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Portfolio as an Assessment Tool

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INTRODUCTION

Our purpose with this paper is to discuss and present the use of portfolio as an assessment tool in teacher education. The work is a result of the Comenius Project *Aus der Praxix Lernen (*APL). The fundamental concepts behind this project may be found in APL Products 1 and 2 (Aus der Praxis Lernen 2005), and are also based on Fred Korthagen's theories in *Linking Practice and Theory* (Korthagen, 2001).

The use of portfolio to assess student teachers supports the fundamental concepts behind APL, that is: A realistic approach to teacher education through learning from a realistic practice. The use of portfolio in assessment, as opposed to assessment through standard examinations, promotes reflection on own learning and assissts the student in considering theoretical knowledge in the light of practical experience and vice versa. While preparing his various portfolio assignments, the student is helped to return repeatedly to the practical experiences and situations in the classroom, through his own reflection and through the feedback given both by the teacher educator and fellow students. Responding to the feedback by reworking his assignments, the student is trained to reflect on own teaching practice. There are two models especially developed to help students structure the reflection and development phases and help them link theory and practice: the ALACT model and the VESEt model. A discussion on the ALACT model may be found in APL Product 1 p.10, and APL Product 2 p.9, and on the VESEt model in APL Product 2 pp. 21-23, (Aus der Praxis Lernen, 2002-2005)

We consider the use of portfolio as an assessment tool to be a natural consequence of the goals that APL sets out to achieve, because it gives a novice teacher the possibility to develop a consciousness of own development and enables him to focus on the learning moments in his training.

This text is divided in two sections:
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SECTION ONE
A presentation and discussion of portfolio as an assessment tool

Background for the Assessment Portfolio: The Development Portfolio

To be able to present an Assessment Portfolio, the student must produce assignments and other material regularly throughout the course of study. As the student's learning develops, through feedback, reflection, mentoring, school practice, lectures, discussions and reading, the work he has produced may be reworked into new versions. All this work is collected in the student's Development Portfolio. The portfolio remains at all times the student's property and it serves as a tool for reflection and personal development for the student. It is from this collection that the student selects the work that is included in the Assessment Portfolio. (For further details and discussion on the Development Portfolio, see below)

The Assessment Portfolio

The Assessment Portfolio replaces the traditional exam and is the basis for the formal assessment at the end of the course of study. The Assessment Portfolio is a collection of texts and other material, chosen from among all the work produced by the student during the course of the study programme. The portfolio should show effort and development by the student over time. The portfolio should also show evidence of student cooperation. The student selects the assignments and other material that he wants included in the final Assessment Portfolio from among his own work in the Development Portfolio, but the selection may be guided and specified by the teaching institution. The Assessment Portfolio should demonstrate:

> **collection of texts and other material:** student teachers are expected to produce a number of texts, documents and other assignments using a variety of genres and presentation methods
> **development over time**: the texts and other material that the student produces for inclusion in the Assessment Portfolio should represent work spanning the whole period of study being assessed.
> **effort and development**: the texts and other material should demonstrate effort and development on behalf of the student. The student's work may have been revised and reworked after feedback from peers and/or tutor, and both versions may be included. Work may show effort by means of reference to both compulsory and non-compulsory experiences and texts relevant to the work.
> **student cooperation:** Cooperation is an important aspect of teacher behaviour, students should therefore cooperate in at least some of the work produced during their training. This cooperative aspect should be visible in for example peer response texts, shared planning of lessons etc.
> **reflection and personal development**: work should demonstrate student's ability and willingness to reflect on experiences in the light of previous experiences of similar type, the reflection should indicate personal development.

Reflection and personal development are terms which form the conceptual core of the use of portfolio as learning and assessment method. These terms are central in all discussion on why portfolio should be used (Paulson, Paulson & Meyer, 1991). See also APL Product 1, p.10: Realistisches Ausbildung, fünf Prinzipen, and the ALACT model (Aus der Praxis Lernen, 2005).

We believe that reflection and personal development can be stimulated and promoted through the use of portfolio, especially where the assignments and work focuses on reflection. When planning portfolio assignments, the following are worth considering:

- assignments which in particular ask for reflection and development
- meta-texts: texts commenting on own or other's assignment
- reasons for and commentaries to the text selection
- answers to questions furthering reflection, e.g.
  - What have I learned?
  - What problems have I faced?
  - How have I solved the problems?
  - Have I reached my goals?
  - In what area should I work harder?
  - What problems might appear?
  - How might I solve potential problems?
  - What are my strong points?
  - What are my specific strengths in my interaction with pupils?
  - How have I developed in the last six months?
  - What aspects of my personality might make me a good teacher?

