2 Probing and Proving Competence

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Abstract

Since 1997 the Amsterdam Faculty of Education (EFA) has been officially recognised as a Dutch centre for experimental teacher education. EFA is a co-operation institute of the Hogeschool Inholland and the Hogeschool of Amsterdam.

In this paper we will describe the essentials of an assessment system and a web-based portfolio system that should help students take responsibility for their learning and their proving competence at three consecutive integrative assessments. The whole Faculty with 3500 students has embarked on a transition from "supply driven education and assessing whether the supply is absorbed by the student" to "demand driven education and challenging students to prove in their own way that they are competent".

To support the understanding of portfolio use, the new concept of curriculum for educating higher-level professionals is discussed briefly. We will stress the aspect that a new educational concept can only be successful in implementation if the assessment system is correspondingly altered. ICT plays an important role in this change.

The portfolio system helps people, under their own responsibility, to collect materials that can be used and re-used at different times for different purposes:

- learning (probing your learning processes, often with help of feedback by other people)
- assessing (proving competence, towards an outside authority; e.g. to gain admission to the next phase of the course, or to get a job, or to get admission to a next level of job)
- sharing (products and expertise should be part of a knowledge base; "unknown" people should be able to find them)

The nice thing about web-based portfolio is that you can use the same materials for those different purposes. Materials over the years can be ordered at different times for different purposes. For each purpose you pick a selection of the materials and cement them together (with a storyline) into a structure that serves the purpose.

The portfolio system is now in use for three years. Information can be found at the EFA publication site: http://www.efa.nl/publicaties/english.html

1. Introduction

We will start with an example before moving into abstractions.

At the Amsterdam Faculty of Education a member of the teaching staff maintains her own portfolio. It is part of the web-based system of portfolios of all teachers and students.

Figure 1: Menu bar of the EFA portfolio system

In the competence-section of her portfolio this teacher, among other things, reflects on the competencies that are needed to be a good coach of students who have to take responsibility. That is: responsibility for their own learning process and for the way in which in the future they are going to prove their competence to an assessment committee. This committee guards the entrance into the next phase of their study route or into the professional career.

Her analysis in her teacher portfolio induces reflections about the growth of her own competence in this area. She uses examples of feedback she got from students, she shares examples of teaching materials that she created or adapted, she experiments with creative multimedia forms of information and representation, and she uses metaphors to organise the material in such a way that growth and dilemmas become visible.

The building stones for these reflections however, -her products, the feedback she got-, are put into the products-section. There she collects those objects, orders them and provides them with short explanatory descriptions. When needed in the arguments under "competence", a simple hyperlink suffices.

Her portfolio is real, it is meant to stimulate her growth, because she considers herself as much a learner as a teacher. At the same time her portfolio is an example for students who still have to learn the delicate skills of reflection as a catalyst for learning. The white link "Portfolio" on the right of the menu in fig. 1 gives access to the portfolios of the other members of the community of students and teachers. With one restriction: every owner of a portfolio can close any part of his portfolio for strange eyes. But, and that is important, he

can then choose specific persons and make that part readable again, just only for those people. It is one of the tools in the tools-section.

A student who wants admission to a next phase in her study route, -e.g. a 6-month supervised teaching job connected to a demand driven educational arrangement from the Faculty-, has to show that she can handle the basic complex situations on the job. She has to show a basic competence. The Faculty has formulated criteria for this. That is done in such a way that there is much room for the applicant to design her own idiosyncratic proof that shows her specific identity and professionalism. However, these criteria are not built into the portfolio system. It is the student who has to be creative and convincing. This is shown in her selection of materials that have been collected, and in the way these building blocks have been cemented together.

The presentations-section is meant to construct this kind of assessment portfolio. And hyperlinks are used to point to the building blocks in the product-section and the competence-section. To be able to make an appropriate selection at different moments and for different purposes in their learning life, it is evident that students must continuously collect materials. It could be that a proof of competence growth, or the ability to adapt to changing circumstances, has to show a historic sequence over many years.

