

# HANDBOOK FOR

## Internal Quality Management in Competence-Based Higher Education



feasible

participation

utilisation-focused

INTERNAL QUALITY MANAGEMENT

TOOLKIT HIGHER EDUCATION

evaluation

student-centred learning

flexible

DEFINE

COMPETENCES

learning outcomes

implementation

EHEA

ENHANCE

science-based

empowerment

dialogue

SCREEN

ESG



# HANDBOOK FOR

## Internal Quality Management in Competence-Based Higher Education

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- Enter the project title 'Internal Quality Management: Evaluating and Improving Competence-Based Higher Education' in the search bar to get to the project homepage.

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# EUROPEAN TOOLKIT

This handbook is part of the *European Toolkit for Internal Quality Management in Competence-Based Higher Education*. The toolkit was developed in course of the Erasmus+ project 'Internal Quality Management: Evaluating and Improving Competence-Based Higher Education'. Hence, the handbook is accompanied by tools which should help the persons in charge of Internal Quality Management in Competence-Based Higher Education in implementing the Internal Quality Management Procedure (IQM-Procedure) suggested in this handbook. The toolkit is available for free at the Erasmus+ platform for project results:

- Go to <http://ec.europa.eu/programmes/erasmus-plus/projects>.
- Enter the project title 'Internal Quality Management: Evaluating and Improving Competence-Based Higher Education' in the search bar to get to the project homepage.
- You can find the toolkit in the results section of the project homepage.

In the following we will provide an overview of the tools according to the IQM-Procedure.

## General

Tool 1: Handbook for Internal Quality Management in Competence-Based Higher Education

## Preparation Phase

Tool 2: Information material for decision-makers (template)

Tool 3: Information material for potential IQM-team members (template)

Tool 4: Workshops for preparation phase (template)

Tool 5: Calculation of resources (suggestion)

## Step 1: Define Competences

Tool 6: Workshops & working groups for Step 1 (template)

Tool 7: Competence model form (template)

Tool 8: Communication plan for Step 1 (template)

Tool 9: Information material for different stakeholder groups for Step 1 (templates)

## Step 2: Screen Competences

Tool 10: Communication plan for Step 2 (template)

Tool 11: Information material for different stakeholder groups for Step 2 (templates)

Tool 12: Competence Screening Questionnaire for Higher Education (CSQ-HE; fact sheet + template)

Tool 13: Screening report (based on the Competence Screening Questionnaire for Higher Education – CSQ-HE; template)

## Step 3: Enhance Competences

Tool 14: Workshops for Step 3 (template)

Tool 15: Collection of possible measures for quality enhancement and quality assurance

## Reflection Phase

Tool 16: Reflection and questions for reflection phase

## Sustainability

Tool 17: Rules of procedure for quality management board (template)

# FOREWORD

In the past decade the Bologna Process has brought about a number of important reforms in European higher education. These have included the convergence of degree structures, the establishment of a common credit transfer and accumulation system, and the use of a Diploma Supplement for the purpose of transparency, mobility and facilitated recognition of degrees and periods of study. Quality assurance in the European context has evolved in parallel with the Bologna Process, and one of the most important milestones has been the adoption of a common framework for quality assurance across Europe, namely the Standards and Guidelines for Quality Assurance in the European Higher Education Area (the ESG) in 2005.



More recently, the Bologna Process has brought about a shift from a focus on teaching and input measures to a focus on students and their learning outcomes. This is reflected also in the revised version of the ESG adopted in 2015. Consequently, many institutions have started to explore and use new pedagogical methods that are more student-centred, and to implement competence-based approaches to teaching and learning. Internal quality management procedures for higher education need to modernise, too, to take this recent trend into account.

To date, in line with institutional autonomy, developing an internal quality management procedure has been the responsibility of each individual institution. While this approach remains valid, and while one model will never be able to fit all institutions, in order to support the institutional efforts in this field, the IQM-HE project sets off to develop and test a European Handbook for Internal Quality Management of Competence-Based Higher Education. The handbook provides practical advice to institutions when reflecting on the best way to implement an internal quality management system suited specifically to competence-based learning and teaching through a comprehensive approach which addresses different elements of a competence-based teaching and learning process such as curriculum, teaching and assessment methods, and students' learning strategies.

The proposed IQM-Procedure is flexible and adaptable for use by higher education institutions of different profiles, located in different countries, that wish to strengthen their competence-based education provision and its quality assurance. ENQA believes that institutions will find the handbook a useful tool for improving their quality management systems to better take into account the requirements of competence-based higher education, and to support the enhancement of a student-centred learning approach.

A handwritten signature in black ink that reads "Padraig Walsh". The signature is written in a cursive, flowing style.

Padraig Walsh, ENQA President

## A new path

It can actually be described as a huge success when a consortium of ten institutions collaborated in developing a European toolkit for internal quality management that offers a procedure that has been developed on a bottom-up-basis.

The present handbook suggests an Internal Quality Management Procedure for Competence-Based Higher Education involving three major steps starting from defining intended student competences, through screening competences, leading to enhancing competences by interpreting screening results and developing quality assurance measures.

All of this done with the aim of creating and offering a basic structure that enables higher education institutions to evaluate and improve competence-based higher education. The main focus is on students' competences as an outcome of the teaching and learning process. Essential is the shift from a teacher centered to a student centered learning environment, which of course leads to an overturn of common structures and procedures. However, only this will lead our institutions to competence-based higher education.



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In March 2010 the European Higher Education Area (EHEA) was launched – continuous development, enhancement and strengthening are on the agenda. Developments in the EHEA have been substantially responsible for the present guide, that frames a basis for quality management and at the same time offers flexible adaptation and usability for persons in charge of internal quality management on the one hand and institutions with a focus on competence-based higher education on the other hand.

Science provides insights into contexts and solutions to concrete problems, produces new information and methods that can serve as a basis for social disputes, assessments and decisions. Facing the future challenges lies in our responsibility and we are aware of our role as actors and designers of future economy and society. Therefore, launching guidelines that support competence-based higher education can only be seen as a big profit to increase efficiency in the European Higher Education Area, to strengthen transnational cooperation and to put a systematic focus on the most important capital we have – our young generation.



**Prof. Dr. Ivan Svetlik**  
Rector of the University of Ljubljana



**Prof. Dr. Greta Druteikiene**  
Pro-rector for Partnership  
of the Vilnius University



# INTRODUCTION

Why this handbook might be useful for  
your higher education institution

What is this handbook about?

Why has this handbook been developed?

Which procedure is proposed to be implemented?

Who is this handbook for?

What is this handbook not about?

# INTRODUCTION

## Why this handbook might be useful for your higher education institution

### What is this handbook about?

#### **A procedure for internal quality management in higher education**

This handbook provides you with a procedure for internal quality management in competence-based higher education.

For the internal quality management in higher education (IQM) we refer to the enhancement and quality assurance of teaching and learning in various study programmes. Higher education institutions use different measures to continually enhance their provision. The proposed internal quality management procedure (IQM-Procedure) in this handbook could be integrated into an existing IQM system in order to focus on the improvement of the teaching and learning process in relation to the students' competences. It can stimulate the discussion about students' competences at your higher education institution by simultaneously following a participative approach that empowers all the stakeholders.

#### **Competence-based higher education defined**

In our understanding, competence-based higher education focuses on students' competences as an outcome of the teaching and learning process. Concentrating on the competences in higher education was caused by the paradigm shift from a teacher-centred to a student-centred learning environment.

Competence-based higher education includes the process from defining intended student competences due to a study programme, to assessing the final perceived student competences achieved mediated by the teaching and learning process. The process is illustrated in more detail in the model of competence-based higher education depicted in the middle part of Figure 1. The model starts with the definition of intended student competences. We see intersections between the research based concepts of competences and the policy based concept of learning outcomes<sup>1</sup>. We use the term 'intended competences' for those competences students should acquire by a specific study programme. In practice, these competences are often referred to as intended learning outcomes on programme level.

The model further describes the teaching and learning process, where the curriculum, as well as the teaching methods and assessment methods address the intended student competences. The teaching and learning process also takes into consideration the active role of students and incorporates the students' learning strategies. The results of the teaching and learning processes are the perceived student competences that the students have achieved. 'Perceived competences' are on the one hand seen as the students' self-assessment of the achieved competences and on the other hand, as the teachers' perception of the students' competences achieved. A study programme reaches its goal if the perceived student competences are on the same level as the intended student competences defined in the beginning<sup>2</sup>.

<sup>1</sup> For more information about competences and learning outcomes see subsequent chapter 'Competence Research'

<sup>2</sup> For more information on the Model of Competence-Based Higher Education please see the subsequent chapter 'Competence Research'.

## Why has this handbook been developed?

### **Internal quality management for competence-based higher education is needed**

The Bologna Process<sup>3</sup> promoted competence-based higher education in the European Higher Education Area. Accordingly, many institutions are focusing on students and their competences and have implemented competence-based higher education. Internal quality management procedures for higher education also need to take this trend into account. Internal quality management should focus on student competences as well as on competence-based higher education.

### **European higher education institutions are working within the same framework**

Developing an internal quality management procedure used to be the responsibility of each individual higher education institution. This is reasonable in view of the many different cultures and fields of studies as well as in view of institutional autonomy. However, the Bologna Process led to common ground and institutions are now working within the same framework, i.e. Bachelor-Master-PhD degrees, European Credit Transfer System, or competence-based higher education. Furthermore, the institutions have the same framework for quality assurance, as defined by the European Standards and Guidelines for Quality Assurance in the European Higher Education Area.

### **Different perspectives are considered**

Although there are many similarities between European institutions, there was no basic structure for internal quality management procedures for competence-based higher education suitable for different institutions and based on the ESG (2015). Filling this gap and developing such procedures can only be done by means of cooperation and strategic partnerships. Hence, a consortium of ten institutions collaborated in developing this handbook. The ten institutions represent the perspective of practitioners and researchers, as well as experts in the field of quality assurance in higher education. The new Internal Quality Management Procedure, in short, the IQM-Procedure, provided in this handbook, is based on broad expertise.

## Which procedure is proposed to be implemented?

### **The proposed IQM-Procedure is science based**

The IQM-Procedure provided in this handbook does not only address developments in the European Higher Education Area. It is also based on competence and evaluation research. Furthermore, the handbook provides information on how to implement the IQM-Procedure at a higher education institution. Hence, the handbook is also based on implementation research.

### **The proposed IQM-Procedure consists of three steps**

The proposed IQM-Procedure in this handbook consists of three steps. As depicted in Figure 1, the first step is to define intended competences and competence-levels students should acquire by a specific study programme (= elaborating a competence model). The second step is collecting screening information on the competence-based teaching and learning process as well as on student competences. The third step is to go into detail of the teaching and learn-

<sup>3</sup> ESG (2015)

ing process and to analyse the screening information with regard to the different elements of the teaching and learning process (curriculum, teaching methods and assessment methods, students' learning strategies, and context). Based on the analyses, quality enhancement and quality assurance measures are developed.

### Constructive Alignment

The basic idea behind following all these steps in the IQM-Procedure is similar to the idea of constructive alignment<sup>4</sup>, which means that the outcomes that should be reached are defined and teaching and assessment are aligned to these outcomes. That means there would be an alignment between the intended learning outcomes of a curriculum, the student learning tendencies to reach these outcomes and how the outcomes are assessed. In the end, every element should be inter-related and correspond to the others so that the formulated competences can be reached by what is taught and they can be assessed by fitting assessment forms.

This was just a short introduction to the proposed IQM-Procedure. Please find the details in Part 2 of this handbook.

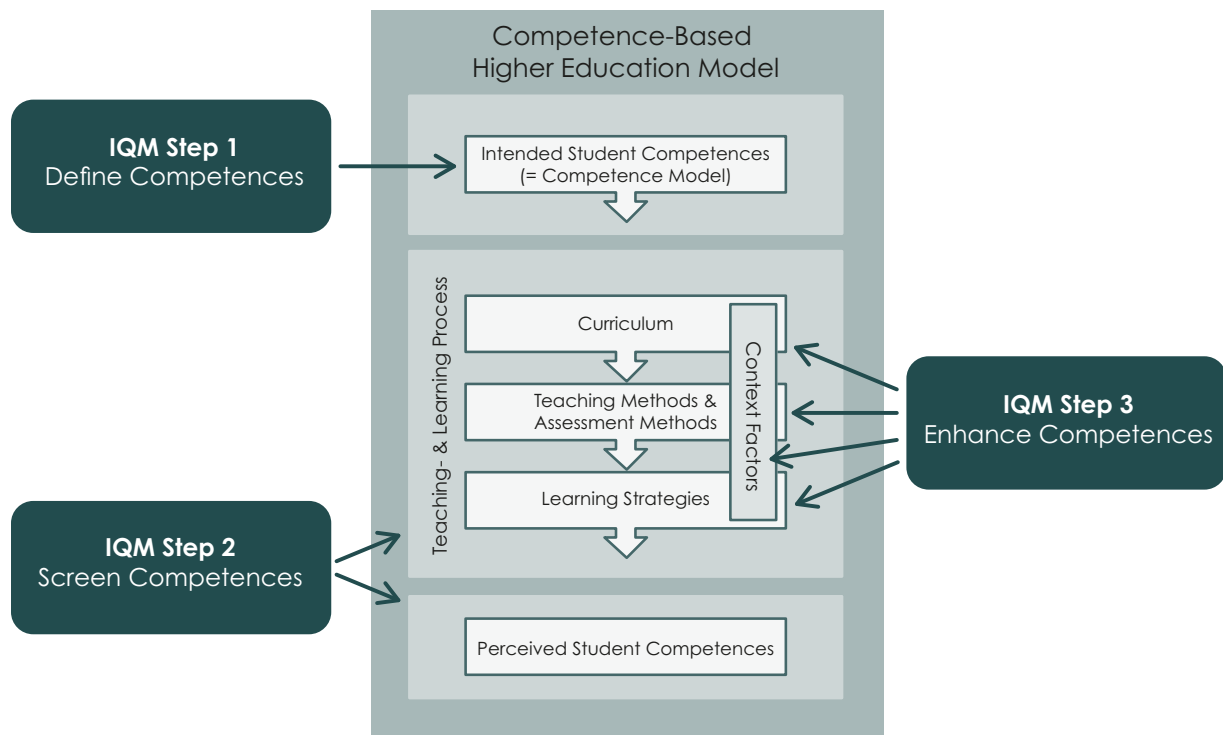


Figure 1: The IQM-Procedure

<sup>4</sup> Biggs & Tang (2011)



## Who is this handbook for?

### This handbook is for institutions that focus on competence-based higher education

- That plan to implement or already have **implemented competence-based higher education**.
- That are **interested in evaluating** and improving competence-based higher education.
- That aim to **empower their stakeholders** by applying participative evaluation methods; the IQM-Procedure is based on the participative evaluation approach<sup>5</sup>.
- That want to **foster the organizational change management** process towards competence-based higher education; the IQM-Procedure involves all relevant stakeholders
- That are willing to **dedicate resources** to the implementation process; the handbook emphasises a proper implementation<sup>6</sup>.
- **Of various disciplines or higher education types**; it provides a non-domain-specific internal quality management procedure that applies to higher education institutions regardless of the mode of study or place of delivery.
- That are **looking for a science-based quality management procedure** for competence-based higher education; the handbook is based on competence research, evaluation research, and implementation research<sup>7</sup>.
- Especially **within the European Higher Education Area** because the starting points for this handbook are developments in the European Higher Education Area<sup>8</sup>. However, the handbook might be helpful for any higher education institution that needs a science-based quality management procedure for competence-based higher education.

### The handbook is for the person(s) in charge of internal quality management who is/are looking for a flexible procedure

The target group of this handbook is/are the person(s) in charge of internal quality management of higher education institutions<sup>9</sup>. We provide a procedure for internal quality management that can and should be adapted to the higher education's context. We provide a basic structure of the procedure which is the three steps depicted in Figure 1. The methods for implementing the three steps can differ depending on the institutions context. The handbook therefore includes not only a very concrete method for the implementation process but also core components to be considered if the suggested concrete method is not appropriate for your higher education institution.

### The handbook is for the person(s) in charge of internal quality management who wants to start with a pilot project

The handbook helps the person(s) in charge of internal quality management who would like to start a pilot project at a higher education institution. This pilot project focuses on competence-based higher education of only one specific study programme. However, the handbook also provides some information on how to expand the proposed IQM-Procedure to other study programmes of your institution.

<sup>5</sup> See chapter 'Evaluation Research' for further information.

<sup>6</sup> See chapter 'Implementation Research' for further information.

<sup>7</sup> See chapter 'Research Developments' for further information.

<sup>8</sup> See chapter 'European Higher Education Area Developments' for further information.

<sup>9</sup> If you need more compact information material about the IQM-Procedure you can find it in the Toolkit.

## What is this handbook not about?

### **This handbook is/does NOT:**

- Provide a symposium on pros and cons of competence-based higher education: each institution has to decide for itself whether to implement competence-based teaching and learning.
- A binding guideline: each institution has to decide for itself whether the proposed IQM-Procedure meets the institutions' needs.
- Provide the instruments to collect objective data on student competences nor on the teaching process; the focus is on the participants view; however, objective instruments can be added to the procedure.

After this brief introduction, we will now give you insights into various developments that influence the internal quality management in competence-based higher education, i.e. European Higher Education Area, as well as research and other developments. In Part 2, we will give you information about how the proposed IQM-Procedure for competence-based higher education works and how to implement it at a higher education institution.







# DEVELOPMENTS

Developments which are influencing internal quality management in competence-based higher education

## European Higher Education Area Developments

- The Standards and Guidelines for Quality Assurance in the European Higher Education Area
- Transparency and Recognition Tools
- External Quality Assurance

## Research Developments

- Competence Research
- Evaluation Research
- Implementation Research

# DEVELOPMENTS

Developments which are influencing internal quality management in competence-based higher education

## Considerable Developments

Internal quality management in higher education is influenced by different requirements and developments (see Figure 2). In this chapter we consider developments within the European Higher Education Area as well as research developments. Stakeholders' needs are a very important factor in this, as well. Internal quality management aims to involve stakeholders while also serving their needs.

## Inconsiderable Developments

As this handbook is meant to be used by institutions in different fields and countries, it doesn't include domain- or profession-specific standards nor national standards or guidelines. This handbook also does not explicitly incorporate individual institutional standards or guidelines. However, the subsequent section on the IQM-Procedure provides a flexible procedure in which it is highly recommended integrating domain- or profession-specific, national as well as the individual institutional standards and guidelines.



Figure 2: Influences on Internal Quality Management in Higher Education. The IQM-Procedure explicitly considers influences highlighted in red.

**Different developments – different languages**

It is our ambition to integrate the above mentioned different perspectives on internal quality management in the subsequent provided IQM-Procedure. The developments in the European Higher Education Area and developments in research are not necessarily linked to each other. As a consequence, policy and research often use a different terminology when talking about the same topic in quality management in competence-based higher education and the other way round: policy and research often use the same terms but differ in their understanding of the term. In this handbook, the different perspectives are being brought together. Clarification of the meaning of terms and some background information will be provided in the following chapters. This will help the reader to understand the specific perspective and why this perspective is important for internal quality management in competence-based higher education.

## European Higher Education Area Developments

### What is this chapter about?

- The latest developments in the Bologna Process
- The role of quality assurance in the Bologna Process
- Main milestones related to quality assurance in the Bologna Process

### Latest developments of the Bologna Process

The setting up of the European Higher Education Area (EHEA) is the result of the European-wide Bologna Process for the reform of higher education. The aim of the Bologna Process, as defined by the Bologna Declaration in 1999, from which the process takes its name, is to create a harmonised area for European higher education based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world. The main objectives of the European Higher Education Area are to:

- Facilitate mobility of students, graduates and higher education staff;
- Prepare students for their future careers and for life as active citizens in democratic societies, and support their personal development;
- Offer broad access to high-quality higher education, based on democratic principles and academic freedom.

The Bologna Process is a voluntary intergovernmental process which started with 29 signatory countries and has now come to cover 48 countries that are parties of the European Cultural Convention. An important characteristic of the Bologna Process is that, in addition to national ministries of the signatory countries, it also involves the European Commission, Council of Europe and UNESCO, as well as the European level representative organisations of higher education institutions<sup>10</sup>, students<sup>11</sup>, staff<sup>12</sup>, employers<sup>13</sup> and quality assurance agencies<sup>14</sup>.