Formative and summative assessment

Both traditional examinations and portfolio assessment are methods of evaluation. The differences lie both in the different time aspect and different methods and purposes for the evaluation. The terms *formative* and *summative* assessment may be used to describe the two purposes. A formative assessment is integrated into the learning process and has as its purpose to provide feed-back to the student on his development according to relevant demands and goals along the way. The feedback should be of assistance, should help *form* the student in the learning and development towards achieving these goals. Supervision from competent tutors as well as feedback from peers are central in this development. In formative assessment the criteria often vary depending on the tasks or the concrete situation, and the students may be included in the discussion about the criteria or evaluation procedures. Formative assessment is thus a vital step in the students's learning process. In addition, through discussions with and feedback from the students, formative assessment can disclose the need to adjust the teaching and can therefore be of assisstance to the tutor as well.

Summative assessment is a final assessment of the student's competence relative to stated goals and demands. The evaluation is separated from the teaching and from the student's learning process and will normally take place after the formal conclusion of the learning process. Summative assessment often uses normative criteria where the individual performance is evaluated in relation to those of the other students. In summative assessment the basis and the criteria for evaluation will only to a very limited degree be discussed with the students.

Portfolio assessment

Portfolio assessment may be used both for formative and summative assessment. Formative assessment is an ongoing process throughout the course of study as the student produces and collates his portfolio. As the student produces the various texts and works, they may be read by and discussed with both the tutor and fellow students and both written and oral feedback given. This feedback is an important element of the formative assessment, since it is on the basis of this feedback that the student may rework the assignments and enter into processes of reflection and development. Towards

the end of the study the student selects material from his Development Portfolio for his final Assessment Portfolio which then is subject to summative assessment.

The *formative aspect* of portfolio assessment is important for the following reasons:
- Documentation of knowlegdge becomes an integrated part of the learning process
- The student develops knowledge and learning skills over time
- It is possible for the student to document and present cognitive processes
- Reflection about own learning and development is encouraged and practicable
- Understanding and learning are encouraged rather than short term exam swat
- Supervision and feedback is provided during the course of study
- Students are encouraged to work with questions, problems and themes over time
- Students gain a proper overview more easily
- Tension connected with exams is reduced or eliminated
- Assessment may be more accurate, measuring effort, achievement and authentic learning over time
- Assessment may be linked to authentic situations where the education will be put into practice
- Assessment may cover a broader field of knowledge than possible with traditional exams
- The student has control of the material that is going to be assessed and thus control of this part of the learning process

Our experiences show that learning is enhanced both qualitatively and quantitatively with this method. This is born out by the work done by e.g. Hoel and Haugaløkken (Hoel & Haugaløkken, 2004).

SECTION TWO
A discussion on how to use the portfolio in teacher education

Our purpose in this section is to discuss and present the use of portfolio as an
assessment tool.
We will distinguish between
Development Portfolio: The student's collection of all the material he has produced during
the course of study and
Assessment Portfolio: The selected material handed in by the student for summative
assessment at the end of the course of study.

The content of the Development Portfolio

The Development Portfolio is a tool to assist the student in the practical and academic
learning and development and to link the theoretical and practical aspects of teacher
education. It is also a tool both for formative and summative assessment of the student
which combines the processes of assessment and learning. The following list illustrates
typically the kind of material that may be included in a Development Portfolio

- short texts or reflections written in response to lectures
- short texts reflecting on topics set by the tutor
- short texts or reflections written in response to workshops
- short texts or reflections written in response to reading
- short texts or reflections written in response to practice teaching experiences
- written assignments set by the tutor
- lesson plans and teaching material developed by the student
- survey of teaching materials for teaching a specific topic
- examples of pupils's works, commented on, corrected and/or not corrected
- feedback from the student's classes taught while in teaching practice
- video and other photographic material from own teaching practice
- audio material from own teaching practice
- feedback given to other students
- notes from discussions on feedback given and received
- feedback received from other students and response to such feedback
- feedback received from the tutor and response to such feedback
- diary entries reflecting on study progress
- diary entries reflecting on teaching practice

In much of the work with the portfolio we recommend using the practical tools from APL
Product 3, where tools to develop skills such as cooperation, reflection and feedback have
been developed. Look especially at APL Product 3, Elements 3 and 4: Interaction and
Reflection, (Aus der Praxis Lernen, 2005).