2. Collecting things for different purposes

So, 'portfolio' is about collecting. Collecting yourself for different purposes. A portfolio system helps people, under their own responsibility, to collect materials that can be used and re-used at different times for different purposes:

- ***probing***

  monitoring your learning processes, providing argumentation to choices that must be made, acquiring higher level metacognitive skills, asking and using feedback by others, e.g. mentor educator, instructor or peer students/workers

- ***proving***

  towards an outside authority; e.g. to gain admission to the next phase of the course, or to get a job, or to get admission to a next level of job

- ***sharing***

  products and expertise should be part of a knowledge base; "unknown" people should be able to find them

The nice thing about a web-based portfolio is that you can use the same materials for those different purposes. Materials over the years can be ordered at different times for different purposes. For each purpose you pick a selection of the "stones" and cement them together with a storyline into a structure that serves the purpose.

Let us look into the kind of stones that should be collected. We use a classification by Barton and Collins (1997) that is supplemented by Matthijsen, Elshout-Mohr and Van de Berg (2002).

Artefacts. Materials produced by students as a result of assignments in the curriculum. Of course, not everything has to be collected in the portfolio. It has to be useful for the purposes that the owner of the portfolio has in mind. However, it is better to collect many things, because you never know which new purpose you will think of in the future. Examples: piece of videotape, a pronunciation-test, article or paper, educational website, the result of a series of lessons given, even an answer you gave to an open question that tests comprehension.

Reproductions. These are artefacts produced outside the realm of the curriculum. They were not assigned, but they can be very important. You can very well use materials from the life as a leader of a scouting group in the portfolio of a student teacher. Maybe a newspaper wrote something on your amateur musical performance. Things like that.

Attestations. This is the feedback from others. Their opinion on your work, your knowledge, your skills, you way of co-operation. It could be just a mark on a test. It could be an written or oral evaluation of the role you played in a project. It could be an answer to an evaluation question you have put forward.

Statements. At certain moments a person should make position-statements about himself. Short and powerful. In which direction will I go? Or specifically not go. Where am I now in relation to certain competency-goals and how will I proceed? Of course, these statements can be scaffolded by hyperlinks to the artefacts, reproductions or attestations in the portfolio.

Captions. All materials in the portfolio (artefacts, reproductions, attestations, statements) should be given a meaning by short explanations to keep them connected to their source and history. Other captions could give meaning by telling about reasons why the material concerned is taken into the portfolio. Categories to structure the materials also belong to this kind of "stones". We like students to design their own system of categories.

Creations. Information is conveyed not only by text and other media like film, sound or picture. A lot of information is contained in the way the material is presented: a metaphor that is consistently used can be very convincing or enthusiasmizing, or an unexpected way of ordering the material that shows sudden insight. So, creations are discoveries and inventions in communication in educational situations using portfolio. Many inventions will be done in the future, in the gradual development of a 'portfolio-grammar', as happened to the film-grammar.

We hope that this way of looking at the content of portfolio shows how important it is for the course management not to

pre-structure and to pre-phase the portfolio of the student. They should understand that a rich environment in which to design your own idiosyncratic portfolio is a must for a lasting effect on learning and motivation. It leads to a more valid assessment. The rivalry between validity and reliability should be won by validity. We come to that in section 4.

3. A Learning Route

Let us follow the course of a student, 18 years old, coming from high school and starting with a teacher education course. He gets a Mentor teacher in a special metacognitive part of the curriculum ('Metawork') who explains that during this year you should continuously think of collecting materials that you could possibly use in an assessment session at the end of the year in which you apply for admission to the main phase of the course. In the modularised ICT-course during the first 10 weeks not only searching the Internet comes to order, but also publishing on the net. FrontPage is introduced. A personal portfolio is initialised and some materials that already have been collected during Metawork are now being placed into the portfolio. Here the ICT course ends and the Mentor teacher of Metawork carries on the stick. Students who want more advanced things in the area of web publishing can get optional courses.

So now, in Metawork, the real work begins: which things to collect, for what purpose, and which feedback do I ask from whom. A frame of reference is given in the form of the nation-wide agreed competencies of the beginning teacher.

This frame should help students in constructing story-lines that show their progress and that eventually can be used in the assessment. This activity is an efficient way to get students to gradually grasp the meaning of those competencies.

