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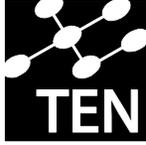
Building the European Network
For Lifelong Competence Development

TENCompetence IST-2005-027087

Project Deliverable Report

Deliverable nr ID4.4 – Evaluation implementation plan Digital Cinema Pilot

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Abstract (for dissemination)	This deliverable contains the implementation plan for the D.C. pilot evaluation. The first part details the general evaluation plan and process while the second part focuses on their implementation in the context of the D.C. pilot. Sample questionnaires are also appended to this document.
Keywords List	

Contents

PART 1: GENERAL EVALUATION PLAN

Introduction: the seven solutions of TENCompetence

According to the Description of Work, the TENCompetence project aims at addressing seven key problems related to lifelong competence development. The solutions to these problems form the core requirement for the development of the TENCompetence infrastructure. These solutions are:

1) New, promising, innovative pedagogical approaches for lifelong competence development, supported by the TENCompetence infrastructure.
2) Tools to support individuals, groups and organisations in Europe to find the best solution for their formal or informal learning problem.
3) Policies and software agents that support the pro-active sharing of knowledge and learning resources.
4) Models and software tools to assess the competences of individuals, groups and organisations in an exchangeable way.
5) Software for the effective and efficient support of users who create, store, use and exchange knowledge resources, learning activities, units of learning, competence development programmes and networks for lifelong competence development.
6) Software solutions to establish a decentralized, self-organized and empowered management model when using the TENCompetence infrastructure.
7) Integration of isolated tools that are available in the field.

The aim of the TENCompetence pilots is to validate the TENCompetence infrastructure in meeting the seven objectives of TENCompetence. This document describes the evaluation plan for the first pilot, the Digital Cinema Pilot.

Research question

The main research question to be answered is:

> How does the TENCompetence infrastructure perform in a variety of circumstances related to lifelong competence development?

Below, the operationalisation of the five elements in the main research question, namely 'how', 'the TENCompetence infrastructure', 'perform', 'a variety of circumstances' and 'related to lifelong competence development', will be discussed.

The TENCompetence infrastructure and *performance*
Close reading of the seven solutions shows that each of them, except for the last one, refers to activities that users may wish to perform. 'Performance' in the main research question consequently refers to 'performance with respect to the activities that users may wish to perform'. Furthermore, each of the seven solutions refers to specific tools that will be provided by the TENCompetence project. Thus, 'the TENCompetence

infrastructure' may be understood as 'the TENCompetence tools mentioned in the seven solutions'.

Thus, we may rephrase the main research question as:

> How do the TENCompetence tools mentioned in the seven solutions support the activities that users may wish to perform, as mentioned in the seven solutions?

This lead to the following research question matrix of tools (= the TENCompetence tools mentioned in the seven solutions) and activities (=activities that users may wish to perform, as mentioned in the seven solutions):

Tools	Activity
Pedagogical models TENC infrastructure	Realizing competence development [=most basic theme]
Software tools Policies Software agents	Creation, storage, use, exchange, pro-active sharing of resources of various kinds*
Models Software tools	Creating and performing exchangeable assessment
Tools	Finding solutions to learning problems
Software solutions	Establishing decentralized, self-organized and empowered competence management

*Resources of various kinds include:
- Knowledge resources
- Learning resources
- Learning activities
- Units of learning
- Competence development programs
- Networks for lifelong competence development

A further subdivision can be made with respect to the user, as the target group of users might be different with each activity. The following matrix is based partly on target groups of users mentioned explicitly in the TENCompetence solutions, partly on an analysis of what the most likely target groups are.

	Individual learner	Group of learners	Organisation of learner	Providers of resources	Certifying organisation	Teachers	Assessors	Technicians
Realizing competence development	x	(x)	(x)			(x)		(x)
Creation, storage, use, exchange, pro-active sharing of resources of various kinds*	x	(x)		x	(x)	x		(x)
Creating and performing exchangeable assessment of competences	**x**	**x**	**x**	x	x		x	(x)
Finding solutions to learning problems	**x**	**x**	**x**					(x)
Establishing decentralized, self-organized and empowered competence management	x	x	(x)					(x)

bold = actor included in seven solutions

A variety of circumstances
In the various pilots, the TENCompetence infrastructure will perform under a 'variety of circumstances'. The pilots will differ along several dimensions of the main research question, namely:
1. the presence of TENCompetence infrastructure will differ
2. the activities of learners will differ
3. the actors involved will differ

Ad 1) there are various reasons why the presence of the TENCompetence infrastructure will be different with each pilot:
1. At least with the first pilot, the TENCompetence infrastructure will not be ready, thus it will not be present at all.
2. While the TENCompetence infrastructure will be under development throughout the project, its components will show differences between pilots.
3. Integration with local systems will lead to different overall systems in each pilot.
4. As pilots will differ in their aims, the components of the TENCompetence infrastructure that will be relevant to the pilots, and thus the components that might be used, will differ.

How
Basically there are four questions with respect to the user activities:
1) To what extent do they take place?
2) How do they take place?
3) With what result do they take place?
4) What is the role of the tools?

Based on the seven tools and activities, the various actors and the four basis research questions, the research question can be split up into a few hundred possible combinations questions, which include 'With what result do individual learners using the TENCompetence infrastructure realize competence development? 'How do organizations using the TENCompetence infrastructure find the best solution for their formal or informal learning problem?'. We will not write these questions out here. These few hundred questions will not be used with each pilot. Instead, each pilot will select only those questions that are relevant to that pilot.

The variety of circumstances in the pilot, and especially the fact that the TENCompetence infrastructure will not be available in the first pilot, and will be under continuous development, enables the testing of an additional hypothesis, related to the fourth question of the role of the tools:

> Performance will be better with the TENCompetence infrastructure than without it, and will be better with later versions of the TENCompetence infrastructure than with earlier versions.

As the pilots are very divergent, it is not possible to operationalise what is meant by 'better' beforehand. Operationalisation will have to be considered with each pilot separately, taking into account operationalisations in earlier pilots.

Related to lifelong competence development
As the TENCompetence infrastructure is meant to support lifelong competence development, it is necessary to establish which characteristics of lifelong competence development are present with each pilots, and how, in what form, these characteristics are present. This will also contribute to describing the differences between the pilots and hence to describing the 'variety of circumstances'.