Deciding the topics of the assignments

Deciding the topics for assignments may be done by the tutor. The advantage is that all
the students then will have reflected on similar and central topics in their course of study.
Assignments may also have built-in choices so that the students may choose from two or
three different topics. Even a limited freedom of choice tends to make assignments easier
to complete. We also have good experience with allowing the students to formulate their
own assignments. (See also APL Product 5, Portfolio als Begleitinstrument, Aus der Praxis
Lernen, 2005) We stipulate that there must be no major thematic overlap in the various
works and that assignments must cover different fields. The variety and creativity
resulting is truly impressive. It is adviceable to provide supervision to help students
formulate good topic questions. Where the tutor feels that all students should cover

certain topics we use a combination; some assignments are set by the tutor and some are decided by the students. Alternatives may be summarized thus:
- Assignments decided by tutor
- Assignments decided by student alone or jointly with other students and with supervision from the tutor
- Assignments decided jointly by students and tutor
- Assignments combined from all or some of the above

Working as co-authors

Much of the work produced by academic students is done individually with little or no assistance from others.Working individually is a perfectly acceptable method and some students will prefer this since it is what they are used to. However, teacher trainees are preparing to enter a profession where team-work is becoming more and more the norm. To include some form of formalised cooperation in their training may therefore be of benefit to the students in their future careers. We have very good experience with student cooperation in text production and want to emphasize the benefits of this method.

Students form small work-groups of two to four persons. They cooperate on delimiting the assignment and formulating the topic question. During the writing process they cooperate either by physically working together or by sharing drafts electronically. They are encouraged to share as much of the work as possible, e.g. by investigating different sources and sharing the findings with each other. The students are free to organize the work in the way they find best.

The texts may be produced by, and handed in, in the name of all the participating students. In that case we ask that each co-author takes particular responsibility for a specific section or chapter. Each student may also write a brief meta-document stating how the group has worked and reflecting on his contribution to the group. If problems of cooperation develop the groups are encouraged to seek help from their tutor early.

The time aspect

Teacher training courses vary considerably as to their length. Some are one year courses taken after the students have graduated in their subject/subjects. Some last five or more years, integrating the study of subject and the professional teacher training. However short or long the course, it is vital that the material in a portfolio is produced over time. Working continuously is a central part of the learning.

The tutor would normally provide a list of assignments and deadlines at the beginning of each term or year. However, if the students decide on their own topics, or participate with the tutor in deciding, the assignment texts may be produced during the term. Tutor and students must also come to an agreement as to deadlines. At our institution we have found it necessary to coordinate the due dates of the various disciplines so that students avoid a bunching of assignments at certain times.

Feedback on work

Students should be given structured and regular feedback while in the process of producing materials. Feedback can come from the tutor, from fellow students or both. It

is advisable to organize the students into small groups of two to four students, so-called response-groups, for this purpose. When the student has received feedback, he is free to improve and change the work up until the time when the portfolio is handed in for final assessment. Feedback may also take the form of a dialogue, and feedback in the form of dialogue between student and tutor or between student and student is strongly encouraged.

Feedback on the assignments may be provided in a variety of ways. We give our students clear instructions on what we expect from the various assignments. Experience shows that many students need this information. To illustrate the different information provided, we attach two example documents. Appendix 2 shows instructions for the formal, written documents and Appendix 1 presents a series of questions given to the students in a pre-assignment workshop or Portfolio Seminar. We recommend that students are introduced to the criterias for the documents as early as possible. To ensure that everyone knows what is expected of them and what the portfolio entails, we set aside time early in the study programme for portfolio information.We invite questions from the students to unearth where their problems lie. We also listen to the students during these sessions and alter and adjust the criterias as we go. The feedback on assignment work is thus a four-way process, tutor and students both receive and give feed-back and have the opportunity to learn and adjust.

Feedback on the student's work from the teacher educator may be a written comment, an oral comment either on a one to one basis, or as with the case of student cooperation, to the cooperating group. Our experience is that it is best to avoid general comments since these tend to be too vague to be of much help. Specific reference to specific paragraphs, their structure, content and relevance, to the use of sources etc. is of help to the students and should be preferred. After feedback has been provided, students may be free to change and improve their assignment for inclusion in the final Assessment Portfolio.

