions of corporate governances and names constitutive management decisions.</p> <p>S/he can distinguish various forms of organisations.</p> <p>S/he can explain operational and organisational structure as well as typical decision-making systems.</p> <p>S/he can describe human resources as a major component of business.</p> <p>S/he can describe basics of business processes in purchase, warehousing, production and sales.</p> <p>S/he can distinguish means of payment, classes of insurance as well as major types of taxes.</p>	<p>The candidate understands the rights and obligations of an organisation to exercise the right of co-determination at the establishment level.</p> <p>S/he reads and interprets organisation charts and function-oriented schemes and diagrams of operational structures.</p> <p>S/he supports in basic processes of purchase.</p> <p>S/he calculates and assesses KIPs to retrieve information about the business situation of an organisation.</p> <p>S/he calculates warehouse KPIs and assesses the results according to economical and ecological aspects.</p> <p>S/he applies simple advertising ideas and marketing tools to promote sales.</p>	<p>The candidate works under direction on basic commercial tasks within business processes, based on a general, economic understanding and with consideration of the legal basics of the economic activity.</p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Module 7	Bookkeeping/ Financial Accounting – Basics	
Generic title of the qualification	Economic and business qualification	
The reference of the qualification according the EQF level		
The candidate works with and keeps record of business transactions and supports in the preparation of financial statements in compliance with relevant regulations and laws.		
Knowledge	Skills	Competence
<p>The candidate can define fundamental terms and can explain basic principles and legal requirements of accounting.</p> <p>S/he can distinguish various posting and accounting systems as well as various ledgers.</p> <p>S/he can explain legal bases of inventory-taking.</p> <p>S/he can describe basics regarding the bookkeeping of fixed assets.</p> <p>S/he can name documentation obligations according to legal regulations.</p> <p>S/he can name statutory taxes.</p> <p>S/he can describe valuation bases of financial statements.</p>	<p>The candidate draws up, reads, and interprets a balance sheet.</p> <p>S/he applies the systems of single and double entry accounting, including the use of special computer programs.</p> <p>S/he posts current business transactions, mainly entries in purchase, sale, and HR.</p> <p>S/he takes account of input tax and sales tax.</p> <p>S/he takes inventory to list stock or goods on hand.</p> <p>S/he calculates depreciation expenses for assets and reports the carrying amount on the balance sheet.</p> <p>S/he supports in the preparation of financial statements regarding legal foundations.</p>	<p>The candidate acts independently and works with complex tasks of the internal accounting in a responsible manner, including the use of special software.</p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Module 8	Bookkeeping - Advanced	
Generic title of the qualification	Economic and business qualification	
The reference of the qualification according the EQF		
The candidate works with and keeps records of special business transactions. S/he calculates a realistic report of the financial status of the organisation.		
Knowledge	Skills	Competence
<p>The candidate can describe accounting provisions for financial transactions. S/he can issue various leasing contracts according to the legal requirements.</p> <p>S/he can explain the meaning of accrual accounting and the legal regulations.</p> <p>S/he can describe principles of provisions according to the commercial and fiscal law.</p> <p>S/he can name the valuation principles of assets and liabilities.</p> <p>S/he can name properties of a financial statement for private and capital companies. S/he can define KPIs concerning the asset and capital structure, liquidity, asset coverage, probability and cash flow.</p>	<p>The candidate posts business transactions in the area of financing and payment as well as for leasing businesses.</p> <p>S/he draws up revenue and expenses on an accrual basis.</p> <p>S/he makes provisions concerning legal requirements.</p> <p>S/he determines the valuation of assets and liabilities according to the standards of commercial and fiscal law.</p> <p>S/he prepares accounting and reporting documents for the financial statement taking into account legal regulations. S/he assesses the consequences.</p> <p>S/he calculates and assesses selective KPIs from the balance sheet.</p>	<p>The candidate creates an overview and manages the separate processes of the internal accounting. S/he makes an assessment of the balance sheet and KPIs taking into consideration the applicable legal regulations and internal and external interests.</p> <p>S/he takes responsibility for the internal accounting.</p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Module 9	Payroll accounting - Basics	
Generic title of the qualification	Economic and business qualification	
The reference of the qualification according the EQF		
The candidate calculates and transfers salaries and wages, creates and archives accounting documents, and registers contributions and taxes at the government agencies.		
Knowledge	Skills	Competence
<p>The candidate can define the fundamental terms and principles of payroll accounting.</p> <p>S/he can explain the differences between gross and net wages with reference to tax law and social security law as well as other individual deductions.</p> <p>S/he can emphasise legal regulations for tax-free benefits for employees.</p> <p>S/he can name the necessary accounting documents of payroll accounting.</p> <p>S/he can describe legal regulations for recording and reporting procedures.</p> <p>S/he can explain special payroll transactions, such as part-time employment or partial retirement.</p>	<p>The candidate manages employee master data.</p> <p>S/he calculates and transfers salaries and wages according to the legal regulations, including the use of special software.</p> <p>S/he creates and archives accounting documents according to the legal regulations and documentation obligations.</p> <p>S/he calculates and registers social security contributions, individual contributions and creates and transfers mandatory reports and statements.</p>	<p>The candidate independently manages general tasks of payroll accounting, according to legal regulations, including the use of special computer program.</p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Module 10	Payroll accounting/ Construction industry wages	
Generic title of the qualification	Economic and business qualification	
The reference of the qualification according the EQF		
The candidate manages the payroll accounting and supports the manager and employees with certain specialized questions.		
Knowledge	Skills	Competence
<p>The candidate can explain special accounting transactions concerning tax law and social security law, for example partial unemployment, employment of pupils, students and interns as well as transactions such as retirement pension.</p> <p>S/he can describe the benefits of using working hour accounts from the viewpoint of both the employee and employer.</p> <p>S/he can name the principles and special legal regulations of salaries and wages accounting for the construction industry.</p> <p>S/he can explain standard working-time-provisions and holidays accounts for the construction industry.</p>	<p>The candidate calculates and transfers salaries and wages with regard to any special accounting transactions, or legal regulations, also used within the construction industry, including the use of special computer programs.</p> <p>S/he solves complex questions of the payroll accounting in the construction industry.</p> <p>S/he considers data regarding working-time-provisions in payroll accounting and creation of accounting documents.</p>	<p>The candidate independently solves difficult and complex questions regarding payroll accounting, answers special questions appertaining construction industry, taking into account legal regulations. S/he uses and applies special software.</p> <p>S/he advises the manager and employees on specialised questions regarding payroll accounting.</p>
Workload	120 Notional learning hours	
Procedures and criteria for assessment of these learning outcomes		
ECVET points	6 (six)	