Within WP2, a list of characteristics of lifelong competence development is currently being developed. The list has been derived from an analysis of literature on competence development. This list includes the following characteristics:
- Long-term learning
- Learning in large groups
- Moving from novice to expert
- Learning from peers
- Learning on the workplace as an important element

- Learner determines own learning path
- Orientation by learner on competences to be developed
- Navigation through materials and selection of materials by the learner
- Competence management by the learner
- Learning across environments
- Teacher as coach
- Burden of proof lies with the learner; evidence collection is important
- Separation between who determines competences to be developed (learner and/or learner's organisation) and who provides competence development opportunity (providers)

- Assessment of prior learning
- Separation of assessment and education
- Competence assessment: the assessment of competences as a whole, as distinct from assessing the contents of a course
- Criterion-based assessment
- Repeated assessment
- Separation between teachers/coaches and assessors

These characteristics will be used in determining the implementation of life-long competence development in each pilot. These characteristics are elements of the life-long competence development itself. To describe the pilots, we add one characteristic of the learners:
- The learners in their context belong to the target group of life-long learners

Data analysis: general analytic strategy

Our general analytic strategy for data analysis consists of three activities:
1. description
2. hypothesis testing
3. cross-case synthesis

Descriptions will in an early phase of each pilot be used for describing how life-long competence development is implemented in each pilot and for describing the variety of circumstances in the pilots. Descriptions will in a later stage be used in providing answers to the question within each pilot how the TENCompetence system performs.

Hypothesis testing will be done on the hypothesis that performance will be better with the TENCompetence infrastructure than without it, and will be better with later versions of the TENCompetence infrastructure than with earlier versions.

Cross-case synthesis will be done on all pilots, to provide more robust answers to all research questions mentioned above.

Data collection

This section lists the instruments that seem useful in data collection. With each pilot separately, a decision will have to be made which of these instruments to use, depending on the possibilities of the pilot. The following instruments can be used in data collection:
1. Questionnaires and tests
2. Log files of various kinds
3. Observations & ethnographies
4. Focus groups
5. Experiments
6. Interviews

These instruments are listed in the order in which they probably will be used in the pilots.

Data analysis

Below data analysis techniques are described for relevant combinations of competence development activities and the four basic 'how' questions. Data analysis techniques are listed for within pilot analysis only. Techniques for cross-case data analysis have yet to be developed.

1. Use codes for the trails in the learning environment. Codes are equal to the competence development activities; codes are counted, and thus give a quantitative measure on the extent to which the relevant activities take place.

Relevant activities:
- Creation of knowledge resources
- Storage of knowledge resources

- Use of knowledge resources
- Exchange of knowledge resources

- Creation of learning activities
- Storage of learning activities
- Use of learning activities
- Exchange of learning activities

- Creation of units of learning
- Storage of units of learning
- Use of units of learning
- Exchange of units of learning

- Creation of competence development programs
- Storage of competence development programs
- Use of competence development programs
- Exchange of competence development programs

- Creation of networks for lifelong competence development
- Storage of networks for lifelong competence development
- Use of networks for lifelong competence development
- Exchange of networks for lifelong competence development

- Creation of exchangeable assessments
- Performance of exchangeable assessments

- Finding solutions to learning problems

- Competence management (which can be characterized as decentralized, self-organized and empowered)

➔ codes are attached to activities of users, and these are then counted; these measures give an impression of the kind of activities that users (not only learners, but all types of users) perform in the system, and how this differs with different pilots.
This will answer questions 'to what extent do learners' with respect to those activities that do not in themselves have a time dimension

2. Pre- and post test of the competence proficiency level, preferably with a comparable control group.
➔ a competence assessment of multiple-choice tests is delivered before users enter the network, and after some time. Preferably this is rehearsed three times, e.g. also a few months after finishing a course.
This will answer the question 'with what results do learners realize competence development', which has a time dimension

3. Measurement at several points in time of the degree of self-organisation of competence management
➔ Analysis of information provided by interviews and ethnographies conducted at several stages can produce a general understanding of learner behaviour and organization in relation with competence management.

This will answer the question 'with what results does decentralized, self-organized and empowered competence management develop', which has a time dimension.

4. Analysis of the log files and the use of the help files
➔ Analysis of log files and help files will be done to discover problems that users experience with the system and to analyze the user friendliness.

This will answer part of the question 'what is the role of the tools…'

5. Analysis of sequences of activities

This will answer part of the question 'how do users….'

6. Interviews and questionnaires
➔ Users will be given questionnaires and will be interviewed

This will answer part of the questions 'how do users…' and 'with what results do users' and 'what is the role of the tools'.

Possible combinations of methods

	To what extent	How	With what result	Role of the tools
Realizing competence development [=most basic theme]	3	5	2	
Creation, storage, use, exchange, pro-active sharing of resources of various kinds*	1	5; 6	6	4; 6
Creating and performing exchangeable assessment of competences	1	5; 6	6	4; 6
Finding solutions to learning problems	1	5; 6	6	4; 6
Establishing decentralized, self-organized and empowered competence management	1	5; 6	3; 6	4; 6

Method for deriving research questions, data collection methods and data analysis methods for each individual pilot

It is clear that evaluating the TENCompetence pilots is a complex undertaking. Seven objectives are involved, a range of models and tools, and pilots which are performed in a variety of circumstances. As indicated, it will not be feasible nor interesting to put all pilots to a test of the several hundred research questions that could possible be asked. As indicated above, for each pilot those questions should be selected that are relevant to that pilot.

Above, the procedure is sketched by which the selection of relevant research questions, data collection methods and data analysis methods will be one with each pilot. The procedure consists of the following steps:

- Ask for an accurate description of the pilot, containing………………..
- Characterize the pilot with respect to the presence and absence of the characteristics of life-long competence development.
- Determine the relevance of each of the seven competence development activities to the pilot.
- Determine the user types involved.
- Determine the availability and functionalities of the current TenCompetence infrastructure.
- Determine possibilities for data collection.
- Devise general approach to pilot evaluation, containing:
    o how the three general data analysis strategies will be used in relation to the four 'how' questions and the four methods of data collection.
- Develop research sub questions.
- Determine data collection method and data analysis method with each research sub question, including when collection and analysis will take place.
- Develop instruments for data collection and data analysis.