Feedback may be offered prior to the due date to help the student produce as good an assignment as he is able to at this given moment in the course. This document may then be "frozen", no further improvements allowed until a later date agreed upon, when the student is asked to comment on the assignment himself. Reflecting on your own work after a time lapse during which learning should have taken place may be an exciting experience. The reflection may be oral, in an interview setting, as a presentation to fellow students, as part of learning how to give feedback, an important teacher skill, or it may be a written meta-document included in the assessment portfolio.

Feedback on a student's work from a fellow student may be given within the work-groups described above. We have given the students complete freedom to organize themselves within these groups. They set their own schedules and deadlines and decide themselves how to respond to late deliveries etc. We acknowledge that the groups will function in different ways, but we do not believe that control from the tutor will be a positive element here. Rather we feel that taking responsibility for their fellow students in this matter is a further aspect of the training for their future careers.

Selecting the texts for the Assessment Portfolio

Production of the work for a portfolio is a process in learning and reflection. From early in the study programme, students are forced to write and produce material which they later may select for their Assessment Portfolio. This process is a vital part of the learning and is one of the great benefits from using portfolio. Towards the end of the study the students will make a selection from all the work produced, these will be placed in the students's Assessment Portfolio for final, summative assessment. The students must be informed about how many texts and other products they have to select, what products

from what part of the study should be included, what materials are optional etc. We recommend that students are included in the decision-making process as far as possible, in order to support the entire process of collating the portfolios and making them ʺtheir ownʺ, and to encourage a sense of ownership and pride in the entire process. Compiling and selecting the Assessment Portfolio should be an integrated part of the learning experience.

Assessing the portfolio

With a portfolio, both formative and summative assessment are used. Formative assessment is applied along the way as the materials are produced and feedback given, summative assessment is applied when the final Assessment Portfolio is handed in at the end of the course of study.

It is important that tutors and examiners are cognizant of the time aspect and method used to produce the Assessment Portfolio since formative and summative assessment can easily come into conflict with one another when both are used. One example is that the formative assessment may form the basis for an aggregate grade which then may be given too little weight in the summative assessment at the end. Another example is that a work, which has been produced early in the course of study and selected for the Assessmant Portfolio to demonstarte the student's development, is given undue weight in the summative assessment, thus reducing the student's grade. The students must have sufficient confidence in the system to know that by giving the portfolio their full attention they will gain full benefit from it, and not worry that their formative texts might be given a summative assessment with no consideration of the way in which the material has been produced.

This is a serious challenge to anyone introducing portfolio assessment. It is easy to stumble here and apply a standard summative assessment with no regard for the special demands placed on the students during the production of the work. As mentioned in Section I, the portfolio should demonstrate 1) a collection of texts and other material 2) development over time, 3) effort and development 4) student participation and 5) cooperation and reflection. These are the aspects which should be focused by the examiner during the summative assessment.

To avoid summative assessment interfering with the learning development in working with the portfolio, consider carefully how to document the time aspect. Students can work with the texts and improve them up to a given date, after which the portfolio is handed in and assessment will take place. In such a portfolio the boundaries between ʺearlyʺ and ʺlateʺ texts may be come unclear and development over time may be hard to assess. It is therefore helpful to ensure that the original date of any work is provided in an Assessment Portfolio.

Some texts from early in the course of study may be presented in their original form together with an improved version, or together with a meta-text which reflects on the strenghts and weaknesses in the early text. The texts may be handed in to give an indication of the level the student has reached at different points in the learning process, so called ʺpoint-evaluationʺ. Where the portfolio includes texts from an earlier stage or point in the learning process, these will be unsuitable as expressions of the student's knowledge and competence at the end of the learning process. However, they may be excellent as illustrations of the student's development over time. Such ʺearlyʺ texts may be included in the Assessment Portfolio together with a meta text discussing the early text, or together with a new improved version of the ʺearlyʺ text. This way the development of the student should be amply demonstrated.