Annex II: What is ECVET?

ECVET is a technical framework for the transfer, recognition and, where appropriate, accumulation of individuals' learning outcomes with a view to achieving a qualification. ECVET tools and methodology comprise the description of qualifications in terms of units of learning outcomes with associated points, a transfer and accumulation process and complementary documents such as learning agreements, transcripts of records and ECVET users' guides.

ECVET is intended to facilitate the recognition of learning outcomes in accordance with national legislation, in the framework of mobility, for the purpose of achieving a qualification. It should be noted that ECVET does not imply any new entitlement for citizens to obtain the automatic recognition of either learning outcomes or points. Its application for a given qualification is in accordance with the legislation, rules and regulations applicable in the Member States and is based on the following principles and technical specifications:

SOURCE: RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June 2009 on the establishment of a European Credit System for Vocational Education and Training (ECVET), published in the Official Journal of the European Union, 8/07/2009

The Recommendation (REPC) was accepted as recommended on 18 June 2009 with the following 6 Articles:

The 6 articles of the ECVET Recommendation for member States

The 6 articles below are part of the ECVET Recommendation and are addressed to member States:

1. promote the European Credit system for Vocational Education and Training ('ECVET') as set out in Annexes I and II at all levels of the EQF with reference to VET qualifications, in order to facilitate trans-national mobility and the recognition of learning outcomes in VET and borderless lifelong learning ;
2. create the necessary conditions and adopt measures, as appropriate, so that as from 2012 – in accordance with national legislation and practice, and on the basis of trials and testing – it is possible for ECVET to be gradually applied to VET qualifications at all levels of the EQF, and used for the purpose of the transfer, recognition and accumulation of individuals' learning outcomes achieved in formal and, where appropriate, non-formal and informal contexts ;