This method is based upon the experiences in setting up the Digital Cinema Pilot.

Overall planning pilot evaluation

According to the DIP-2, WP4 will execute four tasks in the DIP-2 period:
Task 1: Set up the cycle 1 pilots and validate the initial system (month13-21).
Task 2: Definition, planning, and setup of cycle-2 pilots (month 13-30).
Task 3: Provide pilot evaluation plans (month 13-24).
Task 4: Collect and distribute requirements, use-cases, scenarios, and other useful information (month 12-30).
The pilot evaluation is task 3.

These four tasks have to be performed by several partners. The distribution in person months is as follows:

WP 4	Pilots with the Integrated System & validation of the project								Period: month 13-30
Partner ID	OUNL	LO-GICACMG	FBM-UPF	UvA	SU	SYN	UNES-CO	Ant-werp	MM
Person months	4	4	12	7	7	8	6	14	62

In general, the division of labour among participants is clear. The division of labour has not been spelled out, but with respect to task 1 – 3, it will be something like:
Task 1: setting up cycle 1 pilots + small contribution to task 3: UPF: 8; SU: 7.
Task 2: setting up cycle 2 pilots + small contribution to task 3: Synergetics: 8; UNESCO: 6; Antwerp: 14
Task 3: UvA: 7, OUNL: 4;

With respect to the pilot evaluation (task 3), the questions to be answered are: (1) how much time is available for this task from the pilot evaluators, (2) how much input for this task is needed from the local pilot coordinators, (3) how should this amount of time be divided among the activities within task 3?

Ad 1. For the whole period, 11 person months are available from the pilot evaluators for task 3. Up till now, approximately 2 person months has been spent by UvA and an estimated 0,5 person months has been spent by OUNL. This means that currently, around 8.5 person months is available for task 3.

Ad 2. Based on the tasks described in the table below, within each pilot an estimated amount of one person month will be needed for task 3; evaluators will spend around two person months on each pilot.

Ad 3. The estimated person months with each activity are provided in the table. With respect to the task division among the pilot evaluators, we have the following

Proposal on task division among pilot evaluators
OUNL: data analysis and reporting on individual pilots; total: 3,5 person months
UvA: cross-pilot analysis, reporting and evaluation design; total: 5 person months

Tasks in the pilot evaluation

Task	Local pilots PM per pilot	UvA per pilot	OUNL per pilot	UvA PM in total	OUNL PM in total
Provide an accurate description of the pilot, using Ruud's template and earlier questions to UPF.	0,2				
Characterize the pilot with respect to the presence and absence of the characteristics of life-long competence development	0,2				
Determine the relevance of each of the seven competence development activities to the pilot	0,1				
Determine the user types involved	0				
Determine the availability and functionalities of the current TENCompetence infrastructure	0,1				
Determine possibilities for data collection	0,1				
Devise general approach to pilot evaluation, containing how the three general data analysis strategies will be used in relation to the four 'how' questions and the four methods of data collection; 3 pilots	0	0,3		1	
develop research sub questions; three pilots	0	0,2		0,5	
determine data collection method and data analysis method with each research sub question, including when collection and analysis will take place; 3 pilots	0	0,3		1	
develop instruments for data collection and data analysis; 3 pilots + remainder of digital cinema pilot	0	0,3		1	
Data collection	0,3	0	0	0	
Data analyses (with each pilot; 4 in total)		0	0,5	0	2
Reporting on pilot evaluations (after each pilot)		0	0,5	0	1,5
Cross-pilot analyses (after each pilot; 3 in total)		0		1	
Cross-pilot report		0		0,5	
	1	1,1	1	5	3,5

PART TWO: EVALUATION PLAN FOR THE DIGITAL CINEMA PILOT

Lifelong competence development in the Digital Cinema Pilot

The Digital Cinema Pilots is aimed at learners who can be characterised as belonging to one of the main target groups of TenCompetence: professionals, who live and work in dispersed areas, working at a distance, with different entrance levels, different motivations, who have little time, but need to get knowledge of this new technique which is changing their profession.

However, when looking at characteristics of life-long competence development, it turns out that only a relatively small proportion of these characteristics is present in the Digital Cinema Pilot. Using a list of characteristics that is currently being developed within WP2, the following characteristics of life-long competence development are present:
- Learner determines own learning path (to a very limited extent)
- Orientation by learner on competences to be developed (to a very limited extent; and not with respect to the secondary courses, as no entrance competence assessment is provided)
- Navigation through materials and selection of materials by the learner (to a very limited extent)
- Repeated assessment (possibly, but unclear)

The following characteristics are not present:
- Long-term learning
- Learning in large groups
- Moving from novice to expert
- Learning from peers
- Learning on the workplace as an important element

- Learning across environments
- Teacher as coach
- Burden of proof lies with the learner; evidence collection is important
- Competence management
- Separation between who determines competences to be developed (learner and/or learner's organisation) and who provides competence development opportunity (providers)

- Assessment of prior learning
- Separation of assessment and education
- Competence assessment: the assessment of competences as a whole, as distinct from assessing the contents of a course
- Criterion-based assessment
- Separation between teachers/coaches and assessors

Note that this is not meant as a reproach on the pilot, but as a first attempt to position the pilot relative to the themes of TenCompetence and relative to the other pilots.

Competence development activities in the Digital Cinema Pilot

- Creation of knowledge resources by teachers, individual learners, and technicians
- Storage of knowledge resources by teachers, individual learners, and technicians
- Use of knowledge resources by individual learners
- Exchange of knowledge resources by individual learners

- Creation of learning activities by teachers
- Storage of learning activities by teachers
- Use of learning activities by individual learners

- Creation of units of learning by teachers
- Storage of units of learning by teachers
- Use of units of learning by individual learners

- Creation of competence development programs by teachers, individual learners
- Storage of competence development programs by teachers, individual learners
- Use of competence development programs by individual learners
- Exchange of competence development programs

- Creation of exchangeable assessments by assessors, teachers
- Performance of exchangeable assessments by individual learners

- Finding solutions to learning problems by individual learners, technicians, and teachers

- Self organized Competence management by individual learners

User types involved in the Digital Cinema Pilot

- Individual learners
- Teachers
- Technicians
- Curriculum designers

Elements of the TenCompetence infrastructure in the Digital Cinema Pilot

The following aspects of TC infrastructure seem to be present in the Digital Cinema Pilot:

- working with learning resources,
- combining these to units of learning in IMS Learning Design, and
- combining these to competence development programmes.