Even though the European Higher Education Area was launched in 2010, several of the reforms are yet to be implemented fully in several of the participating countries. One of the main priorities expressed in the Yerevan Ministerial Conference communiqué is to support the member countries to implement the 'Bologna reforms'. Other main priorities since 2015 are employability of graduates, opening up of the EHEA to an international dialogue with other world regions, and the shift from teacher centred learning (input) to student-centred learning (output).

### Quality Assurance in the Bologna Process

Quality assurance has been one of the main pillars of the Bologna Process from the very beginning and maintains a key role in the development of the European Higher Education Area. In the latest report on the implementation of the Bologna Process presented to the Ministerial Conference in Yerevan in May 2015, quality assurance was singled out as one of the success stories of the Bologna Process.

<sup>10</sup> The European University Association (EUA) and the European Association of Institutions in Higher Education (EURASHE)

<sup>11</sup> The European Students' Union (ESU)

<sup>12</sup> Education International

<sup>13</sup> Business Europe

<sup>14</sup> The European Association for Quality Assurance in Higher Education (ENQA)

The three main quality assurance related milestones within the Bologna Process are (1) the adoption of a common set of standards for internal and external quality assurance in Europe, namely the Standards and Guidelines for Quality Assurance in the European Higher Education Area (the 'ESG'); (2) the implementation of a range of transparency and recognition tools (e.g. the Diploma Supplement or the ECTS) and (3) the establishment of the European Quality Assurance Register (EQAR) in 2008. EQAR is managing a register of quality assurance agencies that have demonstrated through an external review their compliance with the ESG.

Related to the high diversity – which is considered as a valuable asset and not as a liability – within the European Higher Education Area, one of the major concerns of the Bologna Process is an increasing transparency of and within the national educational systems and its specific elements. Therefore, different tools and initiatives were established to support transparency and recognitions within the EHEA.

Considering the significance of the shift of focus toward student-centred learning approaches and the learning-outcomes based approach – as opposed to input based approach – quality assurance of competence-based higher education fits very well into the current trends in the European Higher Education Area. In the following sub-chapters we will provide more information on these three main milestones.

## The Standards and Guidelines for Quality Assurance in the European Higher Education Area

### What is the chapter about?

- The Standards and Guidelines for Quality Assurance in the European Higher Education Area (the ESG) as a set of the common framework for quality assurance
- The relevance and implications of the ESG for IQM of competence-based higher education

### European Standards and Guidelines for Quality Management in Higher Education

The ESG are a set of standards and guidelines for internal and external quality assurance in higher education. The ESG are not standards for quality, as such, and they do not prescribe how the quality assurance processes are implemented. However, they provide guidance, and indicate the areas that are vital for quality in higher education. The ESG are 'generic principles' that allow for diversity of practical implementation. They also underline that 'a single monolithic approach to quality and quality assurance in higher education' in the EHEA is not appropriate due to the diversity in approaches and higher education traditions across the area. In other words, the ESG describe 'what' should be achieved, rather than 'how' it should be done.

The purposes of the ESG are to provide a common framework for quality assurance in Europe; to enable the assurance and improvement of quality of higher education; to support mutual trust; and to provide information on quality assurance in the EHEA.

The ESG 2015 are based on the following four principles:

1. The primary responsibility lies with higher education institutions for the quality and quality assurance of their provision;



2. Quality assurance needs to respond to the diversity of higher education systems, institutions, programmes, and students;
3. Quality assurance needs to support the creation of a quality culture; and
4. Quality assurance takes into account the needs and expectations of students, other stakeholders, and the society.

The focus of the ESG is on quality assurance related to learning and teaching in higher education, and while they also consider the overall learning environment and the relevant links of teaching and learning to research and innovation, they do not address the quality assurance of these elements directly. The ESG apply to all higher education offered in the EHEA regardless of the mode of study or place of delivery. This means that the ESG cover equally both e-learning and traditional face-to-face learning, as well as, cross-border provision of institutions in the EHEA. They are composed of three parts addressing internal quality assurance, external quality assurance, and the quality assurance of the quality assurance agencies in higher education. All three parts are an integral part of a well-functioning quality assurance system.

The ESG were developed in 2005 and revised in 2015. In terms of changes compared to 2005, the ESG 2015 take account of the developments in European higher education since 2005, such as the shift to student-centred learning and the need for flexible learning paths and the recognition of competences gained outside formal education. In addition, the increased internationalisation of higher education, the spread of digital learning, and new forms of delivery are listed as important developments influencing the quality assurance of higher education. The ESG 2015 also make reference to other tools at the European level that contribute to transparency and trust in higher education, such as the qualifications frameworks, the ECTS, and the diploma supplement, and thus support the use and implementation of such tools.

### **The relevance of the ESG for internal quality management of competence-based higher education**

The first part of the ESG<sup>15</sup> is related to standards of internal quality assurance within an institution or a department. The standards listed in this part are an essential basis for the creation or modification of a quality management system within an institution, school or department, whatever the learning approach that has been adopted. In fact, the standards apply also to internal quality management of competence-based learning, and therefore must be carefully addressed by it.

The ESG 2015 have a strong focus on student-centred learning and the learning outcomes based approach, and therefore it can be said that competence-based higher education and the related internal quality management systems and methods can find their place at the very heart of the ESG. In fact, several of the standards of Part 1 make explicit reference to a learning outcome-based approach, to flexible learning paths, to recognition of prior learning, to quality assurance of training periods, and to a student-centred learning approach in general. The following standards merit specific scrutiny and assessment in the context of competence-based higher education:

- Standard 1.2 on design and approval of programmes, which requires that programmes are designed with expected learning outcomes in mind, and involving all relevant stakeholders in the process;

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<sup>15</sup> Please find the summary of the ESG in Annex 1. The whole document please find here: <http://www.enqa.eu/index.php/home/esg/>



- Standard 1.3 on student-centred learning, teaching and assessment, which requires that the way in which programmes are delivered encourages students to take an active role in their learning process, and that assessment methods need to follow the student-centred approach;
- Standard 1.4 on student admission, progression, recognition and certification, which includes issues related to the recognition of prior learning;
- Standard 1.5 on teaching staff, which highlights the changing role of teachers in student-centred learning; and
- Standard 1.6 on learning resources and student support, which are expected to be suitable for the specific learning methods used, and adapted to the existing student population with its diverse needs.

The ESG set thus important demands on all higher education delivery, but due to their strong focus on student-centeredness, they are of high relevance and will find natural resonance in the competence-based higher education approach. It is highly recommended that all institutions consider the Part 1 of the ESG in detail, and integrate their requirements into their internal quality assurance methods and tools. The specific issues that higher education institutions should consider in this context are addressed in section on external quality assurance below.

#### **Recommendations for further reading:**

Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). (2015). Brussels, Belgium.

## **Transparency and Recognition Tools**

### **What is the chapter about?**

- Overview of Transparency and Recognition Tools
- Description of Europass, the European Quality Framework and the ECTS
- Implications for Internal Quality Management

Increased transparency within the EHEA and a high rate of recognition between the Institutions within the EHEA laid the foundation of Trans-European study-experiences. This chapter provides a concise description of transparency rules and recognition tools, which helped to increase student-flexibility within the EHEA. A description of the implications for internal quality management in general and for competence-based instruments within internal quality management in particular is included in the following chapter.

### **Overview**

On the part of the European Commission, many transparency and recognition tools were established to support the aim of student-flexibility within the EHEA. The Info Box provides a list of the most important transparency and recognition tools. Links can be found in the further reading box at the end of the chapter.

### Transparency and Recognition Tools

- The European Credit Transfer and Accumulation System (ECT System)
- Europass
  - Diploma Supplement
  - Language Passport
  - Europass Mobility
  - Certificate Supplement
- The European (National) Qualification Frameworks
- The ENIC-NARIC Network
- The U-Multirank Project
- The European Tertiary Education Register (ETER)
- European Inventory on Validation (VET)

These initiatives are not only relevant for the flexibility of students and graduates within the EHEA, but also for (internal) quality management of higher educational institutions in relation (e.g. with the ECTS and workload issue), which is described in more detail below. Three of the most relevant tools (the ECTS, the Europass, and the Quality Frameworks) for our competence-based project are described in the following.

### Europass, the European Quality Framework and the ECTS

A Higher Education Area that focuses on high student flexibility between the national systems needs a measure which enables the comparison of different graduation certificates, as well as, different study modules. The basis of this 'educational currency' in the EHEA is the workload of learners to reach the intended learning outcomes, which additionally, enables higher educational institutions to follow the learner-orientation paradigm. Therefore, within the ECTS, a pre-defined number of working hours results in credit points. Bachelor programmes in the EHEA have an amount of 180-240 credit points and Master programmes 60-120 credit points, where one credit point equates to (approximately) 25-30 working hours.

Within the EHEA a lot of initiatives like Europass (e.g. on a personal level) or the European Qualification Frameworks<sup>16</sup> (e.g. on a supra-national level), as well as, the National Qualification Frameworks help to describe competences of graduates received during their studies in the individual institutions. These initiatives ensure flexibility between the high range of national educational qualifications and its levels within Europe. Consequently, these instruments support higher educational institutions in finding the best potential students, as well as, employers to be able to compare the formal qualification of potential employees in selecting the best employees. Moreover, job seekers or students are able to move quite flexible within the EHEA.

### Implications for Internal Quality Management

The most crucial competence-related factor when introducing and monitoring an ECT System within an institution is its linkage to student workload. It is commonly known, that invested time of learners highly correlates with the learning outcome<sup>17</sup>. Internal, as well as External Quality Management works with instruments to directly or indirectly evaluate and support the balance

<sup>16</sup> Bologna-Process (2007-2010) or the European Commission (2008)

<sup>17</sup> Ebbinghaus (1885); Anderson (2000)

between normative workload in the curriculum and empirical workload in the learning process, as well as, instruments to evaluate the quality of the learning time invested. A practical guideline that introduces an evaluation instrument for competences of learners helps to investigate and discuss lacks in the normative-empirical-workload-fit, as well as, the quality of the teaching and learning process. This toolkit introduces a methodology that supports a wide range of stakeholders. Additionally, it can help to reflect the implicit assumptions in the curriculum of an optimal workload mix of several modules (and their integration).

However, evaluating competences not only corresponds to the ECT System, but also to several other instruments, like the Europass initiative or the European Qualification Frameworks, where competences of graduates are defined (directly or indirectly) and have to be evaluated by internal quality management mechanisms. This project therefore gives insights on empirical qualifications of students and graduates within the learning process.

#### Recommendations for further reading:

- The European Credit Transfer and Accumulation System (ECT System): [http://ec.europa.eu/education/ects/ects\\_en.htm](http://ec.europa.eu/education/ects/ects_en.htm)
- Europass: <https://europass.cedefop.europa.eu/en/home>
  - Diploma Supplement
  - Language Passport
  - Europass Mobility
  - Certificate Supplement
- The European (National) Qualification Frameworks: <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/qf/qf.asp>; [https://ec.europa.eu/ploteus/search/site?f\[0\]=im\\_field\\_entity\\_type%3A97](https://ec.europa.eu/ploteus/search/site?f[0]=im_field_entity_type%3A97)
- The ENIC-NARIC Network: [http://ec.europa.eu/education/tools/naric\\_en.htm](http://ec.europa.eu/education/tools/naric_en.htm)
- The U-Multirank Project: [http://ec.europa.eu/education/tools/u-multirank\\_en.htm](http://ec.europa.eu/education/tools/u-multirank_en.htm)

## External Quality Assurance

### What is this chapter about?

- Brief overview about the aims, principles, role, and approaches of external quality assurance
- Relevant aspects from an external quality assurance perspective for implementing the IQM-procedure

### Aims of external quality assurance in higher education

In almost all European countries, higher education institutions and/or their programmes have to undergo external quality assurance procedures. The development of external quality assurance within the EHEA aims in general at:

- Assuring standards on programme and institutional level in relation to existing national laws and relevant international standards
- Supporting the continuous improvement of quality management systems and the quality at programme and institutional level

- Demonstrating the quality of national higher education systems by increasing transparency as a prerequisite for better recognition of qualifications and programmes.

### Principles of external quality assurance

At European level the ESG serve as a main reference point for external quality assurance (ESG Part II) and the work of quality assurance agencies (ESG Part III) in the EHEA. External quality assurance procedures are designed and conducted in accordance with the ESG and follow the four principles<sup>18</sup> deriving from them. The framework provided by the ESG for external quality assurance, acknowledges differences in terms of legal, political and cultural backgrounds throughout the EHEA and the diversity amongst institutions.

### The role of quality assurances agencies

Quality assurance agencies are usually established on the basis of national legal provision and authorized by public bodies. They have the responsibility of defining methods and criteria for external quality assurance procedures within the national framework conditions. Agencies themselves can strive for recognition at European level by running through an external peer review against the ESG.

#### Non-domain and domain specific agencies

Throughout the EHEA non-domain-specific as well as domain-specific quality assurance agencies are established. Domain-specific agencies often serve another or additional purpose in domains with highly regulated access to professions. Whereas the purpose between domain and non-domain-specific agencies might differ, the methodical approaches for procedures in general remain the same. Standards and/or criteria of domain-specific agencies might include prescribed academic standards of the specific domain, which is usually not the case in non-domain specific procedures.

### Approaches to external quality assurance

The term 'external quality assurance' is used in a generic manner for different procedures. The most common ones in the EHEA are accreditation and evaluation of programmes, followed by accreditation and evaluation of institutions and by quality audits of internal quality management systems. In practice, it has to be considered, that the terminology of the procedures can vary throughout the EHEA, as well as the purposes and subjects of the procedures. What can be generalized are the two most common purposes of external quality assurance procedures: accountability and enhancement.

- **Accountability**

Procedures with a strong focus on accountability shall demonstrate and document the quality of institutions and/or programmes to main stakeholders (e.g. public authorities, founders, society at large). These procedures are usually based on fixed standards and often results in a yes or no decision. Accreditations of programmes or institutions are examples for procedures with a stronger accountability-orientation.

- **Enhancement**

Procedures focusing on enhancement of quality usually follow a fitness for purpose ap-

<sup>18</sup> Please see subchapter 'The Standards and Guidelines for Quality Assurance in the European Higher Education Area'

proach and provide recommendations for further enhancement of the quality of institutions, programmes and/or quality management systems. Evaluations of programmes and institutions, as well as quality audits of internal quality management systems, strive for enhancement-orientation.

Although external quality assurance procedures might have a tendency towards one of those purposes, most of them integrate accountability, as well as enhancement aspects.

### **Considerations of external quality assurance for the implementation of the IQM-procedure**

Since external quality assurance sees the autonomy for internal quality management within the institutions, we provide more general recommendations (also deriving from the ESG) that the person(s) in charge of internal quality management shall consider (1) about the external context, (2) in planning and designing the IQM-procedure and (3) in reporting about the IQM-procedure for external quality assurance reasons.

#### **1. Considering the external context for the IQM-procedure**

Even though the main focus of the IQM-procedure is on internal quality management of competence-based teaching and learning, the overall framework of external quality assurance should not fall apart.

- Different procedures, different requirements: It has to be taken into account which external quality assurance procedure is obligatory for a higher education institution and what are the standards and/or criteria that should be met. An analysis should be made which internal quality management strategies and measures are already established and further required to meet the standards and/or criteria.
- Information needs for external quality assurance: It is important to clarify in advance with the agency (1) what needs to be delivered in the self-evaluation report, in appendixes, etc. and (2) in which way (e.g. obligatory templates, considering content guidelines or length restrictions).

#### **2. Considering external quality assurance requirements when planning and designing the IQM-procedure**

For those who are responsible for planning and designing the IQM-procedure, the aspects that should be considered for the purpose of external quality assurance are highlighted with regard to how the IQM-procedure shall be embedded in the institutions overall strategies and aims and considerations for the design of the procedure itself.

#### **Linking the IQM-procedure to the 'bigger picture'**

It is recommended to keep the 'big picture' in mind and to consider how the procedure is aligned with aims and strategies at institutional level and with the overall quality management system, especially for teaching and learning.

- Continuous improvement of study programmes: It is advised to design a cyclical process of further enhancement where all relevant stakeholder groups, also externals, participate. Making sure that the quality assurance of study programmes is embedded in the

overall quality management. Showing how the implemented IQM-procedure is linked to other quality management measures within the quality management for teaching and learning (e.g. course evaluation, teacher training for competence-based teaching and learning).

- 'Fitness for purpose' approach: It is recommended to consider how the IQM-procedure can be aligned with the overall objectives and strategies for competence-based teaching and learning of the HEI. Also, how it has to be designed to fit the purpose within an institution: Why using this procedure in this way? How does it help to improve the quality of competence-based teaching and learning?
- Student's participation: Plans how students can be involved in the reflection and further enhancement of study programmes on a regular basis.

### **Designing and implementing the IQM-procedure itself**

- (National) qualification frameworks: External quality assurance procedures mostly do not comprise standards for quality in terms of profile and level of competences, but refer to existing national qualification frameworks, discipline-related frameworks or national programme specifications when defining the competences of the specific study programme (Step 1 of the implementation).
- Defined responsibilities: That means considering who is responsible for the overall IQM-procedure and for the different action steps of the procedure.
- Stakeholder involvement: This implies defining the relevant stakeholders for the IQM-procedure and planning whom to involve in which stage – from the beginning of the implementation until the continuous improvement of the procedure – and how they can participate (e.g. questionnaire, sounding board and interviews) all while keeping in mind external stakeholder groups as well.
- Transparency of results: Planning how to inform relevant stakeholders about results (e.g. changes in a module, assessment methods, etc.) based on the quality management procedure.
- Continuous improvement: The evaluation and improvement of the procedure itself should be planned already from the beginning.

The proposed implementation steps of the IQM procedure (please see Part 2 of the handbook) take into account the above mentioned aspects.

### **3. Reporting about the IQM-procedure for external quality assurance**

Information about the IQM-procedure as one quality management measure in teaching and learning might be relevant in reporting for external quality assurance. For further information please see the chapter 'How to report for external quality assurance'.

#### **Recommendation for further reading:**

Curaj, A., Scott, P., Vlasceanu, L., & Wilson, L. (2014). *European Higher Education at the Crossroads. Between the Bologna Process and National Reforms*. Dordrecht, Heidelberg, New York, London: Springer.

See also chapter 'How to report for external quality assurance'.

## Research Developments

### What is this chapter about?

This chapter provides an introduction to three research areas:

- Competence research
- Evaluation research
- Implementation research

### Three research areas to be considered

In addition to the developments in the European Higher Education Area (especially the developments regarding the ESG, transparency and recognition tools, as well as external quality assurance) also research developments shall be considered. Three highly relevant research areas for developing and implementing an internal quality management procedure in competence-based higher education are (1) competence research, (2) evaluation research, and (3) implementation research.

### Competence research

Competence research often focuses on objective measurement of competences and there are many research initiatives to develop such objective instruments<sup>19</sup>, most of them relying on item-response theory<sup>20</sup>. However, the development of objective instruments needs many resources which results in many years for designing and testing objective instruments. Because such instruments are measured against high standards of objectivity, reliability, and validity, they often can cover only very specific competences. In contrast to these research developments, the developments within the European Higher Education Area show a need for instruments which can be easily adapted to the stakeholders' needs and a need for instruments which can be used to evaluate a broad area of competences and highly diverse competences, respectively. In the sub-chapter on competence research, we will learn more about the terminology in competence-research and about how research developments can help us in designing a new IQM-Procedure.

### Evaluation research

In evaluation research there is an ongoing discussion about different evaluation approaches. Many approaches are highly correlated and have one aspect in common: They aim at involving stakeholders, and they want that evaluations and the results of evaluations are of use for the stakeholders (e.g. utilisation focused evaluation, empowerment evaluation, or interactive evaluation). In the sub-chapter on evaluation research we will learn more about the terminology as well as about evaluation approaches and evaluation standards to be considered in designing an IQM-Procedure.

### Implementation research

Implementation research is quite a new research topic. It addresses the outcome of many evidence-based programmes, procedures or trainings: often they do not work in the daily life or

<sup>19</sup> Blömeke & Zlatkin-Troitschanskaia (2013)

<sup>20</sup> Wilson (2005)



they do not work as well as research evidence had shown. Implementation research revealed some causes and makes recommendations for sound implementation of programmes, procedures or trainings.

In the sub-chapter on implementation research we will learn more about those recommendations and how we can use the recommendations for implementing the IQM-Procedure.