Another problem one should be aware of is that the formative assessment may get into conflict with approval systems which have been used along the way. Tutors must learn not to give "pass" comments, but to focus on what has been done and how the assignment can be improved. The comments should teach students in what ways they may improve from where they stand "now". It is helpful to enumerate what the student actually has done and point to the sections which may be improved with examples of how the improvement may be achieved. Also with an eye to the student's judicial rights, a system must be found where the formative assessment does not get into conflict with the summative assessment. The student should not be given the impression that a text which has been commented on and improved automatically will get a resonable pass grade. Formative assessment is concerned with assisting, helping, developing and "forming"; not with grading. There should be a clear focus both from tutors and students that the formative evaluation is part of the learning and building of a professional identity and not a grading system. Grades are normally set with the summative assessment at the end of the study. For activities which foster growth while working on portfolio assignments, please refer to the Elements in APL Product 4, (Aus der Praxis Lernen, 2005)

Assessment criteria

Assessment criteria may be determined by the teaching institution alone or in cooperation with the students. Below are the assessment criteria which we have worked with. These criteria may of course be adjusted to suit the needs of your students and institution.

The portfolio collection is created for the purpose of demonstrating that the student through his work
   - has gained insight into the profession of teaching
   - is able to see the connection between practical experiences, theory and own development and learning
   - has gained insight into the central themes in the discipline
   - is able to use relevant literature in relation to topic questions and central aspects of assignments
   - is able to provide relevant justification for his choices and convictions
   - is able to reflect on his own development as a teacher

Please see also appendix 4 for further practical assessment criteria handed out to the students.

It is necessary to decide the focus of the Assessment Portfolio. This work could well be done jointly by tutors and students. Questions that should be addressed and decided include:

-   The formal and practical extent of the portfolio
      - variety, topics, genres, size
      - the place of practical experiences, school, classroom, pupil
      - the place of alternative presentations, drawings, photos, videos, etc.
      - volume of texts and materials
-   The academic and theoretical extent of the portfolio
      - academic level
      - theoretical foundation
-   Aggregate grade for the entire portfolio or separate grades for each text
-   Evaluation of process and product
-   When should evaluation take place?

- Students's knowledge of and participation in formulating the evaluation criteria

To close this discussion on the use of Assessment Portfolio, we present four fundamental questions which should be answered:
- What competences do we want the students to develop?
- What learning experiences contribute towards such compentences?
- How can documentation of the students's learning processes be provided?
- How can documentation of the students's final competences be provided?

It should now be clear that an Assessment Portfolio is not simply a matter of providing another form of examination. Using Assessment Portfolio is a complete alternative to the traditional final examination. The purpose of a traditional examination is to measure the knowledge assimilated/learned by the student over the course of study, a summative assessment separate from the learning process. The purpose of the Assessment Portfolio is to help the student in the learning process, to incorporate the time and energy given to assessment into the learning process, to provide formative assessment, and at the same time open up for a formal summative assessment through the Assessment Portfolio.

The basic philosphy behind the APL products stimulate to reflect on own learning and through this reflection reach new levels of self awareness and consciousness. This is also the purpose of the Assessment Portfolio. The APL documents include tools which may support and foster this development. Once again we refer you to the tools in APL Products 3 and 4 and to the theoretical foundation in APL Products 1 and 2, especially to the two models **ALACT** and **VESEt** which have been developed especially to aid student teachers in their efforts to integrate theory with practice, (Aus der Praxis Lernen, 2005).

LITERATURE

Aus der Praxis Lernen, a Comenius Project, Learning from Practice: Teacher Education (2002-2005), a collaborative project between the teacher training institutions at University of Utrecht, the Netherlands; Universitat Pompeu Fabra, Barcelona, Spain; Norwegian University of Science and Technology, Trondheim, Norway; Landesinstituts für Lehrerbildung und Schulentwicklung, Hamburg, Germany.

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APPENDICES

Appendix 1

Guiding questions used in portfolio seminars
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CONTENT
- Has the text a clear focus?
- Have you included only material relevant for the focus?
- Have you given priority to the material according to its importance, i.e. have you given more space to the more important aspects?
- Have you defined terms, especially subject specific terms? Have you been consistent in your use of terminology?
- Should the text be developed further, especially as regards
    explanations
    examples
    experiences
    use of sources
    observations
    figures, statistics
    illustrations, diagrams, pictures, models
    arguments for and against
- Stylistic aids and journalistic turns can also be part of the pedagogical xxx of the text
    episode, situation, occurrence
    persons
    ambience
    repetitions/variations
    comparisons
    opposites, parallels, analogies

STRUCTURE
- Is the sequential structure well planned?
- Are events that belong together placed together?
- Is the text properly structured into main sections and minor sections?
- Have you used titles and subtitles to make visible the various levels of the text?
- Have you used a clear and consistent paragraph division ?
- Have you used bold type etc to emphasize that which is especially important?