The following aspects of the TC infrastructure seems to be absent in the Digital Cinema Pilot:

- The TenCompetence technical infrastructure;
- Innovative pedagogies, including the following elements:

    (1) Although pre-assessing the entrance level is included to validate prior learning, people do not enter the CDP at their own level

    (2) Specific policies and software agents for encouraging collaboration among Learners. The lack of these policies and agents was addressed by incorporating an informer among the learning community. The informer presents himself to the learners as one of them and act as a maverick that leads the way and encourages certain behaviours.

    (3) Criterion-based assessment, following the learner over a longer period of time; Has been addressed partially by incorporating general assessments that target the competences related to the UOLs rather than their content. However, the lack of formal competence definition and proficiency scales hinders the mapping between the implemented process to the criterion-based assessment sought in TENCompetence.

    (4) Integration with working-on the-job: no involvement of organisations, no exercises at the job, no competence assessment which involved working-on-the-job

    (5) Emphasis on evidence collection

    (6) Large degree of freedom of choosing CDPs by the learner

Possibilities for data collection in the Digital Cinema Pilot

There are two main possibilities for data collection in the Digital Cinema Pilot. The first is questionnaires, interviews, ethnographies, and tests to the actors involved. The second is log files of various kinds. A blog is used for discussion, and functions as a log file of discussions. With respect to the learning activities, the SLED server provides data on the number of times pages are loaded, but no information can be provided on individual users. Moreover, the logged data does not have a timestamp. However, the SLED system remembers which units of learning have been done by an individual learner.

General approach to the evaluation of the Digital Cinema Pilot

The fact that many characteristics of life-long competence development are absent in the Digital Cinema Pilot, is of course related to the fact that most elements of the TenCompetence models and technical infrastructure are not yet available at this moment.

This provides an ideal opportunity to compare the Digital Cinema Pilot as a situation in which most TC models and infrastructure is absent to other pilots in which the models and infrastructure gradually become available. Thus the main emphasis is on providing data that will be used in a *cross-case analysis* with later pilots. This cross-case analysis will take the form mainly of *hypothesis testing*, namely the hypothesis that the availability of the TenCompetence infrastructure will make things better. *Descriptions* will focus on those elements of the TenCompetence infrastructure that are present, namely working with learning resources and combining these to units of learning and competence development programmes.

In addition, an important goal of the Digital Cinema pilot is to test the pilot evaluation methodology itself. The outcomes of the evaluation of the Digital Cinema pilot will provide clues as to the usability of the elements of the evaluation plan, both the general evaluation plan and the plan for the Digital Cinema pilot. Inevitably, these outcomes will also result in modifications being made to the evaluation plan.

Research sub-questions and data collection methods in the Digital Cinema Pilots

On the basis of a comparison between the elements of the Digital Cinema Pilots, the characteristics of life-long competence development and the tools and activities identified within the seven TC objectives (see below), a list has been compiled of hypotheses to investigate and how to investigate them.

Overview of learner activities, hypothesized effects of TenCompetence tools, and data collection method; ordered by learner activity

Characteristic of Digital Cinema Pilot	Hypothesized effect compared to ideal TC situation	How to investigate
Realizing competence development		
Lack of pedagogical model and infrastructure in which preparatory learning at the course and learning on the job are integrated	less transfer of learning to the workplace	- ask learners - ask organisations of learners
Lack of pedagogical model and infrastructure in which learner needs are measured and matched to CDPs	less opportunities to fit the CDP and courses to the learner's needs	- ask learners - investigate how often people only made assignments of specific UoLs
Presence of choice of time schedule for following the CDP	Equal freedom in time frames and time chosen to follow the CDP	- ask learners - log data
Lack of pedagogical model and infrastructure for letting learners establish their own competence proficiency level	less opportunity for getting feedback on current proficiency level	- ask learners for need on having proficiency level established and experienced opportunities
Lack of pedagogical model (and infrastructure?) which separates teaching and assessment and teacher and assessor role.	Assessment more tied to course content, and less to competence standards	- comparison of assessment and competence standards
Lack of pedagogical model and community infrastructure for continued learning	Less (no?) returns to community infrastructure after the course has been finished	- ask learners - log data
Working with resources		
Lack of policies and software agents for stimulating collaboration between learners	less collaboration between and learning from learners	- measure length of discussions in VLE - investigate kind of collaboration activities in VLE - ask learners on their collaboration experience
Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs	more technical problems in creating learning resources and in using them	- ask content providers on problems experienced - observe content providers as they work with the tools - ask learners on problems experienced - observe use patterns in the learning environment

Presence of environment for learning at a distance	Equal possibilities for learning at a distance	- ask learners
Working with assessments		
Lack of models for creating exchangeable assessment	Less and more difficult exchange of assessment	- (long term) ask resource providers
Finding solutions to learning problems		
Lack of tools and models for finding solutions to own learning questions	Less possibilities for learners to explore their own learning questions	- ask learners
Presence of possibility for deciding which competences to develop	Equal possibilities for choosing competences to be developed	- ask learners
Competence management		
Lack of software solutions (and models?) for competence management	Less opportunity for the learner for competence management	- ask learners
Lack of software solutions (and models?) for competence management	Less opportunity to follow the development of the learner and to (self-)steer this development	- examine patterns of following UoLs - ask learners - ask teachers

Overview of learner activities, hypothesized effects of TenCompetence tools, and data collection method; ordered by data collection method