## Competence Research

### What is this chapter about?

- Description of
  - Competences and
  - Competence-based higher education
- Explanation of
  - The relevance of competence models and
  - Existing instruments for measuring and evaluating competences

### Our understanding of competence

In competence research there are numerous definitions of competence<sup>21</sup>. In the context of internal quality management in higher education, we need a definition of competence that addresses the developments in the European Higher Education Area and therefore can be the basis for many European higher education institutions. Developments in the European Higher Education Area show that graduates should not only be very knowledgeable but also be able to think independently. Graduates should also be able to use information management skills instead of memorization or intuition, as well as perform actions which are relevant in the context of their profession. Hence, a definition of competence, which includes both, the cognitive aspect (e.g. knowing, thinking) as well as the practical aspect (e.g. performing actions) is needed. Most definitions of competence contain at least these two aspects<sup>22 23</sup>.

### The cognitive aspect

The cognitive aspect means that a graduate either has or has no scientifically based knowledge concerning a specific competence. His or her knowledge concerning a competence can range on different levels from having no knowledge at all, to being an expert who is even able to generate considerable new knowledge in a complex way. In between there can be levels like, (1) knowing and recognizing some facts that are not linked yet, (2) knowing some facts and being able to depict them, (3) being able to link these facts in a whole system, to argument about them and to draw conclusions, (4) being able to do all that while considering relevant context factors, (5) being able to generate defined new knowledge and finally, (6) to generate considerable new knowledge in a complex way.

21 See Blömeke, Gustafsson, & Shavelson (2015) for a recent review which integrates perspectives. Our understanding of competence is based on Bergsmann et al. (2015)

22 See e.g. Weiner (2001)

23 Please consider that our understanding of competence differs from the definition of competence in the European Qualification Framework (EQF). In the EQF competence includes the three aspects knowledge, skill, and motivation. The purpose of the EQF is to function as a translation instrument and make national education systems comparable throughout Europe.



### **The practical aspect**

The practical aspect can range on such levels in a similar way. It is more about performing actions, like (1) being able to perform only single simple actions under guidance (2) then being able to perform more actions while following a fixed workflow, (3) to combine different actions and deal with typical obstacles, (4) to act in a flexible way that fits the specific conditions, (5) being able to generate simple new procedures and techniques and finally, (6) being able to generate innovative complex new procedures and techniques.

### **Abstraction in formulating competences**

Competences can be formulated on different degrees of abstraction. A very high degree of abstraction implicates that the competence is not specific to the domain. In this case, students and teachers might have different interpretations of what the competence means. An example for that is the very abstract formulation 'communication competence'. In contrast, a very low degree of abstraction, i.e. a very specific formulation of competence, implicates that it covers only a small area of a domain or profession and hence, many competences need to be formulated to cover the whole field. To stay with the example of communication competence, applied to the field of psychology, a very low degree of abstraction might be the formulation 'writing a psychological assessment report'. Course level student learning outcomes are usually formulated on a very low degree of abstraction.

### **Considering the context**

In the context of internal quality management in higher education we need to consider the quality management process when talking about the degree of abstraction. Firstly, stakeholders shall be provided with competences that are relevant for them, consequently, specific to their domain. Secondly, we aim at a realistic and feasible IQM-Procedure. For this reason, stakeholders should be provided with a parsimonious number of competences that they can deal with in the information collection phase, as well as in the interpretation phase of the IQM-Procedure.

### **Medium degree of abstraction and considering the context**

Based on the above mentioned considerations, we suggest formulating competences on a medium degree of abstraction, (similar to programme level student learning outcomes) which means that competences are formulated domain-specific but more abstract than course level student learning outcomes<sup>24</sup>. Keeping this example of communication competence, a medium degree of abstraction would be for example 'communication of diagnoses and therapy to patients'. This formulation is domain specific, because it refers to the field of health professions (e.g. medicine or psychology). It is also parsimonious because it covers several communication strategies not only single specific communication strategies.

### **Our competence-based higher education approach**

This approach of competence-based higher education is based on the model of competence-based higher education<sup>25</sup> depicted in Figure 3. The model illustrates competence-based higher education within a specific study programme. Please see Figure 3 for more details on the elements of competence-based higher education. Figure 3 depicts many steps between the intended competences (i.e. the competence model) and the perceived competences of graduates. In locating problems of competence-based higher education, each element of the teaching and learning process has to be considered as a possible cause.

<sup>24</sup> Programme level student learning outcomes can be used as a starting point for defining competences in a competence model. See chapter 'Step 1' for more information.

<sup>25</sup> Bergsmann et al. (2015)

## Competence-Based Higher Education Model

The competence-based higher education model shows the process from intended student competences, i.e. competences that students should acquire by a study programme to the perceived student competences, i.e. students report they actually do acquire or teachers report their students actually do acquire by a study programme. The model illustrates that each element of the teaching and learning process runs the risk of disturbing the process. Therefore, fostering student competences by a study programme is a complex process.

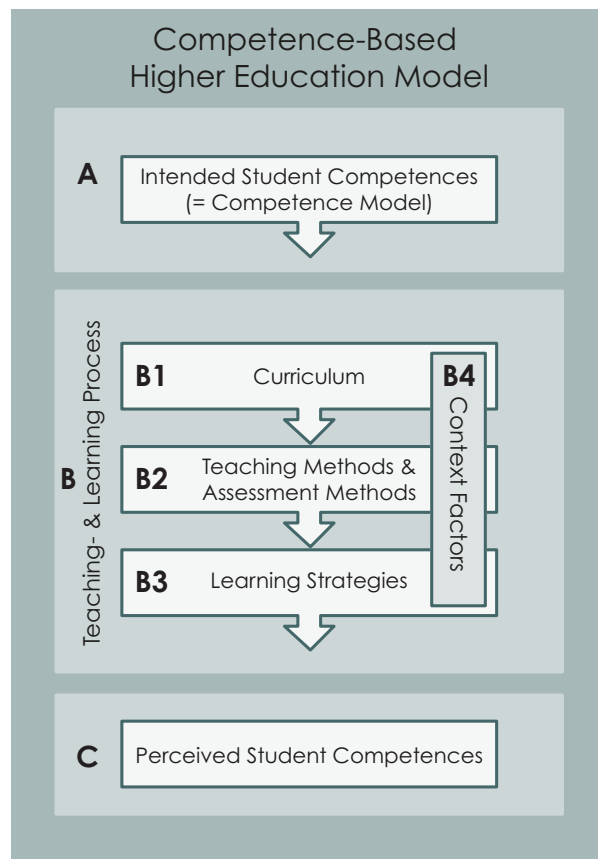


Figure 3: The Model of Competence-Based Higher Education

### A Intended Student Competences

The first task in competence-based higher education is to define, which competences and competence levels students should acquire by a study programme. This task is called 'establishing a competence model'.

### B Teaching and Learning Process

In competence-based higher education is not only the teaching process but also the students' learning process relevant. The teaching and learning process consists of four elements: curriculum, teaching methods and assessment methods, learning strategies, and context factors.

**B1 Curriculum**

The curriculum needs to address all competences which were formulated in the competence model. Moreover, the curriculum shall also ensure, that the competence levels are adequately addressed.

In competence-based teaching all study courses and lectures of a curriculum are supposed to mesh together in successively building up students' competences. Hence, it is not up to single courses to foster single competences. As a consequence, teachers have to work more as teams in coordinating the enhancement of student competences.

**B2 Teaching Methods and Assessment Methods**

In competence-based higher education the teaching methods adequately foster student competences. Also the assessment methods should be designed to encourage students to use competence-based learning strategies.

**B3 Learning Strategies**

In competence-based teaching students are encouraged to actively design their learning process. This means that they are encouraged to set individual learning goals, to actively plan, monitor, regulate and reflect their learning process. They also know different learning strategies and can choose appropriate strategies and change the strategy if needed. Students are also able to maintain motivation and regulated emotion in difficult phases.

**B4 Context Factors**

Context factors in competence-based teaching are e.g. financial resources, number of students, staff, rooms, equipment, etc. Competence-based higher education is influenced by the context factors. Fostering the practical aspect of competences often is accompanied by the need for small classes or more equipment.

**C Perceived Student Competences**

In competence-based higher education, the teaching and learning process results in the perceived student competences that the students achieve. The goals to be achieved are the above defined students' competences and competence levels. By defining student competence levels, a target-achievement comparison can be done.

More information on competence-based teaching methods and assessment methods can be found here: Zlatkin-Troitschanskaia, Shavelson, & Kuhn (2015)

## Conclusion

To sum up, there are three main messages so far: (1) in our approach, the term competence includes both, the cognitive and the practical aspect; (2) competences should be formulated on a medium degree of abstraction and they should be specific to the domain; (3) competence-based higher education starts with defining the intended competences that students should acquire by a study programme and it is followed by the teaching and learning process which covers several elements. This process results in the perceived competences achieved, i.e. competences students report that they actually do acquire or teachers report their students actually do acquire by a study programme.

In the next section we learn more about different types of competence models and evaluation instruments. We will find out why this information is relevant for internal quality management in competence-based higher education.

## Competence models and measurement methods and their relevance for internal quality management in higher education

A quality management procedure usually starts with defining the goal of a programme and it then uses appropriate methods to evaluate whether the goal was reached. In the context of competence-based higher education, defining the goal means defining the competences, which students are to acquire by a study programme. In competence research this is called 'specifying a theoretical competence model'. Competence research provides some information on different types of competence models. In the following, we introduce these types of models and elaborate upon them. All three types are important; we outline how they can be helpful for us. Furthermore, we will have a look at the already existing instruments for measuring and evaluating competences in higher education and try to find out the advantages and disadvantages for the purpose of internal quality management in higher education.

### The different types of competence models

Not only is the definition of competence manifold in competence research but also the specification of theoretical competence models. There are three different kinds of models<sup>26</sup>, namely competence structure models, competence level models and competence development models.

#### Competence structure models

Competence structure models define how a competence is structured in sub-competences, meaning that they define components that are part of a competence. A well-known example is the one of the German standing committee of the ministers of education<sup>27</sup> which describes the structure of the so-called action competence that builds the framework for vocational education curricula. In this model, action competence is structured in the three sub-competences professional competence, personal competence and social competence.

#### Competence level models

Competence level models define levels of competence, often ranging somehow from novice to expert level. A person reaches a specific level if he or she is able to perform specific actions linked to that level. A famous example for competence levels is the SOLO taxonomy<sup>28</sup> provided

<sup>26</sup> Hartig & Klieme (2006); Klieme et al. (2007)

<sup>27</sup> KMK (2011)

<sup>28</sup> Biggs & Collis (1982)

by John Biggs which helps classifying learning outcomes by their complexity. In this taxonomy, Biggs defines five levels that relate to the quality of students' learning outcomes. On the first one the student is incompetent, on the second one – called uni-structural – he or she only knows a few aspects, on the third – multi-structural – he or she knows more aspects, but they remain unrelated, on the fourth – relational – the aspects can be integrated and on the final fifth – extended abstract – the student is able to generalize to new domains. Competence levels can be formulated more generally like the ones in Biggs' model or more specifically relating to specific intended learning outcomes of a programme or course. Usually in rubrics<sup>29</sup>, which can be used to score competence levels as a self-assessment, competence levels are formulated in a specific manner.

### Competence development models

Competence development models act on the assumption that we can develop our competences. We can, for example, change and ameliorate our competences by training and thus reach higher levels. For our models in higher education, the developmental aspect implies that we should define different target levels students should reach at different points in the higher education career. That could mean that we expect them to reach a medium competence level when they get their bachelor's degree and a higher one when they get their master's degree.

### Elaborating a competence model

As a starting point for the IQM-Procedure we suggest to define the intended student competences by elaborating a so called competence model. The handbook does not provide a competence model which is ready to use. Elaborating is the aim of those responsible for a study programme, they know which competences exactly their students shall acquire. However, competence research (i.e. the three types of competence models) gives us some advice on how to build such a model. First, we shall group the competences to competence areas to address the idea of a structure. Second, for each competence we need to define the competence levels graduates shall have to address the idea of the levels. Third, the levels shall not only be defined for graduates but also for students at a crucial point during the study. If a cohort of students does not have the intended level in a specific competence we can help them to acquire those levels until they are graduates, hence, we also address the idea of development.

Find more information on how to elaborate a competence model for a specific study programme of your institution in Step 1 of the Implementation chapter.

To sum up, the information on the different types of model gives us some advice on how to define the goal of a study programme. In the following we will have a look at the measurement and evaluation instruments and find out about the pros and cons of those instruments.

### *Measuring and evaluating competences in higher education*

Competence research provides instruments for collecting different types of data<sup>30</sup>: objective data, non-standardized or observational data, and self-report data.

#### Objective data

Instruments which collect objective data, for example, often are standardized competence tests like they are used in international monitoring studies (e.g. PISA<sup>31</sup>). However, there are no stand-

29 See e.g. Panadero & Jonsson (2013); Reddy & Andrade (2010); Svinicky & Mc Keachie (2012)

30 For an overview of assessment methods see Scheibe, Trittel, Klug, & Schmitz (2014)

31 OECD (2014)

ardized tests for every competence we would like to assess. Sometimes, it is more useful to have information about what is really done in practice rather than run tests which mainly evaluate knowledge<sup>32</sup>. The practical aspect of competences is not very prominent in these kinds of tests.

### **Non-standardized or observational data**

With a second type of measurement, we can collect non-standardized or observational data. We could, for example, observe teachers' in direct interaction with learners or even record lessons on video. In this way deeper insights, especially in the practical aspect of competences can be achieved. However, this approach is very time and resource consuming in measuring, as well as in interpreting the collected information. Additionally, the objectivity during measurement and interpretation is often at stake here.

### **Self-assessment data**

A third way of measuring is to gather self-assessment data, also referred to as self-report data, e.g. self-report questionnaires for students or teachers like the 'Berlin Evaluation Instrument for self-evaluated student competences'<sup>33</sup>, which measure some multidisciplinary competences that should be achieved in academic courses. Self-report questionnaires can be administered in a paper-and-pencil form or via computer-based assessment<sup>34</sup>. Moreover, self-reports also carry some advantages and disadvantages. Via self-report we can get insights into the way students and teachers see the competence levels and development. We could even compare those viewpoints and see if they differ. However, self-report data is prone to faking. Students could answer in a socially desired way (e.g. faking good) or they could also report that their competences are lower than they actually are (e.g. faking bad), if they, for example, want to express some displeasure with a person at university or a specific lecturer. With that being said, in our opinion, self-report seems adequate to get an idea about students' and teachers' perspective. Additionally, it is possible to gather a lot of information, on the cognitive, as well as on the practical aspect, with quite little effort, meaning self-report measures are an economic option for internal quality management in higher education. Nevertheless, we suggest keeping possible faking in mind and even work against those biases by addressing them in the implementation process. Fear of testing could be reduced by telling students that this is an instrument for them to give feedback in order to keep the good things and change the ones that are not working well at that moment. In a nutshell, to get reliable results it matters how we instruct and administer self-reports in competence-based higher education. However, it should be taken into account that these self-assessed data relies on perceived values of students or teachers.

### ***Implications for internal quality management***

Based on the information provided in this chapter, the IQM-Procedure

- Should be based on the model of competence-based higher education
- Should check whether the formulation of the competence model follows five quality criteria derived from competence research<sup>35</sup>:
  - Aspects: formulation of competence addresses both cognitive and practical aspects
  - Abstraction: competences are formulated on a medium degree of abstraction and are domain-specific<sup>36</sup>

32 Walter & Schiener (2016)

33 Braun, Gusy, Leidner, & Hannover (2008)

34 Greiff, Martin, & Spinath (2014)

35 Bergsmann et al. (2015)

36 Discussion on using a low level of abstraction, i.e. on using more specific formulation of competences please see chapter 'Step 1'.

- Structure: competences are structured into competence areas
- Levels: competence levels are defined for both, cognitive and the practical aspect
- Development: competence levels are defined for at least two points in time to address the development dimension
- Should provide a new self-report instrument for screening the levels of student competences as well as the teaching and learning levels

So far various developments in competence research and which information is relevant for our IQM-Procedure has been discussed. The next chapter will inform about developments in evaluation research.

### Recommendations for further reading

Blömeke, S., Gustafsson, J. E., & Shavelson, R. J. (2015). Beyond Dichotomies. *Zeitschrift für Psychologie/Journal of Psychology*, 223(1), 3-13. doi:10.1027/2151-2604/a000194

<http://econtent.hogrefe.com/doi/abs/10.1027/2151-2604/a000194>

Koepfen, K., Hartig, J., Klieme, E., & Leutner, D. (2008). Current issues in competence modeling and assessment. *Zeitschrift für Psychologie/Journal of Psychology*, 216(2), 61-73. doi:10.1027/0044-3409.216.2.61

<http://econtent.hogrefe.com/doi/abs/10.1027/0044-3409.216.2.61>

Scheibe, A., Trittel, M., Klug, J., & Schmitz, B. (2014). Strategien und Methoden der Erkenntnisgewinnung (Forschungsmethoden)[Strategies and methods for gaining knowledge (research methods)]. In T. Seidel, & A. Krapp (Eds.), *Lehrbuch Pädagogische Psychologie [Textbook educational psychology]* (pp. 83–106). Weinheim: Beltz.

[https://www.beltz.de/produkt\\_produktdetails/3903-paedagogische\\_psychologie.html](https://www.beltz.de/produkt_produktdetails/3903-paedagogische_psychologie.html)

## Evaluation Research

### What is this chapter about?

- Description of our understanding of evaluation
- Elaboration on
  - The relevance of the participatory evaluation approach and
  - Evaluation standards which shall be addressed

### Our understanding of evaluation

The term 'evaluation' is used in manifold contexts and has different meanings. In everyday language, the term evaluation is often used to simply express that something has been tested, assessed or judged<sup>37</sup>. In this handbook we use a science-based definition of evaluation<sup>38</sup>: Evaluation systematically investigates characteristics and merits of projects, processes or programmes. Evaluation can be done in all phases and its purpose is to provide information on the effectiveness and efficiency.

<sup>37</sup> Kromrey (2001); DeGEval (2008)

<sup>38</sup> DeGEval (2008); AEA (2004)



### **Evaluation methods**

Evaluations are conducted by applying many of the same methods that social researchers rely on to gather reliable and valid evidence<sup>39</sup>. These are, for example, formulating questions and aims, defining indicators for assessment, collecting and analyzing data, assessing the effectiveness and finally reporting the results. When we want to use collected information to answer questions about the effectiveness of a programme, different assessment measures, like the ones described for measuring competences (e.g. standardized tests, observations, self-reports) can be used.

In the next section, we will learn about different approaches to evaluation and evaluation standards and we will see how they are relevant for internal quality management in competence-based higher education.

### ***Which evaluation approach is relevant for internal quality management in higher education?***

Since we can learn from evaluation research in order to make IQM-Procedure accepted and beneficial, we will now introduce approaches to evaluation that could be used for the IQM-Procedure.

#### **Participatory evaluation approach**

A participatory evaluation approach<sup>40</sup> that includes relevant stakeholders should be applied to the evaluation of competence-based teaching in higher education to address the stakeholders' information need. Internal and external stakeholders can be differentiated. Internal stakeholders are, for example, teachers, students, curriculum commission, senate, or the vice-rectorate for study affairs. External stakeholders are for example representatives of civil society organisations or future employers.

#### **Utilisation-focused evaluation**

In utilisation-focused evaluation as one of the participatory approaches, teachers and students' commissions, i.e. all the relevant stakeholders work together with the evaluator in order to achieve the utilisation they define together in the beginning of the process. They define and prioritize together what the relevant questions are, design the evaluation and decide for methods and measurements together. After having collected data, they also interpret the results together and disseminate in their institution. The process should also include a meta-evaluation of the joint evaluation process.

#### **Impact of participation on organizational change process**

Participative evaluation methods, like utilisation-focused evaluation, also have an impact on the evaluation subject. The evaluation subject in our case is competence-based higher education. By involving the stakeholders, the relevance of competence-based teaching and learning rises within the higher education institution. Hence, using participatory evaluation methods within this project may also foster the organizational change process towards student competences and competence-based higher education.

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<sup>39</sup> Spiel, Schober, & Bergsmann (2015)

<sup>40</sup> Cousins & Chouinard (2012); Hansen, Alkin, & Wallace (2013)



### **Which evaluation standards shall be considered?**

When we plan an evaluation, we should think about ways to keep the quality and fairness of the evaluation as high as possible. Addressing evaluation standards helps us in doing so.