CLARIFY THE CONNECTIONS
- Table of content
- information about the text/the chapter
- Dividing the text, subheadings
- Conclusions, summaries, abstracts
- "First", "second", bullet points, numbers etc
- Cross references in the text: "...as previously stated...", "...as will be shown..."
- Connection from one sentence to the next

Appendix 2

Portfolio documents - technicalities and formalities
(Hand-out to students at beginning of term)
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The portfolio assignments presented as documents should fulfil the following criteria:

*With this type of exam you have an opportunity to demonstrate **control of central set texts** as well as other relevant literature. To present a portfolio assignment with no references to such literature is considered very risky and superficial. In any exam paper **discussion and reflection** should be central. Merely to describe or list things mechanically is not considered sufficient.*

1. **Title -** important for you reader to know what to focus on
2. **Introduction** -where you delimit the paper and state what it will deal with
3. **Main body -** this should be divided into paragraphs, each paragraph dealing with one major idea. Some use subtitles for the paragraphs, that is fine.
4. **Summary and conclusion** - the summary should be brief and to the point stating the central ideas from the main body of the paper. Concluding remarks may supplement this, or briefly show what the discussion in the paper may lead to.
5. **Bibliography**- a detailed list of all the texts you have referred to in the paper, listed alphabetically according to author's surname. Should include: Name, title, year and publisher.
6. You may write in **English or Norwegian**.
7. **The language** should be formal. If writing in English avoid contractions and oral language.
8. **New paragraphs** should be started either with a blank line, or by indenting the new line. Do not begin a new line for each sentence. Remember that the way you organize your paper provides important visual clues for your reader, to be sloppy here may lead to a lack of coherence and flow in the argumentation.
9. **Quoting and referring** can be done in various ways. Choose one way which suits you and be consistent. Ask if you are uncertain.
10. **The length of the paper** should be about five pages. Less than four is too short. If you write more than seven it had better be relevant and important.
11. With a five page paper the **introduction** should be be around 1/2 page and the **conclusion** around 1 page. If they are much longer you may have problems stating your main ideas and presenting your your discussion and reflection while keeping within your limits.

Appendix 3

At the Norwegian University of Science and Tehcnology in Trondheim we have for several years used assessment portfolios in the methodology classes (subject didactics) in Norwegian and English. An Assessment Portfolio (selected and handed in from several more texts) may typically contain:

Norwegian: Four basic texts which together demonstrate the student's ability in:
- the art of teaching Norwegian,
- educational reflection
- linking theory and practice
- integrating the art of teaching Norwegian with educational theory

Five meta-texts:
- two response-texts (feed-back on own text) received from fellow students
- the student's comments to the response-texts
- two response-texts (feed-back) given to fellow students

In addition, the student had to provide an evaluation of the response-group work and value of the student feed-back. (See Hoel and Haugaløkken: Response groups as learning resources when working with portfolios. 2003)

English: Four basic texts which together demonstrate the student's

- grasp of importance of English as a subject in Norwegian school
- ability to teach English as a foreign language with emphasis on two different areas which the student has selected
- ability to use Internet in teaching of English

Two meta-texts :
One response given to another student
One text where the student discusses the selection made for the assessment portfolio

Appendix 4

Assessment criteria
The following assessment criteria is given to the students. (Used in English Methods classes (didactics) by Hæge Hestnes)

I visualize a text as consisting of many layers with different levels of reflection:

Descriptive content:	A short section describing the backdrop, the teaching situation or whatever is being presented
Reflection level 1	The "I" phase: Why I did it, practical considerations, considering own likes and dislikes, rarely any references
Reflection level 2	The "Why" phase: Looking to formal demands, school curriculum, and the students' desires and needs.
Reflection level 3	Considering and reflecting on all or part of 1 and 2 in the light of own experience from the classroom, maybe some reference to theoretical ideas.
Reflection level 4	Considering all or part of 1, 2 and 3 in the light of own and others' experiences and formal theory
Reflection level 5	Considering various ways of using own skills and materials in solving students' needs and curriculum demands seen against a conscious backdrop of 1, 2, 3 and 4.