How to investigate	Hypothesized effect compared to ideal TC situation		Characteristic of Digital Cinema Pilot
ANALYSES BASED ON QUESTIONNAIRES AND INTERVIEWS			
ask learners before and after			
ask learners for need on having proficiency level established and experienced opportunities	less opportunity for getting feedback on current proficiency level	Realizing competence development	Lack of pedagogical model and infrastructure for letting learners establish their own competence proficiency level
ask learners	less opportunities to fit the CDP and courses to the learner's needs	Realizing competence development	Lack of pedagogical model and infrastructure in which learner needs are measured and matched to CDPs
ask learners	Equal freedom in time frames and time chosen to follow the CDP	Realizing competence development	Presence of choice of time schedule for following the CDP
ask learners	Equal possibilities for choosing competences to be developed	Finding solutions to learning problems	Presence of possibility for deciding which competences to develop
ask learners	Less possibilities for learners to explore their own learning questions	Finding solutions to learning problems	Lack of tools and models for finding solutions to own learning questions
ask learners	Equal possibilities for learning at a distance	Working with resources	Presence of environment for learning at a distance
ask learners afterwards			
ask learners on their collaboration experience	less collaboration between and learning from learners	Working with resources	Lack of policies and software agents for stimulating collaboration between learners
ask learners	less transfer of learning to the workplace	Realizing competence development	Lack of pedagogical model and infrastructure in which preparatory learning at the course and learning on the job are integrated
ask learners	Less (no?) returns to community infrastructure after the course has been finished	Realizing competence development	Lack of pedagogical model and community infrastructure for continued learning

TENCompetence

How to investigate	Hypothesized effect compared to ideal TC situation		Characteristic of Digital Cinema Pilot
ask learners on problems experienced	more technical problems in creating learning resources and in using them	Working with resources	Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs
ask learners	Less opportunity for the learner for competence management	Competence management	Lack of software solutions (and models?) for competence management
ask learners	Less opportunity to follow the development of the learner and to (self-)steer this development	Competence management	Lack of software solutions (and models?) for competence management
ask teachers			
ask teachers	Less opportunity to follow the development of the learner and to (self-)steer this development	Competence management	Lack of software solutions (and models?) for competence management
ask organisation of learner			
ask organisations of learners	less transfer of learning to the workplace	Realizing competence development	Lack of pedagogical model and infrastructure in which preparatory learning at the course and learning on the job are integrated
ask content providers			
ask content providers on problems experienced	more technical problems in creating learning resources and in using them	Working with resources	Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs
(long term) ask resource providers	Less and more difficult exchange of assessment	Working with assessments	Lack of models for creating exchangeable assessment
ANALYSES AFTERWARDS BASED ON LOG DATA			
log data	Equal freedom in time frames and time chosen to follow the CDP	Realizing competence development	Presence of choice of time schedule for following the CDP
log data	Less (no?) returns to community infrastructure after the course has been finished	Realizing competence development	Lack of pedagogical model and community infrastructure for continued learning
comparison of assessment and competence standards	Assessment more tied to course content, and less to competence standards	Realizing competence development	Lack of pedagogical model (and infrastructure?) which separates teaching and assessment and teacher and assessor role.
measure length of discussions in VLE	less collaboration between and learning from learners	Working with resources	Lack of policies and software agents for stimulating collaboration between learners
investigate kind of collaboration	less collaboration between and learning from	Working with	Lack of policies and software agents for stimulating

How to investigate	Hypothesized effect compared to ideal TC situation		Characteristic of Digital Cinema Pilot
activities in VLE	learners	resources	collaboration between learners
observe use patterns in the learning environment	more technical problems in creating learning resources and in using them	Working with resources	Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs
examine patterns of following UoLs	Less opportunity to follow the development of the learner and to (self-)steer this development	Competence management	Lack of software solutions (and models?) for competence management
investigate how often people only made assignments of specific UoLs	less opportunities to fit the CDP and courses to the learner's needs	Realizing competence development	Lack of pedagogical model and infrastructure in which learner needs are measured and matched to CDPs
ANALYSES BASED ON OBSERVATION OF PEOPLE			
observe content providers as they work with the tools	more technical problems in creating learning resources and in using them	Working with resources	Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs

Instruments for evaluation of the Digital Cinema Pilot

Questions to participants at the beginning of the pilot	Why this question?
LEARNERS	
general	
Ask for permission to participate in research	To make inclusion of participant in research possible
Id-code	To make possible all measures related to competence development, in which the begin situation has to be compared to a later situation
ask learner details:	
age	To create possibilities for investigating the variety of people / situations for which the TenCompetence system is meant
sex	To create possibility for investigating gender differences; To create possibilities for investigating the variety of people / situations for which the TenCompetence system is meant
education	To create possibilities for investigating the variety of people / situations for which the TenCompetence system is meant
years of work experience	To create possibilities for investigating the variety of people / situations for which the TenCompetence system is meant To investigate hypothesized effect of less opportunities to fit the CDP and courses to the learner's needs
Learner's proficiency:	
own estimation of current proficiency level??	To create possibilities for investigating the variety of people / situations for which the TenCompetence system is meant To investigate hypothesized effect of less opportunities to fit the CDP and courses to the learner's needs; To investigate hypothesized effect of less opportunity for getting feedback on current proficiency level To create possibilities for measuring the learner's competence development To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant To investigate the hypothesized effect of less opportunity for the learner for competence management To investigate the hypothesized effect of less opportunity to follow the development of the learner and to (self-)steer this development
Experience with learning at a distance	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Learner needs:	
Diagnose learner needs	To investigate the hypothesized effect of less opportunities to fit the CDP and courses to the learner's needs To investigate the hypothesized effect of less possibilities for learners to explore their own learning questions To investigate the hypothesized absence of an effect in possibilities for choosing competences to be developed To investigate the hypothesized effect of less opportunity for the learner for competence management
Specify learning objectives	To investigate the hypothesized effect of less opportunities to fit the CDP and courses to the learner's needs
motivation for following the course	To investigate the hypothesized effect of less opportunities to fit the CDP and courses to the learner's needs
learning style?	To investigate the hypothesized effect of less opportunities to fit the

	CDP and courses to the learner's needs
Learner conditions:	
time schedule, freedom	To investigate the hypothesized absence of an effect in freedom of choice of time frames and time chosen to follow the CDP
amount of time to be spent on the course	To investigate the hypothesized absence of an effect in freedom of choice of time frames and time chosen to follow the CDP
Equipment at home / workplace	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Learner & organisation	
involvement of employer (time, need etc.)	To investigate hypothesized effect of less transfer of learning to the workplace
Teachers:	
Experience with ICT	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with teaching at a distance	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with teaching/guiding professionals	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with flexible learning	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Developers	
Prior experience	
Experience with development of digital learning materials	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with development of distance learning materials	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with development of flexible learning	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with development of materials for professional learning	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Experience with development of materials for collaborative learning	To create possibilities for investigating the effects on the variety of people / situations for which the TenCompetence system is meant
Current pilot	
Experiences in creating the learning resources, units of learning, CDPs, assessment	To investigate the hypothesized effect of more technical problems in creating learning resources and in using them. To investigate the hypothesized effect of assessment more tied to course content, and less to competence standards
Problems in creating these	To investigate the hypothesized effect of more technical problems in creating learning resources and in using them
Possibilities for exchanging the assessments made	To investigate the hypothesized effect of less and more difficult exchange of assessment
Description of the knowledge resources, learning activities, roles etc at the beginning.	To enable a thorough understanding of the pilot in its context.