At first, the student likes it to show herself in her portfolio, that everyone can see. She likes to show off with pictures and provocative texts. Then the approaching assessment makes things serious. Your self-evaluation, supported by a cleverly ordered selection of evidence material, is scrutinised by the assessors. This could lead to a "no": not admissible yet to the assessment itself because your portfolio is incomplete or lacks the power to convince. The mentor plays a role in preventing these occurrences, but it can happen. Once you are in the assessment procedure you will have to defend yourself against critical questions on your history and its conclusive force with respect to the criteria for admission. And students find that they learn very much from this. Students even say reproachfully that the Program assesses in a competence based manner, but does not allow for enough competence oriented material to be collected. In this way the portfolio assessment exerts innovative implementation power by means of the students themselves!

In the main phase, under guidance of the Mentor teacher, there is more room for students to collect the materials that can be used to provide arguments for choices within the curriculum, to monitor your own learning process. Regularly you have to issue statements on your status on your way to certain competencies. The portfolio also provides for the means to visualise these appraisals on a time line.

In this phase students have to formulate and contract learning goals. They have to record agreements on the specifications of products that have to be delivered in dual learning-working environments. The feedback on the deliverance on the agreements, coming from other people than the student himself, can be put and fixed into the portfolio. Often the student asks for specific persons to give feedback on matters that are present in the portfolio and that are made accessible only to those few critical friends. If you want to combine the different functions of development portfolio and assessment portfolio you need to have a portfolio system that gives the owner the control on who may see what!

The criteria that control the assessments become increasingly loose when the students progresses to higher forms of professionalism. The criteria give more and more room for students to design and build their very individual proof, structured by themselves to fit their individual qualities, to make their proof most effective. It supposes a growing equivalence between assessee and assessor.

The influence of the portfolio in the assessments increases in the course of the study route, simply because there is more history present in the portfolio with which you can show, and give arguments about, professional growth.

During the study Program a student will recognise the importance of sharing products that can be used by others. Learning is connected closely to production of useful things, we believe. He will learn the conditions for effective sharing of expertise and information. By the way, often the concerned materials will not be in the portfolio itself, but at the place where they have been produced, usually an Electronic Learning Environment. In that case the portfolio contains short captions that show the essence and a hyperlink.

4. Educational Context

The most important issue is the transfer of responsibility from teacher to student. In learner centred education we consider the learning circle as the base of the educational context. An educational program must be seen as a set of facilities that can be used by the student to get to his goals as efficiently as possible.

Each learning process the student goes through, consists of, the phases of **orientation, planning, execution and evaluation**, and is guided by the competencies derived from the professional profile. See fig. 2. For students this means that in their orientation with respect to the learning and working process they take the competencies they need to acquire as their point of departure. In doing so, they are aware of the fact that at a later stage, maybe after many circles, during the

assessment they will have to demonstrate that they have actually acquired the required competencies. On the basis of that orientation, they formulate and contract concrete learning goals and activities (planning), subsequently work on useful products in a learning environment created by the program (execution), and, finally, they evaluate the degree to which those activities have contributed to the realisation of their learning goals and the acquisition of competencies. They have to re-assess their position as a part of the next orientation in the next learning circle.

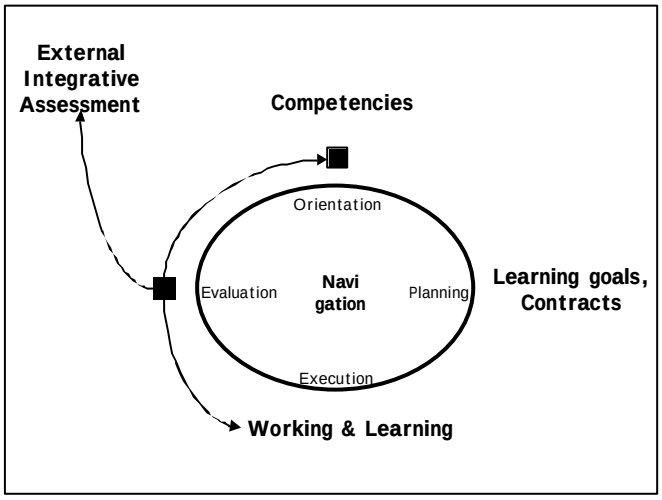

Figure 2: Facilities in a learner centred program

Also they have to keep in mind that after many circles they will have to show proof of competence at an integrative assessment session. This is a reference for the next orientation and a guide in the selection of materials that will be collected into the portfolio system.