Evaluation standards are principles that are mutually agreed upon by people engaged in the professional practice of evaluation, that, if met, will enhance the quality and fairness of an evaluation<sup>41</sup>. In the Programme Evaluation Standards proposed by the Joint Committee on Standards for Educational Evaluation (JCSEE), there are five groups of standards: utility, feasibility, propriety, accuracy and evaluation accountability standards.

#### **The JCSEE-Standards**

The *utility standards* are meant to increase the extent which the stakeholders find the evaluation process and outcomes useful and meeting what they need. They include, for example, the evaluator being credible and timely, and paying attention to the stakeholders and the information being meaningful.

With the *feasibility standards*, the evaluation's effectiveness and efficiency should be ensured. They include, for example, an effective project management, a diplomatic way of dealing with differing interests and an efficient use of resources within the evaluation.

The *propriety standards* promote the protection of rights of everyone included in and affected by the evaluation. They include, for example, acting ethical, relying to formal agreements, being transparent in findings, limitations, fiscal concerns and addressing conflicts in an open and honest way.

The *accuracy standards* help in getting accurate information to interpret by, for example, relying on quality criteria like reliability and validity, collecting information systematically, using adequate designs and analyses, and communicating in a way to avoid misconceptions.

The *evaluation accountability standards* guide us in taking a meta-evaluative perspective on our evaluation. We should document our evaluation properly and assess it ourselves internally and have an additional external evaluation of our evaluation processes in order to ensure and improve the evaluation quality.

### **Implications of Evaluation Research for Internal Quality Management**

Based on the evaluation research information given in this sub-chapter, the IQM-Procedure should:

- Be based on a science-based understanding of evaluation
- Follow a participative evaluation approach
- Consider the evaluation standards

#### **Recommendations for further reading**

JCSEE – Joint Committee on Standards for Educational Evaluation (2011). *The program evaluation standards* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.

<http://www.jcsee.org/program-evaluation-standards>

Spiel, C., Schober, B., & Bergsmann, E. (2015). Program Evaluation. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2<sup>nd</sup> ed., vol. 19, pp. 117-122).

Oxford: Elsevier. <http://www.sciencedirect.com/science/referenceworks/9780080970875>

## Implementation Research

### What is this chapter about?

- Introduction of
  - Our understanding of implementation and
  - The field of implementation research
- Implementation activities fostering sound implementation of the IQM-Procedure

### Our understanding of implementation

Implementation can be defined as 'a specified set of activities designed to put into practice an activity or programme of known dimensions'<sup>42</sup>. Accordingly, implementation research provides models and frameworks for the systematic introduction of innovations and programmes to organizations. Implementation research is helpful for a professional implementation of the IQM-Procedure to a higher education institution. Implementation research has been developed over the past fifty years mainly in Anglo-American countries and has advanced with a multitude of experiences in guiding the introduction of programmes in health, education and many other contexts. In contrast, to a passive and informal diffusion of programmes to organizations, which has not been sufficient for making them reach their intended goals<sup>43</sup>, implementation research shows how implementation activities can contribute systematically to the effectiveness of innovations and programmes, e.g. in educational institutions. Whereas in the U.S. centres for guiding implementation activities, such as the National Implementation Research Network at the University of North Carolina, support the implementation of nationwide initiatives, similar centres are scarce in other countries. In Europe, the awareness for the importance of systematic implementation highly varies between countries and public sectors. Hence, considering systematic frameworks from implementation research, when introducing new concepts to organizations not only contributes to their effective application, also implies following a state-of-the-art approach that is new to most initiatives in Europe.

### Relevant implementation activities for internal quality management in higher education

There is a considerable number of implementation frameworks that describe how to address factors that are important to implementation processes in organizations<sup>44</sup>. The 'active implementation frameworks' constitute a model of systematic implementation that has guided programme implementation in a great number of organizational settings, including educational institutions. Within the scope of these frameworks, the so-called 'implementation drivers' are described<sup>45</sup> (i.e. activities that support an effective reception of an innovation by an organization). These activities are grouped into 'leadership drivers', 'competency drivers' and 'organization drivers'.

#### Leadership drivers

The leadership drivers include strategies for decision-makers to deal with technical and adaptive issues, which are both likely to arise during implementation processes. While technical problems comprise clear solutions (e.g. how to announce the new approach to the whole or-

42 Fixsen, Naoom, Blase, Friedman, & Wallace (2005, p. 5)

43 Fixsen et al. (2005)

44 For an overview see, e.g. Tabak, Khoong, Chambers, & Brownson (2012)

45 Blase, Van Dyke, Fixsen, & Wallace (2013)

ganization), adaptive problems often require changes in the organizational culture. Decision-makers have to be supported in dealing with both kinds of issues, e.g. in individual consultation sessions with programme coordinators. This support can be beneficial for the decision-makers' acceptance of an innovation, which is an important prerequisite for its acceptance by the whole organization<sup>46</sup>.

### **Competency drivers**

The competency<sup>47</sup> drivers include activities that improve the quality of an innovation by effectively selecting, training and coaching the staff involved in a programme. In the context of internal quality management in higher education institutions, this can include a selection of representatives for stakeholder groups that have certain roles and interests in the quality management procedure. These representatives have to be trained in background knowledge of the IQM-Procedure and in the necessary skills for implementing the procedure. Additionally, coaching should be offered to the representatives whenever they need support in implementing and applying the IQM-Procedure.

### **Organization drivers**

By considering the organization drivers, an organization, such as a higher education institution, conducts the necessary system changes and works out strategies for handling the additional workload that goes along with implementing an innovation. For a successful implementation, changes in the system are necessary, for example, funding is needed and existing funding practices have to be changed sometimes.

In addition, administration has to be facilitated or resources for administrative activities have to be aligned with the new programme, e.g. by changing the focus of existing working groups in line with the goals of the innovation. Also, continuous feedback from decision support data systems is needed to guide decisions on how to proceed with an innovation in a way it still leads to desired outcomes.

### **Implementation drivers fostering the IQM-Procedure**

By considering the implementation drivers in introducing the IQM-Procedure to institutions of higher education, three main challenges can be handled systematically: (1) gaining acceptance of the new procedure by stakeholders, (2) establishing data-based decision-making, and (3) dedicating resources to the new procedure<sup>48</sup>.

#### **1. Acceptance**

In order to gain the acceptance of the IQM-Procedure by the involved stakeholders, it is crucial to first gain the decision-makers' trust in the new procedure. As a next step, the leadership drivers can guide leadership strategies that are involved in transferring the decision-makers' acceptance of the new approach to other stakeholders. These can include workshops for stakeholder group representatives or an information campaign at the higher education institution. Evaluators or programme coordinators can support these actions in preliminary discussions with decision-makers, as well as by offering individual consultation sessions throughout the implementation process.

<sup>46</sup> Elias, Zins, Graczyk, & Weissberg (2003)

<sup>47</sup> The term competency within the active implementation frameworks addresses the staff and not the students.

<sup>48</sup> For a detailed description see Bergsmann et al. (2015)

## 2. Data-based decision making

As the results of surveys that are conducted in the course of the IQM-Procedure should be used for a continuous improvement of study programmes, it is important to establish a culture of data-based decision-making in the institution. This can be supported by activities described by the competency drivers. Representatives of all involved stakeholder groups should be selected and trained to interpret and communicate the results. Also, these stakeholder representatives should be coached throughout the implementation process in making data-based decisions in everyday contexts.

## 3. Resources

Dedicating resources to the new IQM-Procedure by implementing institutions are a crucial prerequisite for its operability. The organization drivers describe activities that should be considered when complex innovations need a release of resources. An important step is to facilitate administration, which can be achieved by changing the focus of quality assurance staff from context to competences. Other activities involve system interventions, such as, informing all stakeholder groups by publicizing the IQM-Procedure and the establishment of decision support data systems, which can include feedback data from questionnaires surveying student competences.

### ***Implications for internal quality management***

Based on the implementation research information given in this sub-chapter, the IQM-Procedure should be systematically implemented by addressing the implementation drivers:

- Leadership drivers support the stakeholders' acceptance of the new procedure
- Competency drivers support establishing data-based decision-making
- Organization drivers support dedicating resources to the new procedure

The specific guidelines for the implementation of the IQM-Procedure at institutions of higher education will be presented in the following chapters.

### **Recommendations for further reading**

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature* (Louis de la Parte Florida Mental Health Institute Publication No. 231). Tampa: University of South Florida, Louis de la Parte Florida Mental Health Institute, National Implementation Research Network.  
<http://nirn.fpg.unc.edu/resources/implementation-research-synthesis-literature>







# IMPLEMENTATION

How the IQM-Procedure works and how to implement it at your higher education institution

Overview

Preparation

Step 1: Define Competences

Step 2: Screen Competences

Step 3: Enhance Competences

Reflection



# IMPLEMENTATION

## How the IQM-Procedure works and how to implement it at your higher education institution

In this chapter we will introduce an Internal Quality Management Procedure for the improvement of the teaching and learning process of a study programme specifically in relation to the students' competences. In the following we will use the abbreviation IQM-Procedure instead of 'Internal Quality Management Procedure for competence-based higher education'. The chapter also provides information on how to implement the IQM-Procedure at a higher education institution. The IQM-Procedure could be integrated into an existing IQM system.

As outlined in Part 1 of the handbook, the IQM-Procedure is the first procedure that explicitly integrates three major perspectives on internal quality management: Firstly, the procedure addresses influences from the European Higher Education Area. Secondly, implications from different research areas are considered. Thirdly, the procedure is designed to actively integrate the stakeholders need for information. For more information on these perspectives please see Figure 2 as well as the chapters on developments to be considered in Part 1 of the handbook.

The IQM-Procedure shall be applicable for any higher education institution within the European Higher Education Area. Hence, the IQM-Procedure does not consider national laws, profession-specific recommendations or specific quality management culture of a higher education institution. It is, however, necessary that you consider these factors in implementing the IQM-Procedure at your higher education institution. Furthermore, we recommend personally thinking about the already existing quality management framework of your higher education institution and how you can integrate the IQM-Procedure into the existing framework.

In the following we present an overview of the IQM-Procedure as well as the implementation process, supplemented by a timeline. Afterwards, we provide very concrete information on how to practically implement the IQM-Procedure. It is recommended to start with a pilot project before implementing a new procedure to the whole organization. Hence, we will focus on implementing the IQM-Procedure to one specific study programme of an institution of higher education for starters. In the chapter future perspectives you can find information on how to expand the IQM-Procedure to other study programmes. But first of all, let us start with the overview of the IQM-Procedure.

## OVERVIEW

### Model of Competence-Based Higher Education

Broadly spoken, the aim of the IQM-Procedure is to evaluate and enhance competence-based higher education. Competence-based higher education focuses on students' competences as an outcome of a study programme's teaching and learning process. As depicted in the box 'Competence-Based Higher Education Model' of Figure 4, the process starts with the definition of intended competences which are competences that students shall acquire by a study programme<sup>49</sup>. The model continues with the learning- and teaching process including several elements (curriculum, teaching methods and assessment methods, learning strategies, and context factors) and results in perceived student competences that the students achieve. 'Perceived competences' are on the one hand, seen as the students' self-assessment of the achieved competences and on the other hand, as the teachers' perception of the students' competences achieved. A study programme reaches its goal, if the perceived student competences are on the same level as the intended student competences defined in the beginning<sup>50</sup>.

### The IQM-Procedure

The IQM-Procedure itself consists of three steps. In Step 1 you find out, whether you have well-defined intended student competences<sup>51</sup> for the specific study programme (define competences). In Step 2 you collect screening information to find out, whether there are gaps between intended student competences and perceived student competences as well as gaps between intended student competences and the teaching and learning process (screen competences). In Step 3 you find out reasons for gaps and develop measures for quality enhancement and quality assurance (enhance competences). The three steps are the basic structure. There are different ways in designing the three steps. In the subsequent chapters on Step 1, Step 2, and Step 3 we will provide detailed information on the steps as well as one specific method for each step. However, because higher education institutions are highly heterogeneous we will also provide core components to be considered in designing individual methods. This shall ensure flexibility in implementing the IQM-Procedure in order to consider the specific culture of higher education institutions as well as the stakeholders' needs.

### The Implementation Process

The implementation process of the IQM-Procedure starts with a preparation phase. The preparation phase is about creating the appropriate conditions for subsequently implementing the three steps of the IQM-Procedure (define, screen, and enhance competences). The implementation process ends with a reflection phase. The IQM-Procedure is reflected in order to improve the subsequent IQM-cycle. See Figure 4 for an overview of the implementation process. Please note that according to evaluation research<sup>52</sup> as well as according to recommendations from an external quality assurance perspective<sup>53</sup> we will follow a participative approach in the implementation process where stakeholders are actively involved and informed.

49 Intended competences are the term used in this handbook for indicating what students shall learn by attending a specific study programme. In other contexts other terms might be used e.g. intended programme learning outcomes, Day 1 skills, or qualification. See also the Introduction of this handbook, paragraph 'Competence-based higher education defined.'

50 For more information on the Model of Competence-Based Higher Education please see the chapter 'Competence Research'.

51 See section 'Competence Research' for further information.

52 See section 'Evaluation Research' for further information.

53 See section 'External Quality Assurance' for further information.

# OVERVIEW

## Implementation of Internal Quality Management

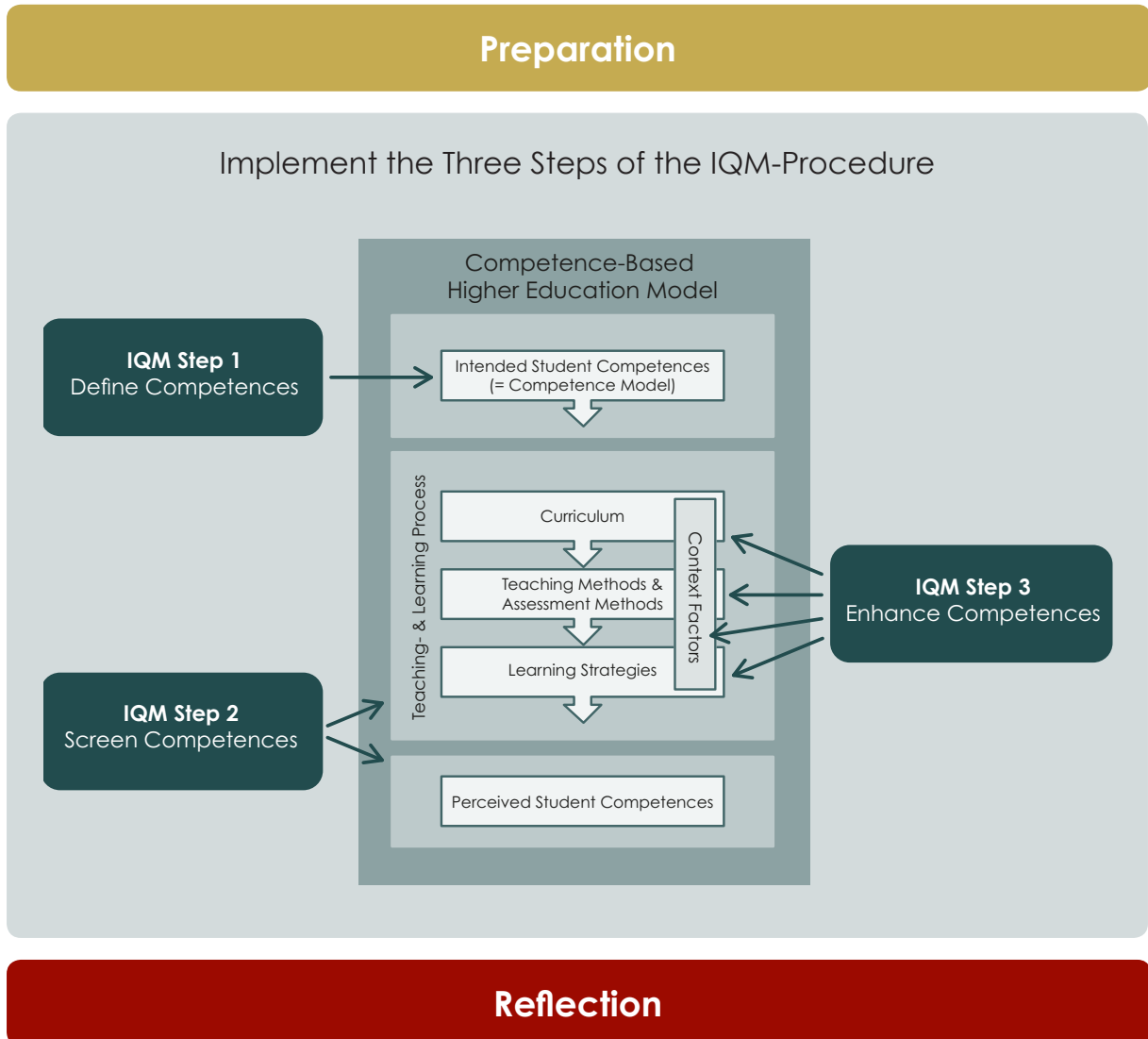


Figure 4: Implementation of the IQM-Procedure

**Preparation phase** is about creating the appropriate framework for implementing the three steps of the IQM-Procedure.

**At the end of the preparation phase**

- Decision-makers know and advocate the implementation of the IQM-Procedure.
- A so called Internal Quality Management team (IQM team) was established, i.e. representatives of all relevant stakeholder groups are selected and trained.
- Resources are dedicated to the IQM-Procedure.

**Step 1** is about elaborating the competence model. Often institutions of higher education have a list of competences students should have acquired at the end of a study. These competences are the starting point for elaborating the competence model.

**At the end of Step 1**

- A competence model was elaborated and follows five quality criteria derived from competence research (see Fig. 5).
- Stakeholders are informed about the elaborated competence model.

**Step 2** is about collecting screening information.

**At the end of Step 2**

- Stakeholders have been informed about the general IQM-Procedure and in particular about the collecting of screening information before the collecting of the information has started (information campaign).
- Screening information has been collected. It shows gaps between intended and perceived student competences from students' and teachers' perspectives. Furthermore it provides insight to the quality of the teaching process from the students' perspective.
- Screening report is finished and results were communicated in a stakeholder-specific manner.

**Step 3** is about interpreting the information, finding out reasons for strengths and weaknesses by looking at the specific elements of the teaching and learning process and about developing measures.

**At the end of Step 3**

- Possible measures for quality enhancement and quality assurance based on the report are developed and collected.
- Selected measures for quality enhancement and quality assurance were initiated.
- Stakeholders were informed about the initiated measures.

**Reflection phase** is about improving the IQM-Procedure based on feedback from the first cycle.

**At the end of the reflection phase**

- Success factors of the implementation process and
- How to further improve the IQM- Procedure at their higher education institution.

## Suggested Timeline

Implementing a new procedure to an institution usually takes more time than the subsequent routine operation. However, both timelines, for the implementation of the IQM-Procedure and for the subsequent routine IQM-Procedure highly depend on the institution's context.

To give you a clue which you can use as a kind of reference, we suggest estimating about two years for the implementation process and about one year for the subsequent routine IQM-Procedure. Thereby we consider that persons in charge of internal quality management have different tasks in their daily business and hence further duties besides the IQM-Procedure. Furthermore, we consider that in a participative approach many stakeholder groups need to be involved which also results in longer time spans. Please see Annex 2 for more details.

## Introduction to subsequent chapters

In the subsequent subchapters we provide detailed information on how to implement the IQM-Procedure to institutions of higher education. We start with a chapter on the preparation phase, then we describe Step 1 to 3 in detail, and finally we give some recommendations for the reflection phase. Each of these chapters follow the same structure.



First, we tell you, the internal quality manager, why this part of the implementation process is needed (aim), then we provide



details and



methods accompanied by



useful tools of the European Toolkit for Internal Quality Management in Competence-Based Higher Education and at the end



we suggest when to do what (detailed timeline).



Special tips and tricks are indicated by a bulb.

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# Preparation

## At the end of the preparation phase

- ➔ **Decision-makers** know and advocate the implementation of the IQM-Procedure
- ➔ A so called Internal Quality Management team (**IQM team**<sup>54</sup>) was established, i.e. representatives of all relevant stakeholder groups are selected and trained.
- ➔ **Resources** are dedicated to the IQM-Procedure



Implementing a new procedure to an institution is a complex endeavour. Decision-makers need to advocate the new procedure, different stakeholder groups have to be addressed and the new procedure needs to be integrated into and supported by the already existing organizational structure. Implementation research provides some suggestions on how to manage this complex endeavour: The active implementation frameworks<sup>55</sup> highly recommend (1) actively involving decision-makers, (2) establishing a team and (3) dedicating resources to a new procedure. Hence, these are the three goals of our preparation phase. In the following we provide some details and methods on how to reach the goals, accompanied by useful tools of the European Toolkit for Internal Quality Management in Competence-Based Higher Education.