Questions covered by questionnaires at beginning of Digital Cinema Pilot

↓

yes	Characteristic of Digital Cinema Pilot	Hypothesized effect compared to ideal TC situation	How to investigate
	Realizing competence development		
X	Lack of pedagogical model and infrastructure in which preparatory learning at the course and learning on the job are integrated	less transfer of learning to the workplace	- ask learners - ask organisations of learners
X	Lack of pedagogical model and infrastructure in which learner needs are measured and matched to CDPs	less opportunities to fit the CDP and courses to the learner's needs	- ask learners - investigate how often people only made assignments of specific UoLs
X	Presence of choice of time schedule for following the CDP	Equal freedom in time frames and time chosen to follow the CDP	- ask learners - log data
X	Lack of pedagogical model and infrastructure for letting learners establish their own competence proficiency level	less opportunity for getting feedback on current proficiency level	- ask learners for need on having proficiency level established and experienced opportunities
X	Lack of pedagogical model (and infrastructure?) which separates teaching and assessment and teacher and assessor role.	Assessment more tied to course content, and less to competence standards	- comparison of assessment and competence standards
	Lack of pedagogical model and community infrastructure for continued learning	Less (no?) returns to community infrastructure after the course has been finished	- ask learners - log data
	Working with resources		
X	Lack of policies and software agents for stimulating collaboration between learners	less collaboration between and learning from learners	- measure length of discussions in VLE - investigate kind of collaboration activities in VLE - ask learners on their collaboration experience
X	Lack of software specifically aimed at creating and using learning resources, units of learning and competence development programs	more technical problems in creating learning resources and in using them	- ask content providers on problems experienced - observe content providers as they work with the tools - ask learners on problems experienced - observe use patterns in the learning

			environment
	Presence of environment for learning at a distance	Equal possibilities for learning at a distance	- ask learners
	Working with assessments		
X	Lack of models for creating exchangeable assessment	Less and more difficult exchange of assessment	- (long term) ask resource providers
	Finding solutions to learning problems		
X	Lack of tools and models for finding solutions to own learning questions	Less possibilities for learners to explore their own learning questions	- ask learners
X	Presence of possibility for deciding which competences to develop	Equal possibilities for choosing competences to be developed	- ask learners
	Competence management		
X	Lack of software solutions (and models?) for competence management	Less opportunity for the learner for competence management	- ask learners
X	Lack of software solutions (and models?) for competence management	Less opportunity to follow the development of the learner and to (self-)steer this development	- examine patterns of following UoLs - ask learners - ask teachers

Questionnaires evaluation Digital Cinema pilot

Questionnaires to be filled in before the start of the pilot

Contains questionnaires to be filled in by:
- learners
- teachers in their role of guiding the learning process
- teachers in their role of developing content

Questionnaire to the learners in the Digital Cinema pilot

Dear participant in the Digital Cinema Pilot,
Thank you for participating in the Digital Cinema Pilot. The Digital Cinema Pilot is a pilot within the TenCompetence project, which aims at establishing an infrastructure for life-long competence development. As the infrastructure is under development, it is very important for us to evaluate how the infrastructure is used in the Digital Cinema Pilot. As part of the evaluation, we have set-up this questionnaire. It is our intention to supplement this questionnaire by a questionnaire at the end of the Digital Cinema Pilot. Your participation in this evaluation would be highly appreciated, as feedback from the pilot participants is our main source for improving the infrastructure. We would therefore like to ask you to fill in this questionnaire. Please note that by filling in and returning this questionnaire to us, you grant us permission to use your questionnaire for evaluation of the pilot only. The data you provide through this questionnaire will not be used for any other purpose; they will be used by the evaluation researchers only and not be distributed to anyone else. Thank you for your participation!

The questionnaire includes several question types:
- _ _ indicates that you have to fill-in a short answer; sub questions of this type are preceded by a '-'.
- _____ indicates that you can type in longer text.
- ___ /___ indicates that you have to choose one of several answers; you can either circle the correct answer, or strike-through or remove the incorrect answer.
- o a round box 'o' indicates that you have to choose one of the available answers
- □ a square box '□' indicates that you can choose several answers; tick all answers that apply.

Identification
1. Please provide us with the following few digits that are unique to you. This will enable us to compare the answers on a questionnaire at the end of the course to the answers you provide now, without making anything visible about your identity.
- last two digits of your phone number: _ _
- day of the month on which you were born: _ _
- last two digits of your bank account: _ _

Background
2. How old are you? _ _ years old
3. What is your sex?
o female
o male
4. In which country do you live? _____
5. What is the highest educational degree that you earn:

o   primary school

o   secondary school

o   secondary vocational education

o   higher vocational education

o   bachelor's degree

o   university master's degree

o   PhD

6. What is your profession? I am a _____

Experience

7. How would you describe your experience with distance learning?

-   I have followed _ _ courses / modules etc. through distance learning.

8. Which of the following describes you as an Internet user best? Please select only one answer:

o   I am a heavy user on a daily basis; any function that can be done through the Internet instead of traditionally, I will perform through the Internet, for example shopping, banking, web logs, conferencing.

o   I would consider myself a moderate user, with regular once a week to daily use of common functions such as email, web browsing, chat.

o   I am a very limited user, using the Internet less than once a week, and only if absolutely necessary.