Traditional education will think about transfer of responsibility only in the bottom part of the circle, because Orientation, Planning and Evaluation are traditionally done by the teachers. If we want to educate enterprising, risk bearing individuals who are prone to change and who will pro-actively manage change in society, then we should make a serious effort to transfer responsibility also in the other phases of the learning circle! Portfolio plays an important role in this transfer.

Educational notions with respect to constructivism, productive and authentic learning, competencies, and demand driven dynamic curricula are closely connected to this responsibility issue. We don't elaborate on this issue here.

We have put forward the thesis that an educational program must be seen as a set of facilities that can be used by the student to get to his goals as efficiently as possible. A clear formulation of competencies, understandable by students, is one of those facilities. The next one is a system that takes care of contracting learning goals en planning. Then, learning practices should be provided in which authentic learning can take place connected to useful productive work. An set of integrative assessments should be present, together with a way of communicating with students about the criteria that are being used. Each of these subjects deserves a separate paper! Here we concentrate on the portfolio facility. It should be clear that the notion of continuously collecting materials to be used for different purposes connects to all four phases of the learning circle.

It is clear that a change in concept of how to educate people must be accompanied by a corresponding change in assessment system. Students are calculating people who want to get results as efficiently as possible. So, construct the assessment system in such a way that they calculate with the important things of the new concept! Let them calculate on showing competencies in their personal most efficient way, instead to calculate on credit points.

To enable students to calculate, competence descriptions are necessary both in relation to the 'internal thermometer' (self-assessment) and in relation to the 'external thermometer' (assessment by others).

At the Amsterdam Faculty of Education there are three consecutive integrative moments of assessment during the program. For this to be possible, criteria must have been formulated for each competence, which students have to meet before they can consider themselves 'competent to undertake the main phase', 'competent to undertake the assistant teacher phase' or 'a competent and qualified teacher'.

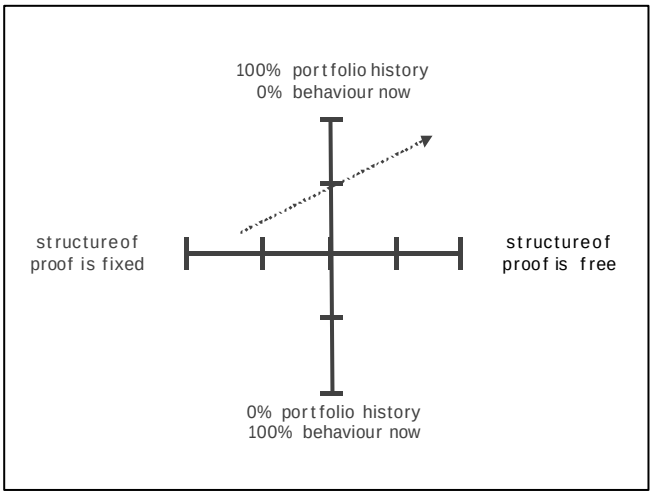

Figure 3: Dimensions of portfolio assessment

These three integrative assessments are being developed in a two-dimensional space. The parameters determine how much freedom a student will have in designing his or her own convincing way of proving competence, and which role the history from the portfolio plays in that proof. The sequence of three assessments will follow the positions indicated by the skew arrow.

An issue that is closely connected to this dimensional cross is the competition between reliability and validity of the assessment. In the case of assessment of higher professional

qualities it seems that stress on reliability is at the cost of less validity. 'Fairness' on this level means accounting for differences. See Elshout-Mohr (2000) for a elaboration on this.

We teachers must resist the temptation to prescribe the way in which competencies are proven. We are tempted because we think heavily in terms of reliability and comparability (is it because we want obsessively to keep grip on things?). A portfolio system should not be fitted with prescribed forms of proof. Of course, a Program can prescribe certain ways of proof, but that should not be built into the system. The student himself has the responsibility to comply with the demands that the Program has made.