## Involve decision-makers

The first aim of the preparation phase is the decision-makers knowing and advocating the IQM-Procedure. This aim includes that decision-makers, as for example the rector's office, senate, or curriculum commission, know the motivation for implementing the new IQM-Procedure to a specific study programme of the higher education institution. The motivation might differ from institution to institution. From our perspective five main arguments for implementing the new IQM-Procedure are:



- In line with the developments in the European Higher Education Area there was a shift to student centred learning and competence-based higher education was implemented to the higher education institution. A new quality management procedure is needed which focuses on student competences. The IQM-Procedure for Competence-Based Higher Education (in short: IQM-Procedure) is such a new procedure.
- The IQM-Procedure considers European Higher Education Area developments, developments in competence research, evaluation research and implementation research, as well as the stakeholders' needs.
- The procedure at hand was developed and tested by experts in the field.
- The procedure at hand is flexible and it can be adapted to and integrated in the already existing structure of the higher education institution.
- The European Toolkit for Competence-Based Higher Education provides complementary documents to facilitate the implementation of the IQM-Procedure.

<sup>54</sup> If there already exists an IQM team in your institution use another term to avoid confusion.

<sup>55</sup> See chapter 'Implementation Research' for further information

Decision-makers shall not only advocate the IQM-Procedure but also know the main steps of the IQM-Procedure and the resources needed because the decision-makers are responsible for providing resources to the IQM-Procedure. The resources themselves are discussed in the course of Aim 3.

We also discuss the 'fitness for purpose' approach<sup>56</sup> together with the decision-maker while considering how the IQM-Procedure can be aligned with the overall objectives and strategies for competence-based teaching and learning of the HEI. Also included, we think about how it has to be designed to fit the purpose within your institution: 'Why are you using this procedure in this way? How does it help you to improve the quality of competence-based teaching and learning?'



The method to reach Aim 1, which is decision-makers knowing and advocating the IQM-Procedure, depends on the culture of the higher education institution. We recommend **personal communication** between you, the person in charge of internal quality management, and the decision-makers. The first step would be personal communication to the decision-maker who is responsible for quality management in competence-based higher education, e.g. the vice-rector for study affairs. If the decision-maker in charge advocates the IQM-Procedure the second step would be to involve other relevant decision-makers. You can make a plan, together with the responsible decision-maker, on how to inform and involve the other decision-makers, which are e.g. the senate or the curriculum commission. At the end, all relevant-decision-makers shall know and advocate the IQM-Procedure. However, there shall be a single person who is the decision-maker responsible for the IQM-Procedure and hence your contact person in case of important decisions.

#### The European Toolkit provides templates:

Tool 2: Information material for decision-makers (template).



#### Select and train an IQM team

The second aim of the preparation phase is selecting and training the IQM team. The IQM team will take an active role in implementing the IQM-Procedure by adding in the different stakeholders' perspectives and needs as well as by carrying out specific tasks. Hence, the IQM team shall know the IQM-Procedure in detail and advocate the implementation of the IQM-Procedure.

The IQM team includes representatives of relevant stakeholder groups which are for example: decision-makers, teachers, students, administrative staff, communications department, etc.<sup>57</sup> We highly recommend involving at least representatives of decision-makers, teachers, and students.

#### For selecting representatives of stakeholder groups the following criteria are recommended:

- High commitment to quality management issues
- Staying in the institution for at least the duration of the implementation process (except students)
- Time and interest to participate in training and coaching
- Well networked within their stakeholder group
- Cooperative communication style

<sup>56</sup> See chapter 'External Quality Assurance' for more information on linking the IQM-Procedure

<sup>57</sup> Future employers, relevant associations of specific professions, etc. are also relevant stakeholders. They shall be invited to specific workshops (e.g. defining a competence model) but do not need to be part of the IQM team.



**For selecting students please also consider<sup>58</sup>:**

- Number of representatives: Select at least two students; a single student can find it difficult to contribute or to be listened to in a group of professionals.
- Year of study: mix of different students from different stages of the degree.
- Performance: mix of good students and poorer performing students; they might be able to give you an insight on what contributes to the gap between intended and perceived student competences.
- Extracurricular activities/boards: involve students with extracurricular activities or student board positions; they might be able to consider organizational issues; also involve students without such positions because they can assist with making the 'advocacy' part understandable for all stakeholders at a higher education institution.

**Training goals of the preparation phase are that the representatives:**

- Know the motivation for implementing the new quality management procedure to the higher education institution.
- Know recent developments in the European Higher Education Area as well as in research<sup>59</sup>.
- Have an overview of the IQM-Procedure.
- Are committed to actively participate in all three steps of the IQM-Procedure.
- Get to know each other, perceive themselves as a team, and define rules for cooperation.

The recommended methods for establishing an IQM team are **personal communication** for the selection process and establishing **workshops** for the training. The selection process can be done together with the responsible decision-maker. Discuss with the decision-maker on how to invite the potential members to be part of the IQM team. The invitation process should reflect the institution's culture. We recommend inviting each potential member to a personal information meeting and then asking the potential member to respond within a week whether he or she will be part of the IQM team. The training can be done via a workshop process. Through the workshop process the IQM team shall get to know the IQM-Procedure in detail. Furthermore, information needs of each stakeholder group as well as expectancies and fears shall be discussed.

**The European Toolkit provides templates:**

Tool 3: Information material for potential IQM team members (template)

Tool 4: Workshops for preparation phase (template)

**Dedicate resources**

The third aim of the preparation phase is dedicating resources to the IQM-Procedure. Implementation research has shown that many programmes or procedures did not have an effect because they were not implemented properly. The resources shall be discussed explicitly with the decision-maker to ensure sound implementation of the IQM-Procedure. The two main arguments for a sound implementation and hence dedicating resources are: (1) Sound implementation by means of involving and addressing different stakeholders of the IQM-Procedure



<sup>58</sup> Criteria formulated by the students organisation IVSA

<sup>59</sup> See chapter 'Recent developments' for further information.

increases the possibility that stakeholders use the results of the procedure and hence improve quality. In contrast, non-proper implementation runs the risk of producing reports that end up in the drawer. (2) Sound implementation of the IQM-Procedure increases the possibility of creating a positive quality management culture at the higher education institution. In contrast, non-proper implementation runs the risk of displeasing stakeholders and of sustainably damaging a positive quality management culture.

The calculation of the resources depends on your higher education institution's context. However, we provide a calculation that can be used as reference for your institution.

**The European Toolkit provides a suggestion:**

Tool 5: Calculation of resources (suggestion)



The recommended method to reach Aim 3, which is dedicating resources to the IQM-Procedure, is on the one hand personal communication with decision-makers, the IQM team, and related departments (e.g. PR-department). On the other hand, we recommend written agreements (e.g. minutes of meetings) with decision-makers and related departments on resources, work packages and deadlines<sup>60</sup>.



**Suggested Timeline for the Preparation Phase**

Based on the information given in this chapter we suggest the following timeline. Please note that you do not necessarily need to deal with one topic for the duration of one month. Rather the timeline shall illustrate that you will need some months for preparation as preparation activities might be underestimated.



To sum up, at the end of the preparation phase decision-makers know and advocate the IQM-Procedure for Competence-Based Higher Education, an IQM team was established and resources have been dedicated. The next chapter is about Step 1 of the IQM-Procedure, i.e. about elaborating a competence model by defining the intended student competences (competences students should acquire by a specific study programme).

<sup>60</sup> There are no supporting tools within the European Toolkit.

# Step 1: Define Competences

## At the end of Step 1

- ➔ A **competence model** was elaborated and follows five quality criteria derived from competence research<sup>61</sup>
- ➔ **Stakeholders are informed** about the elaborated competence model.



## Elaborate a competence model

Institutions of higher education who focus on competence-based teaching usually defined competences students should acquire by a specific study programme. These competences can be listed e.g. in the curriculum but also in the Europass<sup>62</sup>. Please note, in everyday language often other terms instead of 'competence' are used to describe the objective of a study programme. Such terms are for example programme learning outcomes, qualifications or Day 1 skills.



In Step 1 of the IQM-Procedure we want to find out, whether your institution already has well-defined competences for a specific study programme or whether you need some more elaboration. Competence research gives some advice for well-defined competences or – to use the researchers' language – for a well-defined theoretical competence model. A well-defined competence model is the prerequisite for study programmes focusing on students' competences.

Competence research<sup>63</sup> provides five quality criteria for a well-defined competence model. In the following we firstly introduce a competence model which addresses all five quality criteria. For institutions that are unable or do not want to address all of the five quality criteria we provide core components that should be considered in developing a reduced version of a competence model. It is up to the person in charge of internal quality management to decide whether a comprehensive competence model or a reduced version shall be achieved. Figure 5 gives an overview of the five quality criteria, the details are described in the section on competence research of this handbook.

61 For more information on the five quality criteria please see Figure 6.

62 See chapter 'Transparency and Recognition Tools' for further information on Europass.

63 Bergmann et al. (2015, p. 3)

**Use a medium degree of abstraction**

Competences should be formulated on a **medium degree of abstraction** and **address the specific domain**.

**Define competence areas**

Competences should be structured into competence areas. The structure depends on the specific study programme and on key topics within the study programme. Hence, the competence areas differ between study programmes.

*Example: Such competence areas can be e.g. scientific competences, personal competences, ethical competences, domain-specific areas, etc.*

| COMPETENCE MODEL       |  |           |
|------------------------|--|-----------|
|                        |  | Aspect    |
| Scientific competences | Literature Research in Psychology-Related Databases                      | Cognitive |
|                        |  | Practical |
|                        | Scientific Writing According to Guidelines of Psychological Associations | Cognitive |
|                        |  | Practical |
|                        | Competence XY  | Cognitive |
|                        |  | Practical |

Figure 5: The Five Quality Criteria of the Competence Model in Internal Quality Management (through the example of scientific competences in psychology).

## Differentiating two aspects of competence

Differentiate between the cognitive and the practical aspect. The cognitive aspect means that a student should have scientifically based knowledge concerning a specific competence. In contrast, the practical aspect is more about performing actions.

## Define competence levels

Define competence levels for both aspects, the cognitive and the practical aspect. The levels should be clearly defined.

*Example: see chapter 'competence research' for more information*

## Consider the developmental dimension

Consider the developmental dimension by defining the competence levels for at least two important time points of a study.

*Example: for Bachelor's degree and for Master's degree; at the end of a study and for a crucial time point during the study.*

| Competence Level                                     |  |
|--|--|
| Developmental Dimension<br>e.g. Bachelor's Degree    | Developmental Dimension<br>e.g. Master's Degree    |
| 3  | 5  |
| 2  | 4  |
| 2  | 3  |
| 2  | 3  |
| (insert levels for Bachelor's degree in this column) | (insert levels for Master's degree in this column) |

### **Focusing on core components**

Meeting all five quality criteria of the competence model might not be the aim for each and every institution of higher education because higher education institutions might differ in starting points. Some institutions or single study programmes within an institution might already use a similar understanding of competence as we do in this handbook, and they have a detailed list of well-defined intended student competences with a lively discussion and consensus about the intended student competences among the stakeholders. In such cases, elaborating a competence model that meets all of the five quality criteria is a goal that can be achieved.

In contrast, some institutions might have a different understanding of competence than we do in this handbook<sup>64</sup> or some might not have such an elaborated competences list. Other institutions might have a somewhat difficult discussion culture or a lack of consensus on which competences or competence levels students should acquire. For institutions with such a starting point we recommend to focus on some of the quality criteria which we view as the core components of the competence model.

- Select most relevant competence areas
- Define most relevant competences within these areas
- Consider both, the cognitive and the practical aspect
- Define competence levels for end of study
- Complement the competence model step by step in subsequent years

#### **Is the competence model considered as part of the curriculum?**

In some European countries persons in charge of internal quality management have to consider that the competence model (or in other terms qualifications, Day 1 skills, etc.) is part of the curriculum. If this is true for an institution, the person in charge of internal quality management needs to clarify whether the more elaborated competence model shall be integrated in the curriculum. The integration might be a complex and time consuming process. Another option is to view the more elaborated competence model as an additional document which is based on the curriculum but not part of the curriculum.

<sup>64</sup> For higher education institutions that prefer to focus on the formulation of programme learning outcomes (see e.g. ECTS Users Guide, Bologna Process (2015a)) we refer to the literature on rubrics development to define levels of programme learning outcomes (see e.g. Svinicky & Mc Keachie, 2012 or Reddy & Andrade, 2010).



### Qualification Frameworks and Europass

In this Info Box we want to clarify the relation between the competence model for a specific study programme and the supranational Qualification Frameworks (e.g. European Qualification Frameworks). The competence model for a specific study programme defines the objective of a single study programme; it guides students what they can expect from a study programme and helps teachers to focus on agreed competences and competence levels. In contrast, the supranational Qualification Frameworks help comparing different national educational systems. In defining a competence model for a specific study programme you should bear in mind the supranational (and national) qualification frameworks<sup>65</sup> and also check whether the competences and competence levels of the competence models meet the expectancies of the supranational qualification frameworks for higher education programmes (e.g. Bachelor level or Master level).

Considering the Europass you can think about integrating the competences and competence levels of the competence model in the description of the study programme of the Europass.

Our method for elaborating the competence model follows a participative approach. Stakeholders should accept the competence model; hence we involve stakeholders in the elaboration process. A participative approach also can be viewed as a kind of intervention because a broad discussion about competences gets started. This development supports higher education institutions which are still in a change management process towards competence-based higher education and student-centred learning.



The recommended method for elaborating a competence model for a specific study programme are workshops for the IQM team moderated by the person in charge of internal quality management. Additionally working groups in between the workshops are foreseen to include further stakeholders.

#### **The European Toolkit provides templates:**

Tool 6: Workshops & Working Groups for Step 1 (template)

Tool 7: Competence model form (template)

In the following Info Boxes we provide tips and tricks for formulating competences as well as for formulating competence levels.

<sup>65</sup> See also chapter 'External Quality Assurance' for recommendations on designing and implementing the IQM-Procedure.



## Tips and tricks for formulating competences:

Firstly, analyse the already existing list of competences. Please remember in everyday language often other terms instead of 'competence' are used to describe the objective of a study programme. Such terms are for example programme learning outcomes, qualifications or Day 1 skills.

You can use the following bullet points as a checklist for analyzing each and every competence of the list. For more information on the background of formulating competences please see chapter 'Competence Research'.

- The competence is formulated on a medium degree of abstraction<sup>66</sup>
- The formulation of the competence addresses the specific domain
- The formulation of the competence addresses both aspects, the cognitive aspect and the practical aspect
- The formulation of the competence excludes the formulation of competence level
- The formulation includes only one competence, hence is one-dimensional

### **Example of a competence, which considers the five quality criteria:**

*Literature Research in Psychology-Related Databases*

### **Examples of competences, which do not consider all quality criteria (the reason is added in brackets):**

*Literature research* (too high level of abstraction)

*Literature Research in the database 'PsycInfo'* (too low level of abstraction)

*Knowledge about psychology-related databases* (addresses only one cognitive aspect but not the practical aspect)

*Advanced literature research skills* (includes level by using the word 'advanced')

*Basic knowledge in literature research* (includes level by using the word 'basic' and addresses only one cognitive aspect but not the practical aspect)

*Literature Research and Scientific Writing in Psychology* (multidimensional)

- Think about the total number of competences you would like to elaborate.

Note: In Step 2 we provide a method for collecting screening information on students' competences as well as on the teaching and learning process where students have to answer four questions for each competence. If you decided to use the provided method be aware of the number of questions which students will have to answer. If you define 30 competences, for example, students will have to answer 120 questions (see section on Step 2).

<sup>66</sup> You can also use a low level of abstraction, e.g. if in your institutions learning outcomes have already been formulated, if these learning outcomes are well-known in your institution and if you have resources to deal with a high number of competencies. See also last bullet point of the Info Box on number of competencies.

## Tips and tricks for formulating competence levels:

Competence levels can be formulated either generally or specifically.

### General formulation

The general formulation of competence levels means, that one formulation can be applied to any competence and that the formulation is not specific to a single competence<sup>67</sup>. In Annex 2 we provide an example for the general formulation of competence levels.

The advantage of using general formulations of competence levels in elaborating the competence model is that the formulation can be used for very different competences. Hence, the general formulation can be applied to different fields of study, different competence areas or different specific competences. It is one formulation that fits all competences and hence does not need many resources when developing a competence model.

The disadvantage of general formulations is that different persons might have a different understanding what the general competence level means applied to a specific competence. For example, the competence level which simply is called 'Beginners' might mean different things to a freshman and to a professor in the field. Hence, it is important that general competence levels are described very comprehensively.

The example in the Appendix provides such a comprehensive description and can be used for developing a competence model. The method for collecting screening information in Step 2 is also based on the general description provided in the Appendix.

### Specific formulation

The formulation of competence levels specifically for one competence means, that you have to formulate competence levels for each and every competence separately<sup>68</sup>.

The advantage of using a specific formulation of competence levels is that the different persons understand reasonably the same by the specific level. If the level of competence says for example in psychology for the cognitive aspect of the competence 'planning experiments' that a beginner knows the difference between experimental and quasi-experimental designs, every psychologist will know what is meant. In contrast if you have it at a general level that says a beginner 'knows facts and can actively reproduce them', people can interpret different things.

The disadvantage of specific formulations is that the development process needs many resources, especially when developing a comprehensive competence model. For developing specific levels we recommend to firstly agree on an already existing general formulation of competence levels which provides the basic structure for formulating the specific competence levels. Further information can be found e.g. in the literature about developing rubrics<sup>69</sup>.

It is up to the person in charge of internal quality management together with the IQM team to weigh the pros and cons and to decide on the formulation of competence levels. Please consider that the competence levels simultaneously are answer formats if you use questionnaires in Step 2, because you will ask students and teachers about the perceived level of competence.

<sup>67</sup> See chapter 'Competence Research' for well-known formulations of general competence levels.

<sup>68</sup> See chapter 'Competence Research' for well-known formulations of specific competence levels; see also Research on rubric development (e.g. Reddy & Andrade, 2010);

<sup>69</sup> e.g. Reddy & Andrade (2010); Svinicki & McKieachie (2012)



### Conduct an information campaign

The second aim of Step 1 is informing stakeholders. So far, only representatives of stakeholder groups were involved in elaborating the competence model. However, all stakeholders should be informed about the final version of the competence model as well as about the participative approach in developing the model. Depending on the culture of a higher education institution the information campaign can start even before Workshop 1. This way you can not only inform stakeholders but invite interested stakeholders to participate in the working groups.



The recommended method for the information campaign are common information channels of decision-makers, public relations unit and perhaps also of stakeholder groups (e.g. students' newspaper).

#### The European Toolkit provides templates:

Tool 8: Communication plan for Step 1 (template)

Tool 9: Information material for different stakeholder groups for Step 1 (templates)

#### **Digression: Quality improvement measures based on Step 1 results**

After elaborating the competence model, the IQM team can discuss in a workshop whether the competence model itself already results in obvious practical implications for the competence-based teaching and learning process. For example, according to the competence model students should acquire a very high level in a specific competence but this was not explicitly considered in the teaching process so far. As a quality assurance measure the IQM team could suggest that a team of teachers meets to discuss how this competence level can be achieved (smaller group sizes, different teaching methods or assessment methods, better equipment, etc.).

### Suggested Timeline for Step 1

Based on the information given in this chapter we suggest the following timeline:



At the end of Step 1, the competence model is elaborated and follows the five quality criteria derived from competence research – or follows at least the core components. Furthermore, stakeholders are informed about the competence model and the participative approach in developing the model. In the following Step 2, screening information should be collected to find out whether students and teachers perceive that students actually did acquire the competence levels and whether students perceive that the teaching and learning process helped them in doing so.