9. Which statement describes your experience with using webbased discussion forums best? Please select only one answer:

o   I have never participated in a web based forum

o   I have occasionally contributed to web based forums

o   I often use web based forums as a means for communication

10. Which statement describes your experience with using weblogs as a means of communication best? Please select only one answer:

o   I have never created a web log entry

o   I have occasionally reacted in discussions on web logs

o   I often use web logs often as a means for communication

11. How many years of work experience in the cinema profession do you have? _ _ years

12. What is your current job function? _____

Learner needs

How would you describe your current proficiency level with respect to working with Brainstorm eStudio, the application that will be used in working with Virtual Sets? Tick all of the answers listed below that apply to your situation:

13. I am able to use Brainstorm eStudio for:

□   basic interface operations

□ primitives basic manipulation

□ virtual object simple manipulation

□ object basic animation

□ object presets animation

□ advanced animation and variables management

□ virtual set composition

□ sequential events management

□ virtual set production

□ I don't know

How would you describe your learner needs? Tick all of the answers listed below that apply to your situation.

14. I would like to learn or need to learn to be able to use Brainstorm eStudio for:

□ basic interface operations

□ primitives basic manipulation

□ virtual object simple manipulation

□ object basic animation

□ object presets animation

□ advanced animation and variables management

□ virtual set composition

□ sequential events management

□ virtual set production

□ I don't know

15. Which of the following belong to your personal learning objectives? Tick all of the answers listed below that apply to your situation.

☐ Get familiar with Brainstorm eStudio basic interface functionalities and concepts, and build a first scenario. Focus includes Mouse modes, Axis views, Desktop panel, Global lists

☐ Learn how to create and manipulate primitives along with their types and attributes.

☐ Find out how to design and manipulate virtual graphic objects. Focus includes Creating, renaming, and saving objects; Texturing, Duplication, Extruded primitives, Grouping, Text creation

☐ Learn simple animation methods with timers, bindings, and actions for virtual graphic objects. Focus also includes Folder and Icon creation, Snapshots, Object basic states, 1D evolution curve, Production list

☐ Discover advanced animation tools and methods in Brainstorm eStudio. Focus includes Creating gradients, Blending two materials, Group and matrix types, Using the presenter and group options, 3D curves

☐ Learn how to create and assemble variables, Text objects, Curves, grouping and storing simple data methods.

☐ Get familiar with integrating complex objects into virtual sets using Brainstorm eStudio. Focus includes Clipping, Merging databases

☐ Learn simple methods to construct and produce series of visual events using Brainstorm eStudio.

☐ Combine virtual objects and animations to produce simulations in a virtual set using Brainstorm eStudio.

☐ I don't know

16. Which of the following describe(s) apply to your situation? Tick all of the answers listed below that apply to your situation.

☐ I want to keep up to date within my existing function or job

☐ I want to study for a new function or job or improve my current job level

☐ I want to reflect on my current competences to look which functions and jobs are within my reach or to help me define new learning goals

☐ I want to improve my proficiency level of a specific competence

☐ Want some support on a non-trivial learning problem

☐ Want to explore the possibilities in a new field (learning network) to help define new learning goals

17. Which of the following describe(s) the involvement of your employer? Tick all of the answers listed below that apply to your situation.

☐ My employer is not involved in my following this course

☐ My employer pays this course's fee

☐ My employer has obliged me to follow this course

☐ My employer has allocated part of my working hours for following this course

☐ Following this course successfully is necessary for me to keep my current job function

☐ Following this course successfully is necessary for me to obtain a new job function at my current employer.

☐ I follow this course as part of a trajectory for people who are unemployed or who are in danger of becoming unemployed.

Learning resources

18. How many hours per week will you be able to spend on the course? _ _ hours per week

The following two questions concern the equipment that you use for following the course.

19. Do you use your computer at home?

o yes

o no

If yes,

20. My computer at home is best described as

o new (less than one year old)

o neither new nor old

o very old (more than a few years old)

21. My Internet connection at home can be described as

o slow

o medium

o fast

o very fast

22. Do you use your computer at your work place?

o Yes

o No

If yes,

23. My computer at work is best described as

o new (less than one year old)

o neither new nor old

o very old (more than a few years old)

24. My Internet connection at work can be described as

o slow

o medium

o fast

o very fast

Questionnaire to the teachers in the Digital Cinema Pilot [draft]

Dear participant in the Digital Cinema Pilot,
Thank you for participating in the Digital Cinema Pilot. The Digital Cinema Pilot is a pilot within the TenCompetence project, which aims at establishing an infrastructure for life-long competence development. As the infrastructure is under development, it is very important for us to evaluate how the infrastructure is used in the Digital Cinema Pilot. As part of the evaluation, we have set-up this questionnaire. It is our intention to supplement this questionnaire by a questionnaire at the end of the Digital Cinema Pilot. Your participation in this evaluation would be highly appreciated, as feedback from the pilot participants is our main source for improving the infrastructure. We would therefore like to ask you to fill in this questionnaire. Please note that by filling in and returning this questionnaire to us, you grant us permission to use your questionnaire for evaluation of the pilot only. The data you provide through this questionnaire will not be used for any other purpose; they will be used by the evaluation researchers only and not be distributed to anyone else. Thank you for your participation!

The questionnaire includes several question types:
- _ _ indicates that you have to fill-in information; subquestions of this type are preceded by a '-'.
- ___ /___ indicates that you have to make a choice; you can either circle the correct answer, or strike-through or remove the incorrect answer

1. Please provide us with the following few digits that are unique to you. This will enable us to compare the answers on a questionnaire at the end of the course to the answers you provide now, without making anything visible to us about your identity.
   - last two digits of your phone number: _ _
   - day of the month on which you were born: _ _
   - last two digits of your bank account: _ _
2. How old are you? _ _ years old
3. What is your sex? Female / male
4. How many years of experience as a teacher do you have? _ _ years
5. How would you describe your experience as a teacher in distance learning?
   - I have taught _ _ courses / modules etc. through distance learning.
6. [Question on type of courses]
7. Which of the following describes you as an Internet user best?
- I am a heavy user on a daily basis; any function that can be done through the Internet instead of traditionally, I will perform through the Internet, for example shopping, banking, web logs, conferencing.
- I would consider myself a moderate user, with regular once a week to daily use of common functions such as email, web browsing, chat.

