Quality assurance in courses and programs

Joakim Lilliesköld
“Quality can not be inspected into a product or service; it must be built into it.”

W. Edwards Deming
How do we try to build quality at EE

Information from a lot of sources:
Surveys: Alumni (including employment), mid of education, gender, employee, etc
Course evaluations/course analysis
Student board report (report their result at GRU råd)
Mentors from Global impact course
Student results from Ladok
Number of applications
Number of degrees

Meetings:
Breakfast with student union (3 times/semester)
GRU-råd (director of studies, admin, program directors, students 4 times/semester)
Board of direction meeting (twice a month)
Strategic advisory group (industry, teachers, students, others from KTH)
Faculty conference (all teachers from the school)
GRU conference (all teachers in the program)
PA meetings (KTH level)
Who gives feedback on the course evaluation?

According to our rules:
Course analysis shall within one month after the course ended has been shared with the director of first and second cycle studies and head of the school

KTH started using LEQ, a model with a survey and a workshop where teachers together share their results and discuss improvements.
Sharing analysis on the web
Examinator inom program och kursansvarig (period och år)

Obligatorisk CDIO-moment som ingår i kursen
Andra programmoment som ingår i kursen
Form av examination och när den utförs
Antal reg. studenter

Examinationsgrad; av aktiva (totalt) vid första ex-tillfället.
Betygsfördelning. Senare ex-grad kan dessutom anges.
Förändringar som införs i årets kurs (exempel fr kursanalys)
Kursanalys (ladda upp dokumentet)

Jan Scheffel

82 (77)
P:46, F:7 (av de aktiva)

Jan Scheffel

92 (77)
P:46, F:2 (av de aktiva)

Skrivande: grundl äggande tekniskt skrivande (IMRAD)

Muntlig presentation: genomgång, grunder + del av examination

Hederskodex (behandlar bl a plagiat) ska läsas och studenten ska bekräfta att han/hon läst denna.

92 (84)
P:46, F:6

Grupparbete: min grupp obstacle varje kursvecka

Intro-föreläsning till SU-kursen Lärande som professionellt uppdrag

Jan Scheffel

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IKT: Intro till Maple, Excel.
I KTH Social ska profil skapas och inlägg göras där
Hederskodex lästs.

Dokumenten i "Kursutveckling" tillgängliga på KTH Social för första gången

Kursanalys 2013

Kursanalys 2015

Kursanalys 2014

• Alumnistudenter kommer och berättar om arbetslivet som CL-ingenjör
• En kort sammanfattning ges nu i slutet av varje föreläsning
• Flera hemuppgifter har förnyats
• Feedback på minigrupparbetet har utökats; de genomgås nu lite utförligare under 3:e fredagstimmen
• Övningslärare åter rekryterade från CL-programmet
• Utökning av genomgång av Maple
• Sista minigrupparbetet förbättrat

• Hederskodex ( ska godkännas av alla)
• Maple-övningar nu i halvklass
How do we try to build quality at EE

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“Without data you’re just another person with an opinion.”

- W. Edwards Deming,
Data Scientist
Strenghts

GRU is always on the agenda

A lot of discussion and feedback (that can be used to lift the level of all courses – but we always have many sources to a problem)

Strong PA:s, thus we can often change problems already for the students affected by them

Strong culture
Culture eats Process for breakfast!

QA project X
Problem

Documentation of the development process is poor, documentation of result is hard to find, it is in all minutes from the meetings or PowerPoint, but there is no summary.

Feedback to the sources should be improved

We are lacking the authority of a program committee

We could probably be more strategic

All schools have their own approach (but I do not think that is a problem)
Obviously we are not alone, KTH is looking at implementing program development plans.
A lot of experience

- KTH’s experience from UKÄ and EAE = extensive analysis that required a lot of effort, but what was the outcome?

- Experience from Chalmers pilot evaluation of their Programme Review Framework shows a need to differentiate between program level and university level:
  “The programme level review needs to have a limited scope to ensure that it does not get distracted by artefacts of a wider issue and try to provide recommendations to treat symptoms rather than root cause.” (Malmqvist et al, 2015).

Challenge: How can we build a QA process that does not drain the organisations energy
University level

Who owns and engage in the question on university level? What is university level?

Also, do not build from scratch, must build a system that use what is already in place, and maybe some systems must adapt

• Environment system (Sustainability questions)
• Gender equality system
• etc.
Program analysis process (some questions we need to ask)

- How much time can a program director spend on the program analysis? 2–3 days?

- What data and which documents must be available if it only should take 2–3 days to do a analysis.

- The program analysis must be short: 1–2 pages plus appendix!

- Is there a system for feedback?
  - From other PA: s and from KTH
Improvement engine

1. Decide what you want to achieve
2. Go! Notice what’s getting in the way
3. Remove the biggest impediment
1. Short description of program status (summary of data)

2. What has happened since last year

3. Backlog – list identified problems and improvements possibilities

4. Which prioritized improvements should be in focus this year (1–3 with a plan)

Appendix:

- Data with trends (taken from VIS)
- Program development plan (PA:s work document): describing the program in relation to defined quality criteria regarding content, progression and CDIO - approach, connected masters program, trends in the field, etc.
The most important thing is not your process.
The most important thing is your process to improve your process.
Failure Recovery is more important than Failure Avoidance

Henrik Kniberg