## Step 2: Screen Competences



### At the end of Step 2:

- ➔ **Stakeholders have been informed** about the general IQM-Procedure and in particular about the collecting of screening information before the collecting of the information has started (information campaign)
- ➔ **Screening information** has been collected. It shows gaps between intended and perceived student competences from students' and teachers' perspectives. Furthermore it provides insight to the quality of the teaching process from the students' perspective.
- ➔ **Screening report** is finished and results were communicated in a stakeholder-specific manner



### Conduct an information campaign

Step 1 ended with an information campaign about the competence model and the participative approach in elaborating the competence model. Step 2 starts with an information campaign about the IQM-Procedure in general and the screening information collection procedure in specific. If the information campaigns of Step 1 and Step 2 are close to each other they can be combined. In contrast, if there are some months in between developing the competence model and collecting screening information, the campaigns should be separated. Separating might be more realistic in the implementation phase because the methods for collecting screening information might be developed or adapted to the institutions needs first. This usually takes some time.



The recommended methods to reach Aim 1 which is doing an information campaign are – as in Step 1 – common information channels of decision-makers, public relations unit and perhaps also of stakeholder groups. It is best to use the same channels in Step 2 as in Step 1.

#### The European Toolkit provides templates:

Tool 10: Communication plan for Step 2 (template)

Tool 11: Information material for different stakeholder groups for Step 2 (templates)

After informing all stakeholders about the screening you can start collecting the screening information. In the following we give you recommendations for doing so.



### Collecting screening information

In this IQM-Procedure we suggest a cascaded approach in collecting information: In Step 2 we recommend collecting self-assessment screening information. In Step 3 we recommend going into detail for selected competences, based on the results of the screening. The cascaded approach should assure the evaluation standards of feasibility<sup>70</sup> and usability of the IQM-Procedure. Screening information can be collected quite easily and hence addresses the feasibility standard. In contrast, collecting detailed and/or objective data on each competence within Step 2 might overtax administration and thereby violate the feasibility standard. Screening information provides an overview and can be considered by the stakeholders quite easy; there-

<sup>70</sup> See chapter 'Evaluation Research' for more information on evaluation standards.

fore, screening information addresses the utility standard. Too detailed data on all competences might overwhelm stakeholders and thus violate the utilisation standard.

The cascaded approach has two implications for Step 2: First, at the end of Step 2 potential gaps between theory and practice of competence-based higher education are known but NOT the reasons for the gaps. Learning more about the reasons for the gaps will be part of Step 3. Second, in Step 2 we want to find out what the stakeholders are thinking. Based on the participative evaluation approach, we concentrate on the stakeholders' perception of competences as well as of the teaching and learning process. We do NOT aim at collecting objective data in this step because this might be a too complex endeavour for many institutions. If collecting objective data is very important to a higher education institution, we recommend doing that for specific competences only in Step 3.

By collecting screening information we want to answer the following evaluation questions:

- Did the students achieve the intended competence levels as defined in the competence model (from different stakeholders' perspective)?
- Did the teaching and learning process foster students' competences up to the intended level as defined in the competence model (from the students' perspective)?
- Further questions can be added with respect to the stakeholders' information needs.

The above listed questions are more general questions. We recommend specifying the evaluation questions to your institution's needs. For example, you can think about the percentage of students who shall reach the intended students competence levels. Is your success criterion that all students reach the intended levels in all competences or is it more realistic specifying that e.g. 75% of students reach the intended level of a competence? Defining such concrete success criterions might need some discourse in your institution.

It is up to you, the person who is in charge of internal quality management, to specify the evaluation questions for your higher education institution and to find out the appropriate method for collecting screening information based on the institutions needs and possibilities. Thereby, you should decide on three methodological aspects, derived from social-science research: Firstly, you need to decide on the participants (who shall participate in the survey), secondly on the instrument (e.g. questionnaires, interviews, focus groups, etc.), and thirdly on the procedure (e.g. mandatory vs. voluntary participation, online vs. paper-pencil, participation at home vs. at the higher education institution, etc.).



In choosing an appropriate method you need to consider the starting point for your institution. As in Step 1, where we outlined the potential different starting points in formulating a competence model, the starting point for collecting screening information might also differ between institutions (see Info Box).

### **Different starting points for screening information collection**

Some institutions might already have experience with social-science methods or some financial resources and can easily develop instruments for screening information collection. They might have a positive quality management culture and stakeholders which are committed to participate in surveys. Other institutions might not have many resources for quality management issues or less experience in using social-science methods. The starting point might also differ because of some other factors like for example, the number of students.

In the next paragraphs we provide a specific method for a screening which is based on the competence model described in Step 1; the so called competence screening questionnaire for higher education. Afterwards, we provide core components to be considered if the provided questionnaire is not appropriate for your higher education institution.

The Competence Screening Questionnaire for Higher Education (CSQ-HE) is based on the competence model explained in Step 1. In the following we give some general information on the CSQ-HE. On the basis of the information, you, the person in charge of internal quality management, can make an informed decision whether the CSQ-HE is appropriate for your institution or not.

The CSQ-HE provides a framework where the competences of the competence model can be filled in easily. Prerequisite is a competence model which uses the general formulation of competence levels provided in the Annex 1. The CSQ-HE is appropriate for higher education institutions that:

- Want to involve most of the relevant stakeholders and ask them about their perception. We offer two versions of the CSQ-HE, a student questionnaire and a teacher questionnaire. However, the teacher questionnaire can easily be adapted to ask other stakeholder groups too (e.g. employers), if relevant.
- Want to foster the institutional change management process towards competence-based higher education. If many students and teachers fill in the CSQ-HE, it can be viewed as an intervention instrument because the stakeholders start to think and talk about competences.
- Are looking for a monitoring instrument. If the CSQ-HE is applied regularly, the quality of competence-based teaching can be tracked over the years.

You can find further information on the specific evaluation questions you can answer with the CSQ-HE as well as on the questionnaire itself in the European Toolkit.

#### **The European Toolkit provides templates:**

Tool 12: Competence Screening Questionnaire for Higher Education  
(CSQ-HE; fact-sheet + template)

If conducting the CSQ-HE is not an appropriate method in your institution you can choose other evaluation questions and methods. We recommend following the common standards of social-science research in formulating evaluation questions and choosing appropriate methods. Other social science methods are, for example, interviews, focus groups or – if available – objective tests (see Info Box 'Further possible methods' for further information). We recommend considering the following core components in choosing other evaluation questions and methods:

- Evaluation questions should be related to the so called intended student competences of your competence model.
- Gain information about the perceived student competences as well as about the perceived teaching and learning process.
- Evaluation questions should include a clearly defined success criterion (e.g. percentage of students that shall have acquired a defined level of competence).
- Choose social-science methods that are appropriate to answer your evaluation questions. (e.g. do not collect quantitative data if you need qualitative information to answer your questions).



### Further possible methods

In this Info Box we want to suggest further methods to gather screening data besides using the CSQ-HE. Generally, all the methods used in social sciences for empirical studies can be helpful to get screening data about perceived student competences. You could use different forms of self-assessments like questionnaires, which are easy to administer, analyse and interpret. You can design them yourself or rely to existing questionnaires. You can also think about using rubrics if you used a specific formulation of competence levels<sup>71</sup>. You could also conduct interviews for example with students or teachers to get a deeper insight with qualitative data. Interviews can vary from totally free, semi-structured with some standardized questions or totally standardized following a fixed set of questions. Furthermore, there are forms that involve groups with which you have a dialogue about the competences or special topics like focus groups. You could also use objective tests, if there are some that fit for your purposes or create a knowledge-test by yourself. There are some research initiatives to create objective tests like the KoKoHs program<sup>72</sup> you could rely on. However, creating objective tests needs lots of resources. Observations of classrooms are also an option or even video-based observations. After all, when deciding for a possible method, you should weigh the pros and cons of different methods bearing questions in mind like: What are my resources? What is feasible? Which methods are easy to administer, analyse, and interpret? Are they sensitive for changes if I want to use them for monitoring? What about their quality? Do they really provide the information I like to have? Which information do I like to have, quantitative or qualitative? What about anonymity and reasonability?

So far we talked about informing the stakeholders about the screening and about collecting screening information in Step 2. Now we move on to the third aim of Step 2 which is communicating the results to the stakeholders. At the end of Step 2 of the IQM-Procedure a report should be provided and the results should be communicated in a stakeholder-specific manner.

### Develop a screening report for internal stakeholders

In the utilisation focused evaluation approach, communicating the results of a survey to the stakeholders is crucial. Transparency of results is also highly relevant from an external quality assurance perspective<sup>73</sup>. A report is one tool to inform the stakeholders. It helps the interested reader to understand the motivation and method of the survey; it provides the evaluation questions and also answers the questions. However, providing the report on the institutions website without further action usually does not lead to the use of the report. Hence, stakeholders who shall use the results need to be informed in a specific manner; i.e. the report should be accompanied by further communication actions (e.g. more specific information in the student's newspaper). In the Info Box we recommend a very general structure for a report according to the standards of social-science research. Afterwards, we provide some methods for reporting and stakeholder-specific communication of the results.



71 See e.g. Reddy & Andrade (2010); Brookhart (2013) or Svinicki & McKieachie (2012) and the further reading section for more information on rubrics.

72 See Blömeke & Zlatkin-Troitschanskaia (2013)

73 See section 'External Quality Assurance' for further information.

### Report structure

- **Executive Summary**
- **Introduction & Motivation**
  - Motivation for survey
  - Overview of the IQM-Procedure in competence-based higher education
  - Competence model
  - Evaluation questions
- **Method**
  - Participants
  - Instruments
  - Procedure
- **Results and Discussion**
  - Answering the research questions including summary of results
  - Interpretation and recommendations from the perspective of the person(s) in charge of internal quality management
- **Annex: Detailed results**



Reporting to internal stakeholders of the higher education institution and the stakeholder specific communication strategy should lead to the use of the results<sup>74</sup>. The results of the survey should be communicated to all relevant stakeholder groups, which are at least students, teachers, and decision-makers. We provide a report based on the Competence Screening Questionnaire for Higher Education (CSQ-HE)<sup>75</sup>, as well as methods for communicating the results in a stakeholder-specific manner. If you do not use the CSQ-HE or if you do not have the resources for the report provided, you can consider the core components for communicating the results.

We recommend addressing four different stakeholder groups: decision-makers, the quality management board, students, and teachers:

- Decision-makers<sup>76</sup> should get the report where the executive summary provides an overview of the results.
- The IQM team and the quality management board<sup>77</sup> respectively, should get the report. The report is the starting point for Step 3 of the IQM-Procedure.

#### The European Toolkit provides templates:

Tool 13: Screening report (based on the Competence Screening Questionnaire for Higher Education – CSQ-HE; template)

- Each student should get an individual competence profile. The profile provides an overview of his or her self-assessed perceived competence levels in contrast to the intended competence levels. Hence, each student receives a summary of his or her individual self-assessment data. Students can set individual learning goals based on the overview.

<sup>74</sup> For more information on reporting to external stakeholders of the higher education institution please see chapter 'How to report for external quality assurance'.

<sup>75</sup> See Step 2, Aim 2, CSQ-HE

<sup>76</sup> E.g. vice rector for teaching and learning, senate, curriculum commission, etc.

<sup>77</sup> The quality management board is the successor of the IQM team. More information you can find in the section 'Future Perspectives'.

Figure 6 illustrates such an overview.

Higher education institutions shall provide support for students in interpreting and reflecting the results, for example, in the course of a seminar which is part of the curriculum. Empowering stakeholders is also discussed in the chapter 'Sustainability'.

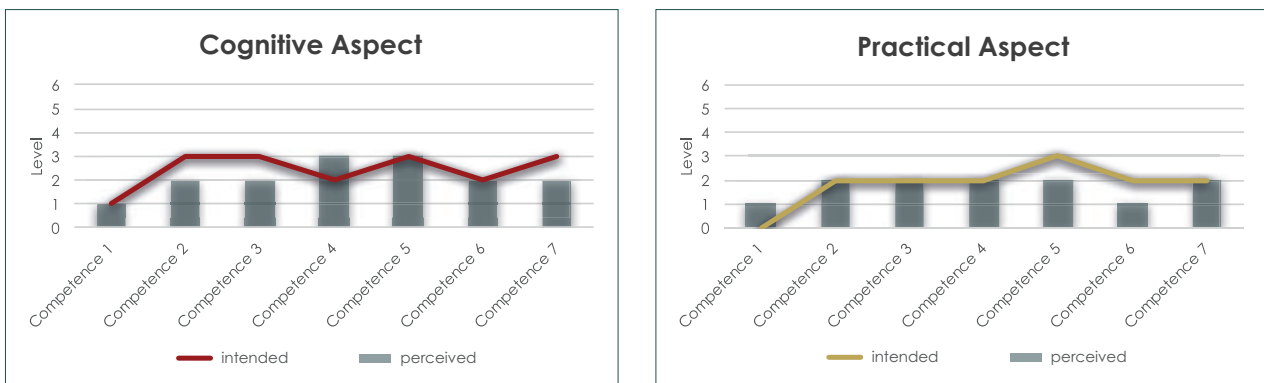


Figure 6: Competence-Profile as Feedback-Suggestion for Students

- Each teacher should get an overview of the results for the population of students he or she teaches, e.g. students at the end or at a crucial time point during the study. The results should include the perceived student competence levels from the students' as well as from the teachers' perspective. Furthermore, the results should include the perceived taught competence levels from the students' perspective. Teachers can derive consequences for their teaching based on the screening information. This can be done for example in a seminar for teachers by the human resource development department. Figure 7 illustrates such an overview.

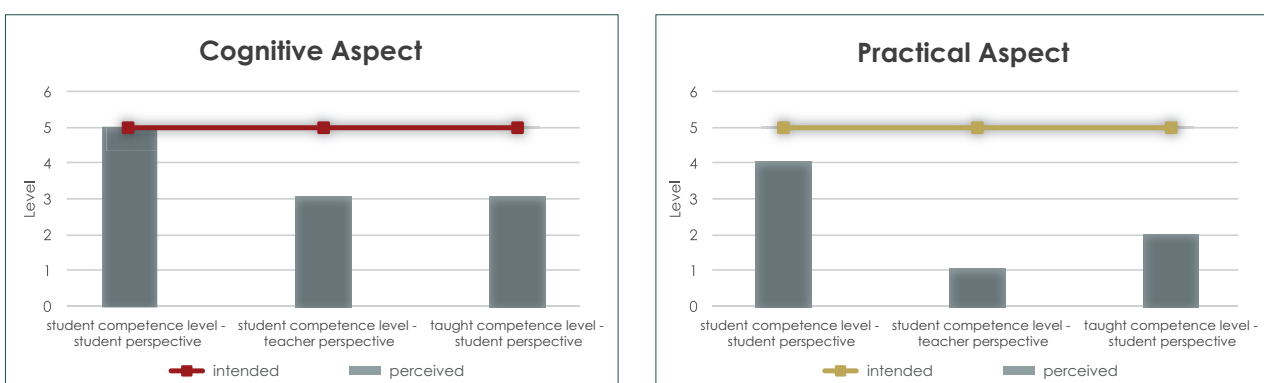


Figure 7: Overview of Results per Competence as Feedback-Suggestion for Teachers

**Core-components:**

We recommend addressing decision-makers, the quality management board<sup>78</sup>, students, and teachers. Decision-makers and the quality management board should receive a report as suggested in the details of the previous section. However, the methods for stakeholder specific communication can be less elaborated. Students and teachers can be informed about the main results via usual communication pathways of the institution (e.g. homepage, student newspaper, newsletter, meetings for teachers on teaching and learning, etc.).

**Suggested Timeline for Step 2**

Based on the information given in this chapter we suggest the following timeline:



To sum up, at the end of Step 2 the stakeholders have been informed about the IQM-Procedure in general and the upcoming screening in particular (= information campaign). Furthermore, screening information has been collected and provides an overview of gaps between theory and practice of competence-based teaching and learning. Finally, the report is finished and results were communicated in a stakeholder-specific manner.

The screening is used to start a discussion about quality management in competence-based higher education. The results will be interpreted and discussed in more detail and measures for quality assurance and quality improvement will be developed and conducted. This is the topic of the next step of the IQM-Procedure, which is Step 3.

<sup>78</sup> The quality management board is the successor of the IQM team. More information you can find in the section 'Future Perspectives'.

## Step 3: Enhance Competences

### At the end of Step 3

- ➔ Possible measures for quality enhancement and quality assurance based on the report are **developed** and collected
- ➔ Selected measures for quality enhancement and quality assurance were **initiated**.
- ➔ **Stakeholders were informed** about the initiated measures



### Develop measures for quality enhancement and quality assurance

Quality managers are used to develop reports. However, sometimes evaluation reports end up in a drawer and there are no consequences of the report. In other cases the results are used and there are consequences, but the stakeholders do not know about this. By conducting Step 3, you ensure the utilisation of the report and the stakeholders knowing about the consequences of the screening.



The report developed in Step 2 provides an overview of gaps between theory and practice. In Step 3 we go into detail and analyse the results thoroughly. In the following we recommend a procedure for Step 3 which is: (i) prioritizing and selecting most relevant competences, (ii) formulating working theories that could explain the results regarding the selected competences, (iii) discussing or testing the working theories, and (iv) developing quality enhancement and assurance measures.

We recommend starting with prioritizing and selecting competences because a thorough analysis of each competence might overwhelm the stakeholders and hence would not meet the evaluation standard of feasibility. Therefore, you must select a reasonable number of competences which should be looked at in detail. The selection procedure can be done by the IQM team in workshops. For selecting competences you can consider the following criteria:

- Select competences which are crucial to the study programme and need to be looked at in detail from the beginning.
- Select competences where perceived levels are way beyond the intended levels to develop quality enhancement measures.
- Select competences where perceived levels surpass the intended levels for developing quality assurance measures and learn more on how to transfer successful aspects to other competences.

After competences have been prioritized and selected, the IQM team discusses and formulates working theories which could explain the results. The discussion should include two important issues which are firstly involving different perspectives and secondly having a comprehensive view on possible reasons. First, involving different perspectives means that students, teachers and decision-makers shall participate in the discussion and formulate working theories. Each perspective shall be considered as valuable in discussing the results.

Second, a comprehensive view means that – according to the model of competence-based higher education<sup>79</sup> – the reason for a result can be found in the curriculum, the teaching methods and the assessment methods, the learning process of students, and/or the context of a

<sup>79</sup> See section 'Competence Research' for Model of Competence-Based Higher Education.

teaching and learning process. Hence, the discussants shall consider all aspects of the teaching and learning process, depicted in the model for competence-based higher education, (see Fig. 4). Additionally, stakeholders shall also have in mind the time students are supposed to invest for developing competences and think about whether the amount of credit points of the ECTS are appropriate for developing competences<sup>80</sup>. At the end of the discussion, the discussants shall agree on several working theories for each competence that could explain the result (you can also formulate specific hypothesis if you aim at hypothesis testing).

Subsequently to formulating the working theories, the IQM team needs to find out which working theory is true. You can consult already existing data bases e.g. data from course evaluation or already existing reports of the vice-rectorate. Note that this is the perfect possibility to integrate the already existing quality management instruments and the IQM-Procedure to form a bigger picture of internal quality management in general<sup>81</sup>. However, if existing data is not appropriate, new data needs to be collected. Depending on the working theories and on resources this data collection can be more elaborate or more economic. More elaborate methods are conducting e.g. objective instruments, existing or newly developed self-report questionnaires (see Info Box 'Further possible methods'). A more economic method is for example a focus group with representatives of relevant stakeholder groups or interviews. Relevant stakeholder groups are for example teachers who are experts for those competences, students or graduates.

As soon as the working theories have been verified (or at least discussed) and reasons for the results have been identified, the IQM team can plan concrete measures for quality enhancement and quality assurance. Thereby, it is highly important to discuss the following two questions:

- Is this a realistic measure (e.g. are there enough resources)?
- Which problems can arise while implementing the measure and what is needed to prevent the problem (e.g. who might be against the measure and how can we involve this person)?

We provide a collection of possible measures in the European Toolkit for Internal Quality Management in Higher Education.

Figure 8 provides an overview of developing measures.