- I am a very limited user, using the Internet less than once a week, and only if absolutely necessary.

8. Which statement describes your experience with using webbased discussion forums best?

- I have never participated in a web based forum / I have occasionally contributed to web based forums /I often use web based forums as a means for communication

9. Which statement describes your experience with using weblogs as a means of communication best?

- I have never created a web log entry / I have occasionally reacted in discussions on web logs /I often use web logs often as a means for communication

Questionnaire to the developers in the Digital Cinema pilot [draft]

Dear participant in the Digital Cinema Pilot,
Thank you for participating in the Digital Cinema Pilot. The Digital Cinema Pilot is a pilot within the TenCompetence project, which aims at establishing an infrastructure for life-long competence development. As the infrastructure is under development, it is very important for us to evaluate how the infrastructure is used in the Digital Cinema Pilot. As part of the evaluation, we have set-up this questionnaire. It is our intention to supplement this questionnaire by a questionnaire at the end of the Digital Cinema Pilot. Your participation in this evaluation would be highly appreciated, as feedback from the pilot participants is our main source for improving the infrastructure. We would therefore like to ask you to fill in this questionnaire. Please note that by filling in and returning this questionnaire to us, you grant us permission to use your questionnaire for evaluation of the pilot only. The data you provide through this questionnaire will not be used for any other purpose; they will be used by the evaluation researchers only and not be distributed to anyone else. Thank you for your participation!

The questionnaire includes several question types:
- _ _ indicates that you have to fill-in a short answer; sub questions of this type are preceded by a '-'.
- _____ indicates that you can type in longer text.
- ___ /___ indicates that you have to choose one of several answers; you can either circle the correct answer, or strike-through or remove the incorrect answer.
- □ a square box '□' indicates that you can choose several answers; tick all answers that apply.

1. Please provide us with the following few digits that are unique to you. This will enable us to compare the answers on a questionnaire at the end of the course to the answers you provide now, without making anything visible about your identity.
   - last two digits of your phone number: _ _
   - day of the month on which you were born: _ _
   - last two digits of your bank account: _ _
2. How old are you? _ _ years old
3. What is your sex? Female / male
4. How many years of experience do you have as a developer of
- 'paper' learning materials? _ _ years
- digital learning materials? _ _ years
- materials for distance learning? _ _ years
5. Which of the following component have you developed up till now for the Digital

Cinema pilot:

□ learning resources,

□ units of learning,

□ competence development programmes,

□ assessments (including assessments belonging to units of learning)

6. In general, developing learning resources, to me was:

- very easy / easy / neutral / difficult / very difficult

7. With respect to the development, could you indicate to what extent you encountered the following problems:

□ the software was difficult to use [this question for each package used]

□ determining the size of learning resources was difficult

□ determining the size of units of learning was difficult

□ [question on type of media preferred to encapsulate information]

□ matching the three components: competences, units of learning and competence development programmes was difficult

□ deciding which units of learning would comprise one competence development programme was difficult

□ deciding the possible learning paths that learners could follow through a competence development programme was difficult

□ it was difficult to have learning materials ready before the start of the course

□ applying the IMS LD standards was difficult

□ other problem, namely _____

□ other problem, namely _____

□ other problem, namely _____

□ other problem, namely _____

8. Please describe the difficulties that you encountered in your own words:

_____
_____
_____
_____
_____
_____

Pre-assessment Example

PRE ENROLL ASSESSMENT

Submit your answers to the following questions on the Blog. Consult the instructions published there on how to do that privately!
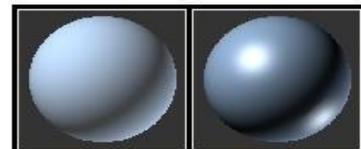
BASIC 3D

What is a Vertex?

a. Any point on the polygon where two sides (line segments) meet and connect.
b. A graphical representation of a position in space.
c. A two dimensional array.
d. Holds whenever the end positions of two curves or surfaces are coincidental.

Which of the following are mesh types in a 3D application?
a. NURMS
b. NURBS
c. BLOCKS
d. POLYGONS
e. a, b & c
f. a, b & d

Which material specular level is higher?
a.
b.

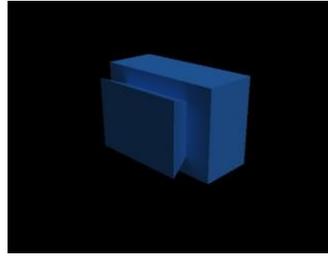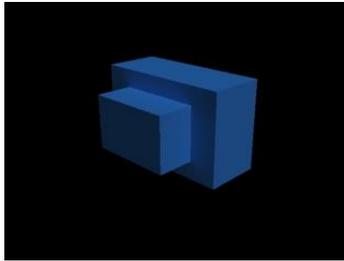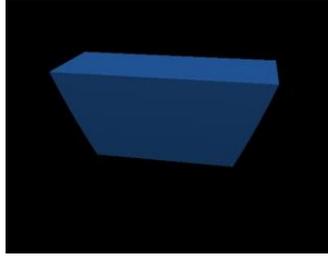Choose the corresponding deformation method

1

2

3

4

a. Bend (1)
b. Taper (4)
c. Extrude (3)
d. Bevel (2)

Which key would help you to delete vertex in a mesh while using the Remove
Edges option?
a. SHIFT
b. CTRL
c. ALT
d. ALT Grade

BASIC COMPOSITING

What is a Nested Composition?
a. When you create a new composition upon selected layers in your main
composition.
b. a composition link to a parent layer.
c. a duplicate set of a collection of layers.
d. a & b

Which Properties could you animate in a 2D layer?
a. X rotation
b. Position
c: Orientation
d. Scale
e. Opacity
f. b, d & e
g. a, c & d
h. b, c & e

Select the mode that will allow you to hide the darker zones of a layer:
a. Multiply
b. Additive
c. Screen
d. Overlay

What's is parenting?
a. synchronize changes to layers by assigning one layer's transformations to another layer
b. To convert a layer in an adjustment layer
c. To connect an expression to the anchor point of a layer
d. b & a

To make a layer rotate upon a different position than its center you should:
a. change the orientation value
b. change the pivot point
c. Link to a null layer
d. b & c