3. support the development of national and European partnerships and networks involving institutions and authorities responsible for qualifications and diplomas, VET providers, social partners and other relevant stakeholders dedicated to trialing, implementing and promoting ECVET ;
4. ensure that stakeholders and individuals in the area of VET have access to information and guidance for using ECVET, whilst facilitating the exchange of information between the Member States. Furthermore, ensure that the application of ECVET to qualifications is properly publicised by the competent authorities and that associated 'Europass' documents issued by the competent authorities contain explicit relevant information ;
5. apply, in accordance with national legislation and practice, the common principles for quality assurance in VET set out in the Council conclusions of 28 May 2004 on Quality Assurance in Vocational Education and Training when using ECVET, particularly in relation to the assessment, validation and recognition of learning outcomes ;
6. ensure that there are functioning coordination and monitoring mechanisms at the appropriate levels, in accordance with the legislation, structures and requirements of each Member State, in order to guarantee the quality, transparency and consistency of the initiatives taken to implement ECVET.

What this all means in layman's terms is that with a desire and intention to facilitate job mobility across European member States as the driver, a system is being developed which will validate vocational learning however, and wherever it is achieved within Europe. This system is called ECVET (European Credit System for Vocational Education & Training). As a statement of intent, it implicitly acknowledges certain problems and issues, not the least of which are the differing national educational systems operating and the challenges of changing local custom and practice.

Annex III: ECVET and the European Qualifications Framework

The important facilitator for ECVET is the development of the European Qualifications Framework (EQF) which provides a parallel mechanism and reference and which is being implemented across member States. The EQF is a

common European reference system which will link different countries' national qualifications systems and frameworks together. In practice, it will function as a translation device making qualifications more readable. This will help learners and workers wishing to move between countries or change jobs or move between educational institutions at home.

The primary users of the EQF will be bodies in charge of national and/or sectoral qualification systems and frameworks. Once they have related their respective systems to the EQF, the EQF will help individuals, employers and education and training providers compare individual qualifications from different countries and education and training systems.

As an instrument for the promotion of lifelong learning, the EQF encompasses general and adult education, vocational education and training as well as higher education. The eight levels cover the entire span of qualifications from those achieved at the end of compulsory education to those awarded at the highest level of academic and professional or vocational education and training. Each level should in principle be attainable by way of a variety of education and career paths.

The EQF uses 8 reference levels based on learning outcomes (defined in terms of knowledge, skills and competences). The EQF shifts the focus from input (lengths of a learning experience, type of institution) to what a person holding a particular qualification actually knows and is able to do. Shifting the focus to learning outcomes...

- supports a better match between the needs of the labour market (for knowledge, skills and competences) and education and training provision
- facilitates the validation of non-formal and informal learning
- facilitates the transfer and use of qualifications across different countries and education and training systems.

It also recognises that Europe's education systems are so diverse that comparisons based on inputs, say length of study, are impracticable.

The EQF does not award qualifications but rather it is a framework to which qualification awarding bodies in member States will relate their own qualifications. The EQF simply describes levels of qualifications in terms of learning outcomes. The awarding of qualifications will remain a matter for national qualifications bodies.

The EQF is a voluntary framework, so there are no formal legal obligations on the countries. 2010 was the recommended target date for countries to relate their qualifications systems to the EQF, 2012 for them to ensure that individual qualification certificates bear a reference to the appropriate EQF level.

The EQF is fully compatible with the qualifications framework for Higher Education developed under the Bologna Process. Specifically, the EQF descriptors at levels 5-8 refer to the higher education descriptors agreed under the Bologna Process. However, the formulation of the EQF level descriptors differs from the Bologna level descriptors developed specifically for higher education needs because, as a *lifelong learning* framework the EQF also encompasses vocational education and training (VET) and work contexts, including at the highest levels.