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80 See chapter 'Transparency and recognition tools' and Bologna Process (2015a) for further information on ECTS. Projects regarding the evaluation of student workload are for example the 'Zeitlaststudien' from Schulmeister (2009-2012)

81 See chapter 'External quality assurance' for further information on linking the IQM-procedure to the bigger picture.

|   |   |
|---|---|
| <p><b>Select competences</b></p>            | <ul style="list-style-type: none"> <li>Based on the screening results: Which competences shall this year be selected for developing quality enhancement and quality assurance measures?</li> </ul>  |
| <p><b>Formulate working theories</b></p>    | <ul style="list-style-type: none"> <li>What are the possible reasons for the results of the selected competences from different stakeholders' perspectives?</li> <li>Do the reasons lie in the curriculum, in the teaching methods and assessment methods, in the learning strategies of students, and/or in the context of the teaching and learning process?</li> </ul>   |
| <p><b>Test/discuss working theories</b></p> | <ul style="list-style-type: none"> <li>Shall we test or discuss the working theories? If testing:</li> <li>Can we test our working theories (hypotheses) by using existing data (e.g. reporting systems, course evaluation results, etc.)?</li> <li>If not, are there existing evaluation instruments we would like to use?</li> <li>If not, what should the evaluation instrument be like considering different methods from social-science research as well as the evaluation standards?</li> </ul> |
| <p><b>Develop concrete measures</b></p>     | <ul style="list-style-type: none"> <li>As soon as the working theories have been tested or discussed and reasons have been identified: Which concrete measures should be taken and by whom?</li> </ul>  |

Figure 8: Step 3 of the IQM-Procedure. Details please find in the text above.

The recommended method for developing measures for quality enhancement and quality assurance are workshops with the IQM team. For testing the working theories you can collaborate with other departments e.g. the vice-rectorate for teaching and learning to integrate results of the course evaluation in testing the working theories or with IT services if you want to conduct an additional online questionnaire.



**The European Toolkit provides templates:**

Tool 14: Workshops for Step 3 (template)

Tool 15: Collection of possible measures for quality enhancement and quality assurance





### Initiate measures for quality enhancement and quality assurance

So far measures for quality enhancement and quality assurance have been developed. It is up to the decision-maker to take the initiative by selecting and implementing the suggested measures. The implementation method depends on the measure and the context. However, implementation research provides some tips and tricks for successful implementation; see section 'Implementation Research' for further information.

However, also the other stakeholders can initiate measures. For more information please see the subsequent section on empowering stakeholders within the chapter 'Future perspectives'.



### Inform the stakeholders about the initiated measures

Often stakeholders participate in surveys and are informed about the results. However, the initiated measures are not communicated explicitly to the stakeholders. Informing stakeholders is crucial and can help developing a positive quality management culture at a higher education institution. Stakeholders who see the consequences of a survey are more likely to participate in the next survey, to discuss the results, and to acknowledge the quality enhancement and assurance efforts of their institution.

The methods for informing stakeholders are the same as for the information campaigns in Step 1 and 2.



### Suggested Timeline for Step 3

Based on the information given in this chapter we suggest the following timeline:



To sum up, at the end of Step 3 possible measures for quality assurance and quality improvement based on the report are developed and collected, selected measures were initiated, and stakeholders are informed about the measures. Hence, by implementing Step 1 to 3, the IQM-Procedure is accomplished. Before moving on to routine operation of the IQM-Procedure we highly recommend to reflect the implementation so far. And this is our topic for the next chapter.

# Reflection

At the end of the reflection phase, the person in charge of internal quality management knows:

- **Success factors** of the implementation process and
- How to **further improve** the IQM- Procedure at their higher education institution.



Implementing a new procedure to an institution often has the character of an experiment. Even if the implementation process is planned and conducted thoroughly there are often some unpredictable developments or factors that need to be considered additionally in the next IQM cycle. Hence, the last phase of the implementation process shall provide some time to reflect the implementation. This is also recommended from an external quality assurance perspective<sup>82</sup>.



Firstly, take a deep breath and be proud of the hard work already done. Think about the success factors and make some notes which you can consult in the next cycle of the IQM-Procedure. We often tend to emphasise bad news so it is even more relevant to take notes on the success factors and emphasise the positive aspects of the implementation process.



Secondly, have a look at your documentation of the implementation process. Reflect the unpredictable developments and factors that caused some trouble. Make some notes on lessons learned in general. Additionally, develop very concrete measures for improving the IQM-Procedure at your institution.

Thirdly, also seek feedback from different stakeholders. You can invite representatives of different stakeholder groups to a focus group or to an interview.

## The European Toolkit provides templates:

Tool 16: Reflection and questions for the Reflection Phase

## Suggested Timeline for Reflection

Based on the information given in this chapter we suggest the following timeline:



<sup>82</sup> See section 'External Quality Assurance' for further information.

Now, we are at the end of the implementation process. As mentioned at the beginning of the chapter on the IQM-Procedure, we provided some information on how to implement the IQM-Procedure as a pilot project to a specific study programme. After reading the chapter you know how to prepare decision-makers, the IQM team and resources. You know the three steps of the IQM-Procedure which are (1) elaborating a competence model, (2) collecting screening information, and (3) developing and initiating quality assurance measures. You have obtained some information on different methods for implementing the three steps of the IQM-Procedure to a higher education institution. Now, you have acquired some ideas about reflecting on the implementation process.

The next chapter is about assuring sustainability in implementing the IQM-Procedure and about expanding the IQM-Procedure to other study programmes of your institution. Furthermore, because besides internal quality management also external quality management is crucial in the European Higher Education Area, we discuss some recommendations for reporting to external quality assurance.





# FUTURE PERSPECTIVES

How to manage sustainable implementation as well as reporting to external quality assurance agencies

Sustainable implementation and expansion  
How to report for external quality assurance

# FUTURE PERSPECTIVES

## How to manage sustainable implementation, as well as, reporting to external quality assurance agencies

The handbook provides information on how to implement the IQM-Procedure to one specific study programme of a higher education institution as a pilot project. In the subsequent chapter, 'Sustainable Implementation and Expansion', we discuss on the one hand how the person in charge of internal quality management can ensure sustainable implementation of the IQM-Procedure within a specific study programme, and as a consequence leading to IQM-Procedure becoming a routine operation. On the other hand, we give an outlook on how the IQM-Procedure can be expanded to further study programmes of your higher education institution. In the chapter, 'External Quality Assurance', we provide some suggestions for reporting for external quality assurance.

### Sustainable implementation and expansion

#### What is this chapter about?

- This chapter is about ensuring continuous and sustainable quality enhancement and quality assurance of competence-based higher education within one specific study programme by:
  - Assisting decision-makers
  - Establishing a quality management board
  - Establishing facilitative administration
  - Empowering stakeholder groups
- Furthermore, this chapter is about expanding the IQM-Procedure to further study programmes of a higher education institution.



## Sustainable implementation

The IQM-Procedure is supposed to be conducted regularly. Hence, we have to think about how we can assure sustainability in implementing the IQM-Procedure and there are several factors. However, before discussing the factors, let us think about an appropriate interval for conducting the IQM-Procedure. In the Info Box we discuss advantages and disadvantages for both, a short interval and a long interval.

### Interval for conducting the IQM-Procedure

The advantage of a shorter interval (e.g. one year) is that you have more time points for tracking students' competences and competence-based teaching and learning, respectively. Hence, it is easier to find out reasons for changes, e.g. whether the change is caused by quality enhancement and quality assurance measures or because of other reasons like changes in staff. Furthermore, a short interval is more likely to foster an ongoing discussion on the quality of competence-based higher education and more likely to establish an organizational evaluation culture. If you carry out the procedure annually a further advantage is receiving information from all students and – if you have two time points for the survey during the study – you can also track individual students' competences. The disadvantage of a short period is the higher workload.

With a very long interval (e.g. 4 years) you need fewer resources. However, a disadvantage might be that stakeholders do not get used to the procedure if it is conducted with a long interval and the workload for communicating and conducting the IQM-Procedure might therefore be higher than in a procedure carried out annually or biannually. A further disadvantage of a long interval is that you might not find out the reason for changes because the longer the time period, the more factors can cause a change. For sustainable implementation we recommend an annual or biannual cycle of the IQM-Procedure.

The IQM-Procedure can serve as a monitoring tool if it is conducted regularly. It is up to you and the decision-makers of your institutions whether you carry out the IQM-Procedure every year, every two years or even with a longer interval.

Regardless of the interval, successful and sustainable implementation of the IQM-Procedure can be supported by considering four factors, which might already be familiar to you because they are somewhat the same as in the implementation of the pilot project. The first three factors are deduced from implementation research<sup>83</sup>, the fourth factor is deduced from evaluation research<sup>84</sup>: assisting decision-makers (Leadership drivers), establishing a quality management board (Competency Drivers), establishing facilitative administration (Organization Drivers), and empowering stakeholders (Empowerment Evaluation). In the following we explain the four factors in more detail and suggest some methods for considering the factors.

### Assist decision-makers

The sustainable implementation of the IQM-Procedure is a complex endeavour. Decision-makers, for example, rectorate or senate are a crucial success factor for the implementation process. Blasé and Fixsen summarise the role of decision-makers: 'To exercise leadership toward the full implementation of effective innovations means moving a complex and entrenched system through meaningful change and leading through the resistance that can arise in the process.'<sup>85</sup>

83 See chapter 'Implementation Research' for more information.

84 See chapter 'Evaluation Research' for more information.

85 Blasé & Fixsen (2013)

You as the person responsible for internal quality management can assist the decision-makers in this complex process<sup>86</sup>. On the one hand, you can provide solutions for more technical decisions (e.g. how to inform stakeholders). On the other hand, you can act as a sparring partner for more adaptive decisions. In adaptive decisions there is not a clear solution. In contrast, you have to think through a complex matter (e.g. how to act as a leader in case of resistance).

You need to pay special attention in the case of change in the decision-makers' positions while actively informing the new decision-makers about the IQM-Procedure and ensuring the new decision-maker's support for the IQM-Procedure.

The recommended method for informing the new decision-maker is personal communication. We suggest informing the new decision-maker about the IQM-Procedure<sup>87</sup> and add the experience you already gained in previous IQM-Procedure cycles.

### **Establish a quality management board**

The second factor for ensuring sustainable implementation is establishing a quality management board. We recommend transforming the already existing IQM team of the implementation process to an institutionalized quality management board. The quality management board is highly content-related and discusses competences, competence-based higher education and especially quality management of competence-based higher education. Administrative staff shall be excluded from the quality management board and be invited to meetings of the quality management board in which administrative issues<sup>88</sup> need to be discussed and planned (e.g. upcoming information collection). If members of the quality management board change, you need to train new members before the next meeting.

The quality management board's tasks<sup>89</sup> are to discuss and decide on the following issues of the regularly conducted IQM-Procedure:

- The board discusses feedback of the reflection phase and initiate improvement for next Internal Quality Management cycle
- Regarding Step 1 and 2: The board discusses and decides on the strategic aspect of the IQM-Procedure, e.g. potential modifications/updates of competence model, screening and reporting. (The operational aspect of Step 2, e.g. collecting screening information, should be performed by facilitative administration; see next factor 'Establish facilitative administration')
- Regarding Step 3: The board performs all aspects of Step 3

The board monitors and documents the implementation of quality enhancement and quality assurance measures initiated by Step 3.

The quality management board needs to be established and institutionalized by decision-makers together with you, the person in charge of internal quality management. The rules of procedure for the quality management board shall be set out in writing.

#### **The European Toolkit provides templates:**

Tool 17: Rules for the procedure of the quality management board (template)

<sup>86</sup> See chapter 'Preparation' on assisting decision-makers in implementing the IQM-Procedure to a specific study programme in a pilot-project.

<sup>87</sup> See chapter 'Preparation' for details and tools.

<sup>88</sup> E.g. PR unit for information campaign

<sup>89</sup> Defining responsibilities is also recommended from an external quality assurance perspective. See chapter 'External Quality Assurance' and especially the section 'Designing and implementing the IQM-Procedure' for more details.

### **Establish facilitative administration**

The third factor for sustainable implementation is establishing facilitative administration. You, the person in charge of internal quality management, need support from the higher education institution's administrative departments in conducting the IQM-Procedure, e.g. support from IT-department by administrating the online-questionnaire or from the PR-department by administrating the information campaign. Supporting the IQM-Procedure should become a regular work package within the administrative departments<sup>90</sup>. Besides specific tasks for each department, the work package could include e.g. a meeting with all administrative departments involved to evaluate the previous administration of the internal quality management cycle and to plan the next internal quality management cycle.

Facilitative administration needs to be established by decision-makers together with you, the person in charge of internal quality management, via personal communication and setting out in writing the tasks for administrative departments involved.

### **Empower stakeholder groups**

The last factor for sustainable implementation is empowering stakeholder groups. Internal Quality Management is a matter for all stakeholder groups of the higher education institution. Teachers, students, decision-makers and other stakeholder groups should be empowered to interpret and reflect the results and to use the results for a personal learning process.

The recommended method for empowering stakeholders is a mixture of information and training.

#### **Information campaign:**

- Because of the high fluctuation of students, teachers and other stakeholders, continuous information on the IQM-Procedure is recommended parallel to the IQM-cycles. Stakeholders shall be informed about the background and motivation for the IQM-Procedure, upcoming screening, results, quality enhancement and quality assurance measures, and so on. See implementation chapter for details on information campaigns.
- Provide stakeholder specific information on the results of the survey (e.g. each student gets an individual profile including his or her self-assessed perceived competence levels compared to intended levels). See Step 2 for details on stakeholder specific reports.

#### **Train stakeholders:**

- Students can be trained e.g. in courses where they are guided to interpret the individual competence profiles and to set individual goals e.g. by defining competence-levels they want to acquire. Also competence-based learning strategies can be discussed in such a course. Furthermore, students could be trained on evaluation and quality management in general<sup>91</sup>. Students should learn to critically look at their education, how to self-evaluate and how a course is structured to increase the quality of student feedback and hence the quality of higher education.
- Teachers can be trained e.g. in courses provided by the human resources development department in interpreting the report as well as in using competence-based teaching methods and assessment methods<sup>92</sup>. Furthermore, you, the person in charge of internal quality management, can discuss the results together with teachers in already established faculty meetings or the like.

<sup>90</sup> Defining responsibilities is also recommended from an external quality assurance perspective. See chapter 'External Quality Assurance' and especially the section 'Designing and implementing the IQM-Procedure' for more details.

<sup>91</sup> Recommended by the students organisation IVSA

<sup>92</sup> See Tool 14 for more information.

## Expansion

If the IQM-Procedure shall be implemented to a further study programme of your higher education institution, the additional study programme needs to run through all phases of the implementation process, which are preparation, elaborating a competence model, collecting screening information, developing quality measures, and reflection. New decision-makers e.g. curriculum commission of an additional study programme need to be informed in detail, an IQM team for the additional study programme needs to be established, and resources need to be dedicated to the expansion.

However, additional study programmes of your higher education institution can benefit greatly from the experiences already gained in the pilot project. This may result in a shorter timeline for the implementation. There is already existing information- and workshop material as well as experience for effective implementation specifically for the context of your higher education institution. Decision-makers as for example, the rectorate, already support the IQM-Procedure and you can refer to already established facilitative administration. The new IQM team can also be complemented by an already experienced IQM team member of the pilot project to ensure transfer of knowledge and skills.

In expanding the IQM-Procedure to other study programmes of your institution you have to decide whether there shall be one internal quality manager who is responsible for the IQM-Procedures of all study programmes (centralized quality management) or whether there shall be different persons in charge of internal quality management for the different study programmes (decentralized quality management). The Info Box provides some information of the advantages and disadvantages of both options.

### Centralised vs. decentralised quality management approach

A centralised quality management approach benefits from the implementation experience, the close contact to decision-makers as for example the rectorate as well as to already established facilitative administration. In contrast, a decentralized quality management benefits from the close contact to decision-makers as for example curriculum commission and other stakeholders of the study programme as for example students and teachers. In a decentralized setting, we recommend a strong collaboration of all persons in charge of internal quality management to share experience and agree on a joint strategy for communicating with decision-makers as for example rectorate as well as on a joint strategy for involving administrative departments.

Finally, another aspect to consider for expanding the IQM-Procedure to other study programmes of your higher education institution is external quality assurance. It is highly recommended to be informed about the external quality assurance procedures. Which standards and/or criteria have to be met; address them in expanding the IQM-Procedure. Furthermore, clarify in advance with the external quality assurance agency what needs to be delivered in the self-evaluation report, in appendixes, etc. and in which way (e.g. obligatory templates, considering content guidelines or length restrictions)<sup>93</sup>. Also, you need to think about whether you can use already existing information material or reports of the IQM-Procedure.

<sup>93</sup> For more information please see chapter 'External Quality Assurance'.

To sum up, for sustainable implementation of the IQM-Procedure, the person in charge of internal quality management needs to integrate the IQM-Procedure on an institutional level. Hence, the person in charge of internal quality management needs to organize support from decision-makers, the quality management board, as well as, administrative departments. Additionally, sustainable implementation also means integrating the IQM-Procedure on an individual level. Hence, the person in charge of internal quality management needs to empower stakeholders to understand the motivation for the IQM-Procedure and to interpret and use the results of the survey for individual learning process.

For expanding the IQM-Procedure the experience gained in the pilot project is highly valuable and shall be used in implementing the IQM-Procedure to additional study programmes. The higher education institutions have to decide on a centralised or decentralised quality management. In both options, referring to the experience of the pilot project is highly recommended.

So far we have discussed the topic of internal quality management. In the next section we provide some information on how to report for external quality assurance.

## How to report for external quality assurance

### What is this chapter about?

- ➔ Relevance and context of self-assessment reports for external quality assurance
- ➔ Considerations for reporting in general and reporting of the IQM-procedure as part of self-assessment reports

### Self-assessment reports

When we talk about reporting in external quality assurance two types of reports are usually meant: (1) the self-assessment-report of the higher education institution and (2) the published report provided by the peers.

The focus of this chapter is on the self-assessment report of the higher education institution as it is the primary information source for external reviewers. Based on the report as well as the information and evidence gathered at the site-visit the reviewers evaluate the subject (e.g. programme, institution) against the standards/criteria.

The requirements for self-assessment reports depend on the policy of the quality assurance agency: it might provide a guideline for the structure of the report, an obligatory template, length restrictions or more general advice on conducting the report, together with a deadline for submission to the agency.

In general, the focus of the self-assessment report is determined by the subject, e.g. a study programme or quality management system of the institution, of the external quality assurance procedure. Reporting about the implemented IQM-procedure would thus be only one part in a self-assessment report.

In the following, we mention (1) some general aspects you should keep in mind when writing self-assessment reports for external quality assurance and (2) aspects in relation to the documentation of the IQM-procedure.

### General considerations for writing self-assessment reports

- **What is the purpose of the report?**

The self-assessment report is the primary information source for panel members. It should therefore provide a concise description of the assessed subject. 'Self-assessment' means that the report should furthermore provide as much analysis and evaluation about the subject as possible, considering not only the current situation of the assessed subject (descriptive parts of the report), but also the suggestions for improvement, if any (self-assessment parts of the report).

- **Who is the audience of the report?**

From the perspective of external quality assurance important audiences are the panel members, the coordinator from the agency as well as the agencies board, which takes the final decision. It is recommended to communicate the report internally to all members of the institution. For transparency reasons you might even consider to inform further external stakeholder groups and publish the report online.

- **What information is relevant?**

We recommend to put yourself in the position of a panel member for anticipating what is relevant to understand your institution, the study programme, etc. and to assess it against the given standards/criteria. This might help you to keep the balance between detailed and complex descriptions of internal processes, systems, etc. and what is enough for panel members to put themselves in to context. Consider also how information can be provided comprehensibly. For example, an overview of a system or a process provided in a figure might be more helpful than a long running text.

- **Which existing information and documents could be used?**

Check out disposable information and documents (e.g. annual reports, internal reports about quality management measures) to minimise extra work for reporting. You might decide to add, for example basic strategic documents, curricula, existing internal procedures related to the subject of the evaluation, in an appendix and include the most relevant information in the report body.

- **Who and how will it be written – writing process?**

Think about the project management of the writing process. For example, define in advance the responsibilities for content delivery, editing and revising. It is advisable that stakeholders (staff and students in the institution) are involved in conducting the report, e.g. by revising and endorsing the information supplied in the self-assessment report.

## Reporting about the IQM-procedure within the self-assessment report

The relevance of the single aspects provided for reporting about the IQM-procedure might differ depending on the external quality assurance approach, e.g. accreditation or quality audit.

### Relevance of the IQM-Procedure in the self-assessment report

In reporting for a programme accreditation the IQM-procedure might be relevant to show how criteria for quality management of a specific study programme or the definition of competences, probably in relation to the European Qualification Framework (EQR) or national frameworks are addressed. In a report for a quality audit of the internal quality management system the IQM-procedure might be relevant as one measure in the overall quality management system to assure the quality of teaching and learning at the institution.