5. Portfolio System

To conclude we offer the concept of a web based portfolio system that can be used for the many different purposes that have been mentioned until now. The portfolio system of the Amsterdam Faculty of Education, which is in use for three years now, should be seen as an previous stage in the development of this concept. At the moment a consortium of several Dutch universities and polytechnics is building a system according to the concept. A basic characteristic of the design is the focus on the individual owner, and not on the program or course or educational institute. The owner keeps up his portfolio when he uses portions of programs of other institutes and continues to use it in his professional career.

We refer to section 2 of this paper. A portfolio system helps people, under their own responsibility, to collect materials that can be used and re-used at different times for different purposes: ***probing, proving, sharing***. At this place we add: ***showing off***.

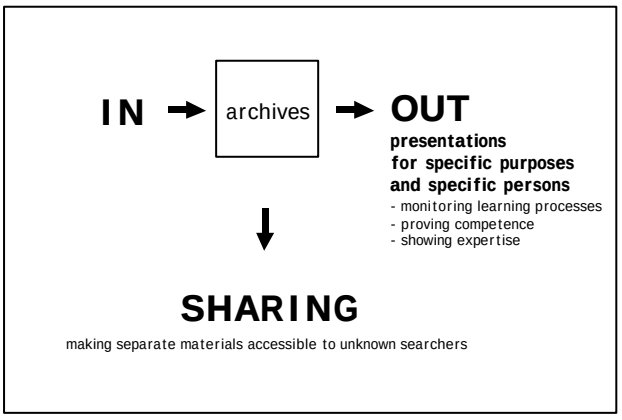

Figure 4: Portfolio system

A portfolio system consists of an "Archives" part, a "Presentations" part and an "Administration" part.

The "Archives" is a web based database in which the owner can keep, classify and find his materials. The owner can design his own classification and search system. All materials can get captions. The read and write rights are exclusively for the owner.

Using his archives the owner can construct many specific "purpose-portfolios" or "Presentations". E.g. a development portfolio, an assessment-portfolio or a show-portfolio. Functionalities connected to this part of the system include: selecting archives-material, constructing a presentation and sending a message to persons or an authority, automatically providing them with access-information. The person concerned arrives immediately in the Presentation that has been prepared for him. The owner can adjust the time window in which the "guest" will have read-access to his presentation.

A post-box is provided for feedback from the guest.

The presentation can have any form: html, tables, PowerPoint. We prefer translation to html because it gives the most control over the links to the elements in the database.

The system provides for different level owners: from no skills in web publishing to many skills. Also the use of templates is supported. This gives the educational institutes the possibility to provide, at their supporting website, students with help in constructing a presentation that should meet certain requirements. As has been said before: those templates will not be built into the system. One reason is the responsibility question, the other the fact that this system should serve many learners in many institutes and programs, and even professionals in their career.

A special kind of Presentation is the Show-portfolio. This presentation is accessible for the whole world. No invitation of guests is necessary. It is the default entrance of the owner into his own portfolio. The system provides for a search mechanism for visitors from the world.

Until now we covered *probing*, *proving* and *show*. The *sharing* is taken care of by the possibility for the owner to mark any element from his archives, by which it is offered to a knowledge management system. This system offers to the visitor-from-the-world advanced search-and-find facilities.

We will not end this paper without a few remarks on the role of ICT. Some aspects of portfolio-use that we have described can be implemented very well with a paper portfolio.

It could be smart to start with a paper portfolio. This refers to starting students but also to starting institutes. You will have to give much time to the educational implementation aspects connected to a possible shift in paradigm in thinking about educating professionals.

But you will miss a lot if you continue on paper. Sharing and Showing, at the scope we presented here, will not work on paper. And yet these aspects are closely connected to future changes in education. Offering Presentations to several specific persons at the same time will be a logistical horror. Organising your archives with database facilities like multiple categories is another thing you will miss. And last but not least, we must think of the Creations in section 2. It is about

discoveries and inventions in web publishing with respect to communication in educational situations, and with respect to showing essentials and relations in a newly convincing way.

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Links to many different portfolio sites can be found on:
http://www.efa.nl/publicaties/teksten/pf04.html
http://www.edusite.nl/portfolio