Source: http://ec.europa.eu/education/pub/pdf/general/eqf/leaflet_en.pdf

To access descriptors for the 8 EQF levels, go to Annex II, pages 14 and 15 of the EQF brochure at: http://ec.europa.eu/education/pub/pdf/general/eqf/broch_en.pdf (for other language versions go to http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm and select the appropriate language option in the 'More information' section). To give a simple context though for VET, EQF Levels 4, 5 & 6 equate to the levels associated with undergraduate study, EQF Level 7 equates to masters level study and the top level in the EQF, Level 8 equates to doctoral study.

Looking at the paragraph above which discusses the EQF compatibility with the Bologna Process, the value of the EQF to the development of ECVET should be apparent in that it embraces vocational education and training (VET) and a complete range of educational levels. However, by contrast, ECVET, whilst not awarding qualifications as such, is a credit system as opposed to a reference system and for effective implementation it needs to be made into a **workable** and acceptable system for awarding credit across all European member States. To this end, a number of initiatives and projects have been undertaken to take due account of any issues and problems associated with the implementation of ECVET across Europe as well as deal with the practical and structural issues.

Annex IV: What is a Modular System of Education?

A modular educational system is a way to organise, structure, present, deliver and administer education. More specifically, a modular educational system is based upon the premise that an educational curriculum related to a specific area of study can be sub-divided into discrete elements which together constitute the total learning required/achieved. Typically each curriculum area in formal education would comprise a named **qualification** which could be divided into specific elements of learning (modules) according to subject matter (and learning outcomes). One of the complexities of a typical formal modular educational system is, however, that some of the learning modules for any given curriculum/qualification will be more advanced than other elements and will require prior knowledge and skills acquired earlier on in the delivery of the curriculum.

One of the easiest ways to explain a modular system of education is to use the example of building a wall using building blocks. Imagine that the building blocks are each learning modules. Some of the blocks will be important basic introductory knowledge, skills and competence – the foundations of the study. These blocks for construction of the wall must be laid first, providing stable foundations for the wall of study. The next row of blocks will build upon the initial ones and develop higher levels of knowledge, skills and competence and so on until the final row is reached. The final row of blocks represents completion of the wall and of the study programme. The learning from the final row of blocks should consolidate all the learning from the other rows of building blocks – the completed ‘wall of study’ (qualification). Each of the blocks has an important individual role and that ‘wall of study’ would not be complete without each and every block (module). Modules, therefore, are the building blocks of a qualification, but it is important to remember that in a good modular educational system, they exist as entities in their own right, each covering a distinct body or area of learning.

The main condition for using a modular system of education is that the overall curriculum – the total amount of learning (knowledge, skills and

competence) – should be capable of division into a number of distinct packages (modules) of study. Another condition is that these modules of study can be ordered in terms of level of difficulty such that any of the modules which are **pre-requisites** of higher levels of learning (i.e. they must be achieved/passed **before** attempting more difficult modules), and which therefore represent the foundation blocks of the curriculum as a whole, are assigned a given academic **credit level**, whilst more advanced modules, which build upon the foundation modules, are assigned a higher **credit level**. This will be explained later using the example of the modular scheme in accounting developed earlier in this M-ECVET-S project by IBS.

Another factor in the development of a modular system of education is the relative size and importance of the modules which comprise a given qualification. In theory, any given curriculum should be capable of division into modules of a wide variety of sizes. In some institutions adopting a modular system this theory is also reflected in practice. However, many other modular systems, for a variety of reasons, choose to divide a total curriculum into modules of equal size and ‘weight’/credit value. This has the advantage of simplicity, ease of comprehension, flexibility and, looking forward, should facilitate application across EU national boundaries and education systems.

The next consideration in the development of a modular educational system is how many modules should comprise a particular programme of study (qualification) and what will be the credit value of each and on what basis will that be calculated and justified? In the context of the recommendations of this M-ECVET-S project, the important criterion of **workability** has been the guide.

