Good practices of learning outcome assessment

Results of an investigation made on behalf of the ENAEE Label Committee

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Reminding the essentials

- **Outcome oriented accreditation of programmes is based on the provision of evidence which demonstrates that all required and intended programme and learning outcomes are achieved by all students who graduate**

- **Programme providers have to gain and deliver respective evidences, taking into account requirements from accreditors/agencies**

Question: How detailed should the requirements be?

The accreditation decision

- **External peers as members of accreditation panels have to evaluate and decide whether provided evidences are satisfactory in numbers and convincing in quality/credibility**

- **The „Best practice in Engineering accreditation" document, signed by ENAEE and the IEA in 2017, shows a high level of agreement concerning the accreditation process in general**

Questions:

How should the evaluation and decision processes be structured in detail?

How must the evaluators be qualified to guarantee consistency of decisions?

Learning outcome assessment

- Successfully achieved learning outcomes should be demonstrated and assessed by appropriate approaches:

- **Preferably direct methods, where performance can be measured/ observed and graded**

- e.g. tests, written or oral exam, lab experiments and exercises, thesis work or project artefacts, presentations …

Challenge:

It is easier to assess knowledge and practical skills than higher level cognitive or social skills and competences or, even more, attitudes and values.

Supporting approaches of LO assessment

■ **Indirect methods, where subjective impressions are taken into account: e.g.**

- **Self assessment of students,**

- **peer assessment and observations of teaching staff,**

- **assessment by external evaluators,**

- **graduate questionnaires or interviews,**

- **feedback from employers**

Input parameter as additional indicators

- **Indicators which can inform about a high probability that intended LO's will be achieved, e.g.**

- Provision of activating learning situations and environments like group work, labs, projects, collaboration with industry, internships, service learning, involvement in research activities, extra curricular activities

- Qualifications and research and practice experiences of teaching staff

- Mentoring and student advice provisions

- Ressources: Up-to-date facilities and equipment

- Student recruitment and progression

Identification of good practice of ENAEE member agencies: Investigation on behalf of the ENAEE Label Committee (LC)

Reasons

- **Ensuring consistency of ENAEE authorisations by ENAAE LC and AC**

- **Improving quality of LO assessment by disseminating good practice**

- **Adapting new approaches like online programmes, online assessment and accreditation, assessment and recognition of prior learning**

- **Contributing to evaluator qualification and training**

- **Specifying or updating ENAEE and agencies requirements**

Investigation based on questionnaire to ENAEE member agencies

- Replies received from 8 agencies, supplemented by links to relevant guidelines, documents and forms

Here some selected results and examples of good practice focusing on

- Requirements of accreditation agencies
- Approaches of LO assessment and requested evidences
- Review and evaluation process
- Qualification and training of reviewers
- Information of programme providers

Requirements of accreditation agencies

Requirements of agencies to programme providers are usually embedded in manuals, report forms and guidelines for the self-assessment review

Examples of good practice:

- **Request for detailed programme aims and intended learning outcomes, transferring generic ENAEE or national outcome standards into subject and programme related (measurable) learning outcomes**

- **Request for matrices relating intended learning outcomes to programme aims**

- **Request for matrices relating provided course units/modules to intended learning outcomes**

- **Request of an overview, which evidences will be provided to demonstrate achievement of every learning outcome and the programme aims**

Approaches of LO assessment and requested evidences

- All agencies require a module catalogue and the description of all mandatory and optional modules and additional learning offers the curriculum of a certain programme

Good practice examples require

- **Module descriptions, relating module learning outcomes, content, learning situation and activities and assessment approaches (constructive alignment)**

- **Rubrics, describing expected performances demonstrating the (scored) achievement of intended learning outcomes**

- **Particular evidences like written exam questions and results, questions and minutes of oral exams, lab assignments and results, project artefacts, thesis work, teamwork descriptions and reflections, internship results ..**

- **In addition results of indirect assessment approaches and/or in-put parameters**

Review and evaluation process

- Still big differences in the duration of site visits and evaluations, from 1 to 3 days, with a tendency that in short visits the results of LO assessments are not properly checked and evaluated

Good practice embraces

- **Time slot of at least half a day to check provided evidences of achieved learning outcomes and possibilities to interview teaching staff and students**

- **Careful evaluation of evidences before the site visit**

- **Systematic review and possibly scoring to which extent each of the intended outcomes is achieved**

- **Feedback from stakeholders, sometimes focusing on specific outcomes**

- **Evaluation forms guiding the evaluation process of the accreditors**

Qualification and training of reviewers

- Accreditation panels have to decide whether provided evidences are credible and satisfactory. To ensure consistency of the judgement within an agency and between agencies a training is necessary

Good practice examples

- **Provision of regular seminars for reviewers, with a focus on outcomes based accreditation and outcome assessment approaches**

- **Specific training of accreditation panels before the start of an accreditation process**

- **Mentoring for newly appointed members of accreditation panels**

Information of programme providers

- HEIs and programme providers should be comprehensively informed about the concept of outcome based accreditation of programmes and its contribution to quality assurance and management

Good practices observed

- **Publicly available and regularly updated documents, guidelines and forms regarding the accreditation process and its requirements**

- **Annual conferences and workshops of agencies inviting HEI's and engineering education stakeholders for a continuous discourse on results and improvement of engineering programmes and accreditation practice**

Questions for discussion

- How can ENAEE and the agencies support the dissemination and application of good practice in learning outcome assessment?

- Should ENAEE or the agencies specify requirements or recommendations for appropriate evidences related to the various expected learning outcomes?

- Can you contribute additional examples of good practice in LO assessment?

Thank you for comments

- If not in this session then to my mail address

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