- **Comprehensible description of the procedure:** Describe how the competence-based evaluation of your study programme works. Keep in mind the quality cycle (Plan-Do-Check-Act): What is planned? How is it done? What are the results/outcomes? How does the procedure provide for continuous improvement of competence-based teaching and learning? What needs to be adapted? Keep in mind the audience (external peers) you are documenting for. As a starting point, Tool 1 'Information material for decision-makers' can be used and extend by specific information on your institution.
- **Analysis and reflection:** Reflect why you are using this procedure at your institution, what are its strengths and weaknesses as well as future plans for improvement of the procedure. For further information on general arguments, see chapter 'Introduction' and chapter 'Preparation'.



- **Evidence:** Use existing information and data to show evidence for the implemented procedure and how it leads to improvement. For providing evidence, you can use information material of the Toolkit as well as further internal documentation, e.g. handbooks, guidelines, monitoring results. Relevant tools from the Toolkit might be: Tool 1, as well as your elaborated theoretical competence model, the report of Step 2 on the screening information, or the information material of Step 3 where you inform stakeholders about initiated measures.
- **Outcomes and consequences:** Provide outcomes of the IQM-procedure and show what follow-up measures were taken, e.g. changes in teaching methods, specific evaluation measures, further actions planned.
- **Publishing of results of external quality assurance:** Keep in mind that decisions and reports of external quality assurance usually have to be published by the agencies and the HEIs themselves – at least if there is no prohibition at national level.





# CONCLUDING THOUGHTS

Utilisation and change in people and organisations



# CONCLUDING THOUGHTS

## Utilisation and change in people and organisations

This handbook aims at enhancing and assuring high quality in competence-based higher education. The IQM-Procedure fosters a 'learning organisation'. However, it is not 'the organisation' who is learning, but the individuals. At the end of our handbook we want to add three concluding thoughts on this topic:

First, how can the IQM-procedure be of use for an organization and for individuals? We provide four answers by introducing four types of utilisation.

Second, how you are thinking influences your use of feedback: We provide a short excursion to psychology.

Third, how organizations learn from feedback: We provide a short excursion to organization development.

### The utilisation of the IQM-Procedure

The utilisation of quality management activities is highly relevant and often discussed topic<sup>94</sup>. The discussion is often with a focus on the use of **results** and to be more specific on the **direct use** of results; for example, how results are used for generating working theories, decision-making or problem solving. This kind of use is also called 'knowledge for action' and stakeholders can more or less easily see the consequences of quality management activities. However, results often are also of **indirect use** because they influence stakeholders thinking and understanding of a subject, also called, 'knowledge for understanding'. Indirect use cannot be recognized easily and hence often is not discussed. A third type of use is **legitimate or symbolic use**. Results are often used to legitimize measures and to enhance reputation, e.g. in case of audits or accreditation.

So far we have talked about the use of results and not only results have an impact but also the quality management **process**, e.g. stakeholders consciously reflect competences, as well as the teaching and learning processes or there is increased communication between stakeholders about competence-based teaching.

**In summary**, the IQM-Procedure is useful for an organisation because knowledge for action can be gained (direct use) and it can legitimize measures or enhance reputation (legitimate/symbolic use). Furthermore, the IQM-Procedure is useful for individuals because stakeholders receive the results (direct and indirect use) and the procedure itself triggers thinking about competence-based higher education (process use).

| Types of utilisation  |                            |   |
|-----------------------|----------------------------|---|
| <b>Use of results</b> | Direct use                 | Knowledge for action  |
|                       | Indirect use               | Knowledge for understanding                                     |
|                       | Legitimate or symbolic use | Legitimise programme, enhance reputation                        |
| <b>Use of process</b> | Process use                | Quality management process itself has an effect on stakeholders |

94 Bergsmann & Spiel (2009)

## How your thinking influences your use of feedback: individuals taking feedback.

When you receive **positive feedback** which of the following thoughts come to your mind?

- 'I did a good job; I am talented in doing such things.'
- 'I did a good job, because I made an effort in doing so.'
- 'This is an easy task; it does not really depend on what I do.'
- 'I was lucky; it does not really depend on what I do.'

The first above mentioned thought fosters self-esteem; the second thought also supports learning and positive development: People who are thinking they made an effort tend to use the feedback to reflect their effort. These people are more likely to make an effort to be successful again. The third and fourth above mentioned thought often do not result in the use of the feedback for further improvement because persons think that their action is not linked to the positive result.

Let us move on with the thought experiment to **negative feedback**. What do you think?

- 'I did not do a good job; I am *not* talented in doing such things'.
- 'I did not do a good job because I made *no* effort in doing so'.
- 'This is a difficult task; it does not really depend on what I do (this is because there is not enough money, time, ...)'.
- 'I had bad luck; it does not really depend on what I do'.

The first thought does not result in improvement because people often even do not try; and worse, this thought can damage people's self-esteem because they might think that they cannot do anything about it. To protect their self-esteem, some people ignore the results, doubt the results' validity or discredit the whole quality management procedure. The third and fourth above mentioned thought often also do not result in the use of the feedback for further improvement because people think that their action is not linked to the positive result.

It is only the second thought that is likely to support learning and positive development. People who think they did not try hard enough tend to use the feedback to reflect their results and to think about improvement – provided they value the topic.

The answers may seem like a random sample; however, they represent a systematic approach in attributing causes to a result or, in our context, to feedback. This approach is called **attribution theory**<sup>95</sup>. See the table 'Weiner's Attribution Theory' for further details.

**If people resist in using the results** from the IQM-Procedure for quality enhancement, you should think about the above mentioned attribution theory, as well as how you can help people to attribute results to their effort and to link their action with the feedback. Sometimes you only have to provide attribution theory to help people reflecting their attribution style.

95 Weiner (1985); Weiner et al.(1971)

| Weiner's Attribution Theory |          |  |   |
|-----------------------------|----------|--|---|
|                             |          | Stable   | Unstable  |
| Locus of control            | Internal | <b>Ability</b><br>'I am talented'<br>'I am not talented'                       | <b>Effort</b><br>'I made an effort'<br>'I did not make an effort'   |
|                             | External | <b>Task difficulty</b><br>'This is an easy task'<br>'This is a difficult task' | <b>Luck/Bad Luck</b><br>'I was just lucky'<br>'I just had bad luck' |

### How organisations can learn from feedback: organisations taking feedback

If organizations receive a negative feedback and detect problems (e.g. student did not acquire intended competences) they think about a solution. Simply put, there are two perspectives to handle problems<sup>96</sup>:

One perspective is about focusing on people and on the guilt of individuals: 'Let us find the one who is responsible for the problem.' Punishment is a consequence; mistakes are more likely to be concealed and innovation is more likely to be impeded because people do not take any risks.

The other way is about focusing on a system and on system quality: 'What happened? Let us talk about the feedback and learn from it'. Resolution is the consequence; feedback is more likely to be discussed; lessons learned are put centre stage. People feel responsible for system quality.

If you are the chair of a discussion you can use the following questions and formulations to foster system perspective and responsibility:

- Are there any system or structural issues which facilitate problems/mistakes? (system oriented)
- What happened exactly? Let us analyse the situation.
- What can we do about it?
- Let us talk about the problem and learn from it!

<sup>96</sup> Spindler (2009, p. 273)



Avoid following questions and formulations which foster a personal perspective and talking about individual guilt:

- Who is responsible for the problem/mistake (person oriented)?
- What can you do about it?
- Why didn't you tell us in advance?

You can also use the subsequent figure in a meeting to illustrate the two perspectives and that you aim at improving system quality.

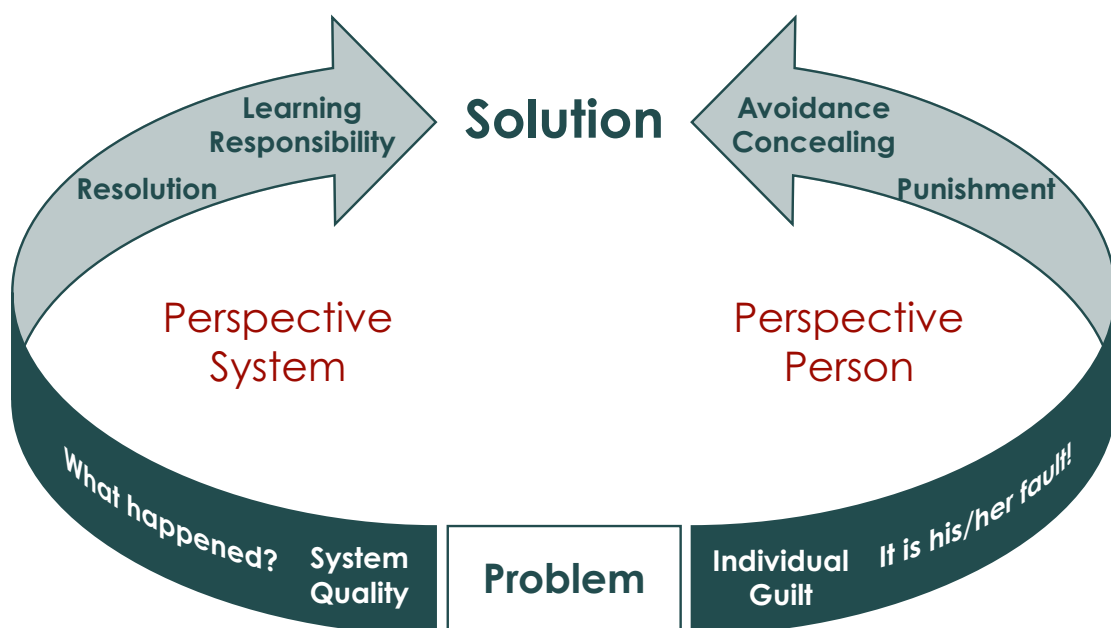


Figure 9: Organisations Taking Feedback (according to Spindler, 2009, p. 273).



ABBREVIATIONS  
REFERENCES  
ANNEX

# ABBREVIATIONS

- **DeGEval** – Gesellschaft für Evaluation e.V.
- **ECTS** – European Credit Transfer and accumulation System
- **EHEA** – European Higher Education Area
- **EI** – Education International
- **ENQA** – European Association for Quality Assurance in Higher Education
- **EQAR** – European Quality Assurance Register for Higher Education
- **ESG** – Standards and guidelines for quality assurance in the European Higher Education Area
- **ESU** – European Students Union
- **ETER** – European Tertiary Education Register
- **EUA** – European University Association
- **EURASHE** – European Association of Institutions in Higher Education
- **IQA** – Internal Quality Assurance
- **IQM** – Internal Quality Management
- **JCSEE** (standards) – Joint Committee on Standards for Educational Evaluation
- **PDCA Cycle** – Plan-Do-Check-Act Cycle
- **SOLO** (taxonomy) – Structure of Observed Learning Outcomes
- **VET** – Vocational Education and Training

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# ANNEX

## ANNEX 1: ESG – Summary

In the following we present the summary of the standards from the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG, 2015, p. 25-27).

### Part 1: Standards for internal quality assurance

#### 1.1 Policy for quality assurance

Institutions should have a policy for quality assurance that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes, while involving external stakeholders.

#### 1.2 Design and approval of programmes

Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes. The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.

#### 1.3 Student-centred learning, teaching and assessment

Institutions should ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach.

#### 1.4 Student admission, progression, recognition and certification

Institutions should consistently apply pre-defined and published regulations covering all phases of the student 'life cycle', e.g. student admission, progression, recognition and certification.

#### 1.5 Teaching staff

Institutions should assure themselves of the competence of their teachers. They should apply fair and transparent processes for the recruitment and development of the staff.

#### 1.6 Learning resources and student support

Institutions should have appropriate funding for learning and teaching activities and ensure that adequate and readily accessible learning resources and student support are provided.

#### 1.7 Information management

Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes and other activities.

#### 1.8 Public information

Institutions should publish information about their activities, including programmes, which is clear, accurate, objective, up-to date and readily accessible.

### **1.9 On-going monitoring and periodic review of programmes**

Institutions should monitor and periodically review their programmes to ensure that they achieve the objectives set for them and respond to the needs of students and society. These reviews should lead to continuous improvement of the programme. Any action planned or taken as a result should be communicated to all those concerned.

### **1.10 Cyclical external quality assurance**

Institutions should undergo external quality assurance in line with the ESG on a cyclical basis.

## **Part 2: Standards for external quality assurance**

### **2.1 Consideration of internal quality assurance**

External quality assurance should address the effectiveness of the internal quality assurance described in Part 1 of the ESG.

### **2.2 Designing methodologies fit for purpose**

External quality assurance should be defined and designed specifically to ensure its fitness to achieve the aims and objectives set for it, while taking into account relevant regulations. Stakeholders should be involved in its design and continuous improvement.

### **2.3 Implementing processes**

External quality assurance processes should be reliable, useful, pre-defined, implemented consistently and published. They include

- a self-assessment or equivalent;
- an external assessment normally including a site visit;
- a report resulting from the external assessment;
- a consistent follow-up.

### **2.4 Peer-review experts**

External quality assurance should be carried out by groups of external experts that include (a) student member(s).

### **2.5 Criteria for outcomes**

Any outcomes or judgements made as the result of external quality assurance should be based on explicit and published criteria that are applied consistently, irrespective of whether the process leads to a formal decision.

### **2.6 Reporting**

Full reports by the experts should be published, clear and accessible to the academic community, external partners and other interested individuals. If the agency takes any formal decision based on the reports, the decision should be published together with the report.

### **2.7 Complaints and appeals**

Complaints and appeals processes should be clearly defined as part of the design of external quality assurance processes and communicated to the institutions.

## **Part 3: Standards for quality assurance agencies**

### **3.1 Activities, policy and processes for quality assurance**

Agencies should undertake external quality assurance activities as defined in Part 2 of the ESG on a regular basis. They should have clear and explicit goals and objectives that are part of their publicly available mission statement. These should translate into the daily work of the agency. Agencies should ensure the involvement of stakeholders in their governance and work.

### **3.2 Official status**

Agencies should have an established legal basis and should be formally recognised as quality assurance agencies by competent public authorities.

### **3.3 Independence**

Agencies should be independent and act autonomously. They should have full responsibility for their operations and the outcomes of those operations without third party influence.

### **3.4 Thematic analysis**

Agencies should regularly publish reports that describe and analyse the general findings of their external quality assurance activities.

### **3.5 Resources**

Agencies should have adequate and appropriate resources, both human and financial, to carry out their work.

### **3.6 Internal quality assurance and professional conduct**

Agencies should have in place processes for internal quality assurance related to defining, assuring and enhancing the quality and integrity of their activities.

### **3.7 Cyclical external review of agencies**

Agencies should undergo an external review at least once every five years in order to demonstrate their compliance with the ESG.

## ANNEX 2: Competence Levels

### **Please consider:**

The formulation of competence levels is part of a work sheet that was submitted to a peer-reviewed journal.

### **Reference work sheet:**

Bergsmann, E., Klug, J., Först, N., Burger, C., & Spiel, C. (submitted). *The Competence Screening Questionnaire for Higher Education: A framework for multiple domains.*

The competence levels will be available after publication in a peer-reviewed journal.





## ANNEX 3: Timelines

In this Annex we present a suggested timeline for the implementation process of the IQM-Procedure and for the subsequent routine operations of the IQM-Procedure. The timelines might differ from one institution to another. Therefore, we want to give you an example which you can use as a reference in planning the timelines for the implementation and for the routine operations of the IQM-Procedure at your higher education institution.

### Timeline for the implementation process

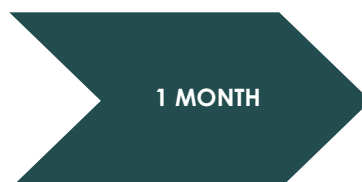
The Timeline stretches over approximately two years for the implementation process and approximately one year for the subsequent routine operations of the IQM-Procedure.

Our estimated timeline for the implementation process is about four months for preparation, six months for each of the three steps of the IQM-procedure and about two months for the reflection phase.

Figure 10 provides an overview whereby each box represents a month. The information in the boxes is explained in more detail in the chapters on implementing the IQM-Procedure.

### Timeline for the routine IQM-Procedure

For the subsequent routine IQM-Procedure we estimate one month for preparation and Step 1, five months for Step 2 and 3 and one month for the reflection. Compared to the implementation timeline, the timeline for the preparation phase and for Step 1 of the routine operation is much shorter. This is because the main preparation tasks as well as developing the theoretical competence model are done in the implementation process. The preparation and Step 1 can take longer if there is a change in the decision-maker positions or if competences need to be adapted to new developments. Step 2, Step 3, and the reflection might become shorter in the subsequent years than they are in the implementation phase because of the already gained experience (e.g. questionnaire does not need pilot testing any more).



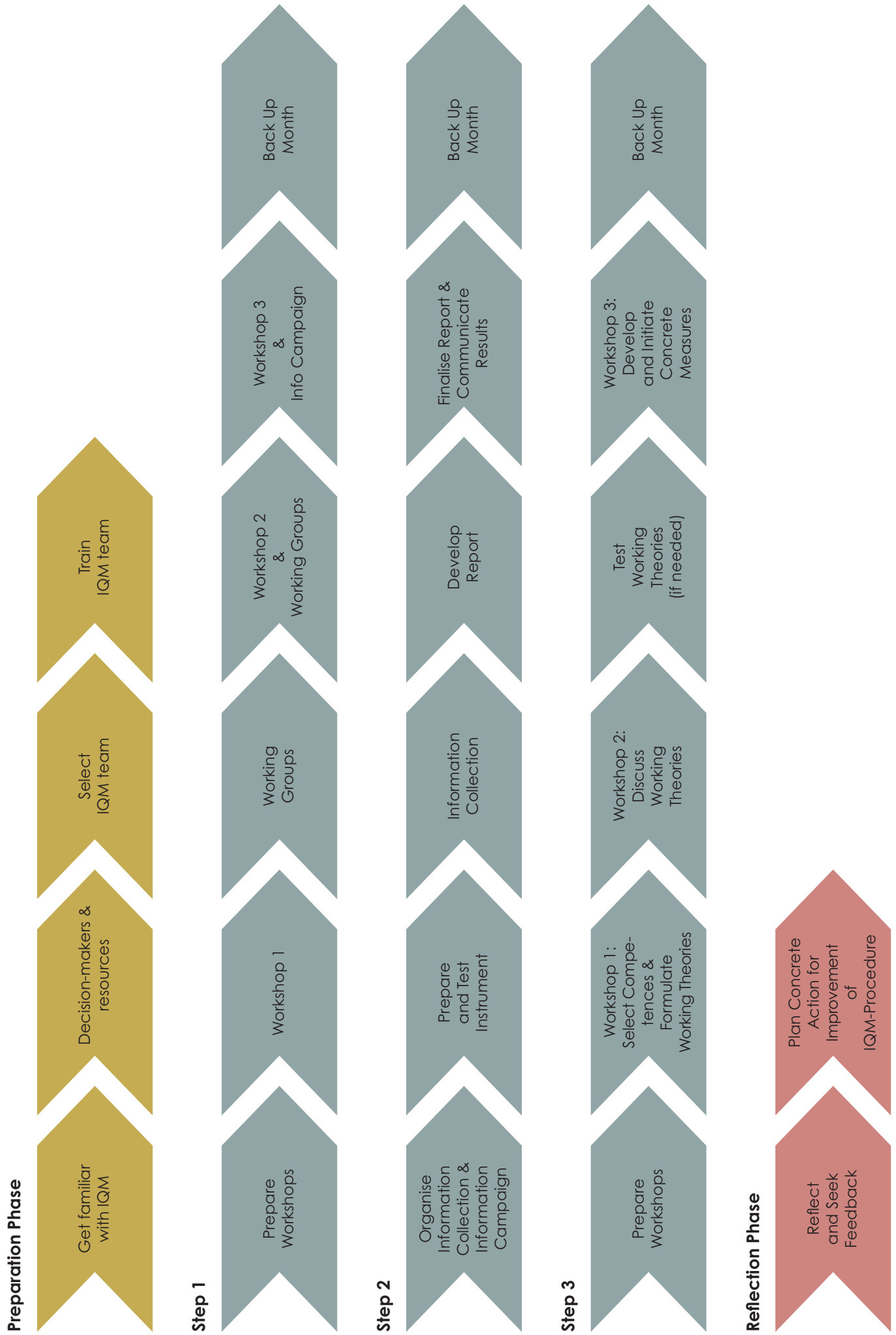


Figure 10: Suggested Timeline for Implementing the IQM-Procedure







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