The UK Higher Education Council (HEC) book *Developing Student Capability Through Modular Courses* (1994) gives useful descriptions of modules and programmes of learning in the context of modular degree programmes, as follows:

A module:

- must have explicit aims;

- must specify intended outcomes;
- must specify, where appropriate, any prior learning which is required; will make clear the methods of learning and the context in which the learning activities take place;
- should provide for differentiated learning experience;
- may be subject-specific, occupation-specific, cross-curricular, or a combination of these.

A programme of learning:

- should have a clearly defined set of governing criteria;
- should provide entry points based on previous learning experience and exit points
- consistent with future aspirations;
- may be composed of modules of a variety of types;
- must provide individual students with a balanced, progressive and coherent learning
- experience;
- may incorporate modules which also appear in other programmes;
- must be sufficiently flexible to meet the changing needs and aspirations of students.

Whilst the above might seem on first inspection to be a set of restrictions within a modular educational system, on closer inspection it offers great flexibility when considered across formal, informal and non-formal learning methods and provides some rationale for the adoption of a modular system for ECVET in particular.

The rationale for well-designed modular programmes also uses arguments that such a system provides greater student choice, learner autonomy, flexibility for individual student circumstances, adaptability to new modes of learning and assessment and the potential responsiveness to changes in the areas of learning (e.g. the impact of the Internet and social media or key changes in legislation) by updating of individual modules as opposed to whole programmes.

On the other hand, critics of a modular educational system might counter-argue that poorly designed modular programmes are vulnerable to intellectual incoherence, to fragmentation, to problems with continuity and progression of learning, to loss of student identity and to excessive bureaucracy. However, in the context of developing and implementing a **workable** method for achievement of the aims of ECVET as outlined in the previous section, the arguments for a modular system would seem to outweigh those against.

ANNEX V: Why utilise ECVET for a Modular System?

The aim of ECVET being to facilitate the mobility of the workforce in vocational education and training (VET) across Europe, the challenge is to devise structures and systems that are workable across a wide range of educational cultures and systems. As indicated earlier in Section 3, the European Qualifications Framework (EQF) is a European Union initiative to create a translating facility for referencing academic degrees and other learning qualifications among EU member states and this Europe-wide move to harmonise educational systems through the application of the European Qualifications Framework (EQF) is a major milestone in establishing a sound platform upon which to build workable ECVET systems.

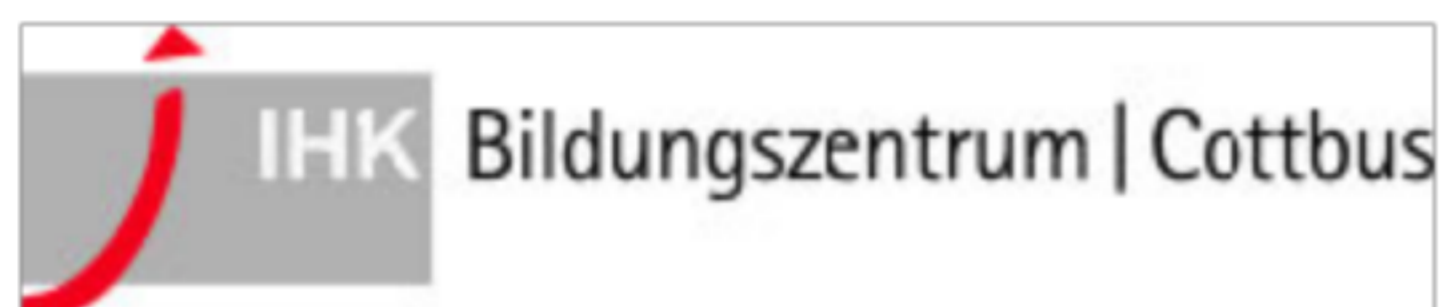
‘Workability’ involves the development of a means of ECVET that can be easily adopted and adapted to the educational systems of EU member states and provide levels of transparency and equivalence in relation (specifically) to VET. Workability in this context is aided by the implementation of the EQF across EU member states, which provides common levels of learning achievement.

A modular system for ECVET would have the important benefit of simplicity, transparency and flexibility. Conceptually the modular system is very easily understood and, given that an ECVET modular system would sit outside the academic Establishment but inside the vocational environment, it should avoid the ‘not invented here’ response that might come from the academic community.

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