Constructivism vs. Objectivism: Where is difference for Designers of e-Learning Environments?

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Aims of this Session

- The primary purpose of this session is to discuss learning theories and their role in the design, development and delivery of e-learning.

- In order to so I will discuss:
  - Constructivism vs Objectivism;
  - Appropriate Pedagogical Models;
  - E-Learning Life Cycle;
  - Realities of Practice in HE.

Need for change?

- **Changing circumstances in Society and Education**
  - Studies show **disappointment with results of Higher Education** (Nabi and Bagley, 1999; Lange et al. 2000);
  - Industry asks for **more flexible and self-confident professionals** (Kakabadse and Korac-Kakabadse, 2000);
  - Deficiencies in traditional approaches create **graduates without transferable skills** required by work environments (for instance problem solving, interpersonal and IT skills).
  - Individuals need to develop **life-long learning skills** to cope with increasingly faster change;

- **Traditional teaching and learning methods may need revisiting …**

E-Learning Design

- When designing online learning environments, educational designers, like all other designers, call on prior knowledge and experience.
- They call to mind previous solutions and strategies they have used, have experienced, or have seen that fit the particular constraints of the current situation.
- These previous experiences play a central role in specifying the structure and content of e-learning environments, as well as the delivery strategies that make use of these.
- Therefore, if the pedagogical component of the design is not consciously considered and planned, the designer tends to incorporate his/her own model of learning into the environment, which may be inappropriate or inadequate for the learning activities planned.

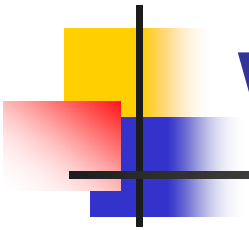
E-Learning Design

- When producing any learning materials, assumptions are made about the type of learning and the process of learning that it is hoped will take place.
- Hence, e-learning environments will always incorporate some form of learning model, which may or may not have been intentionally considered.
- So, one of the crucial factors to the success of an educational environment is that any assumptions that are made about the learner and the learning process, are incorporated into the design process in an explicit and consistent manner.
- Therefore, only with a clear sense of the theoretical foundations that underpin assumptions about learning and cognition, can an efficient online learning environment be appropriately designed..

Learning in HE

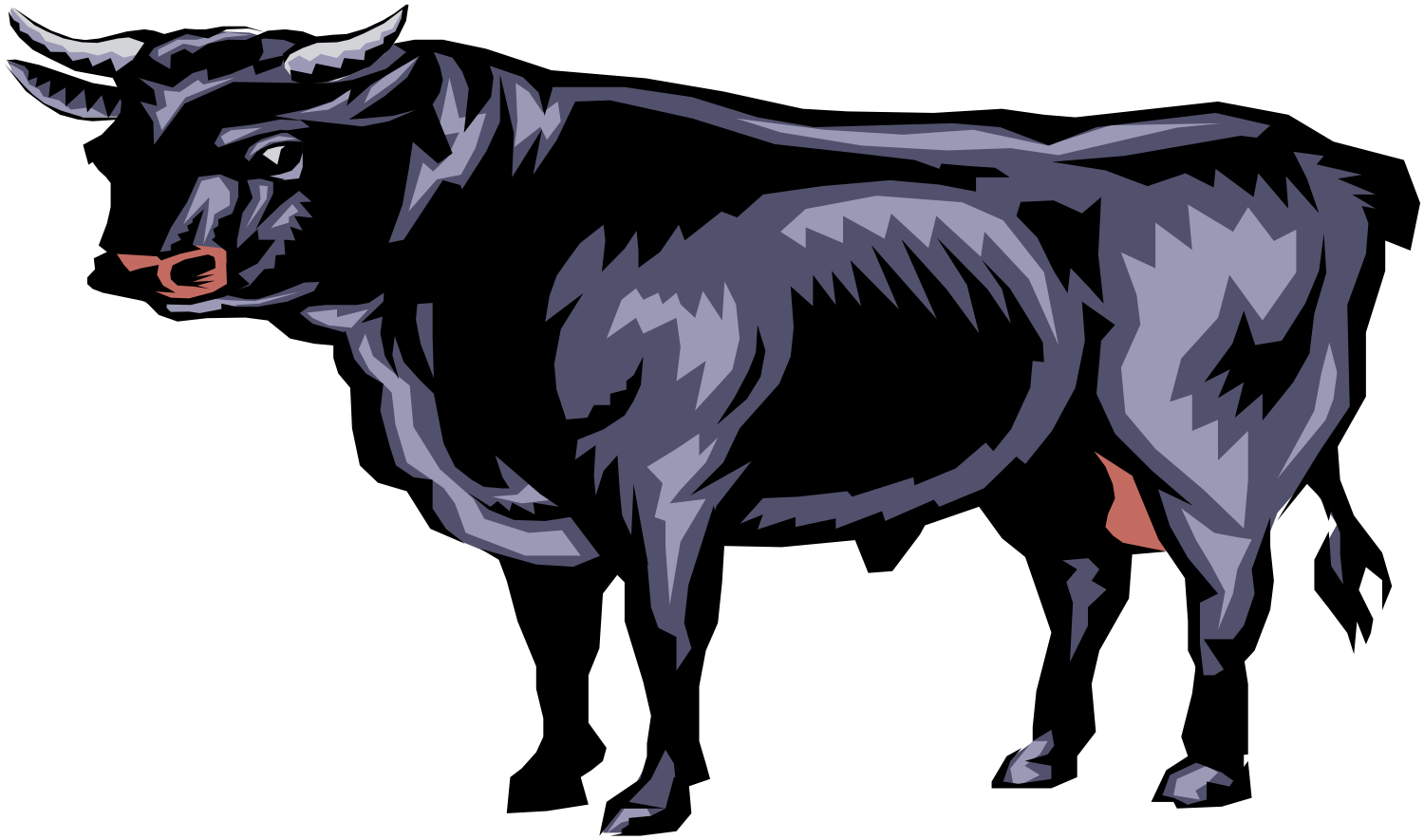
- In general terms, academic learning can be seen as:

"a series of activities that promote acquisition of high-level knowledge".



Why?

Why?



What was missing?

- Context;
- Different Perspectives;
- Interaction;
- Negotiation of Meanings.

Constructivism

"knowledge of the world is not a simple reflection of what there is, but a set of social artefacts; a reflection of what we make of what is there" (Shwandt, 1997)

"knowledge or meaning is not fixed for an object, but rather is constructed by individuals through their experience of that object in a particular context" (Duffy and Jonassen, 1992)

"knowledge is personally constructed from internal representations, which are in turn developed by using prior knowledge as a foundation. " (Spiro *et al.*, 1992)

Implications of Constructivism

- Knowledge Acquisition
  - meaning is imposed on the world by the individual;
  - there are many ways to structure the world and there are many meanings or perspectives for any event or concept;
  - meaning is rooted in, and indexed by, experience.

- Two major consequences:
  - learning activities must be “authentic activities” which must be embedded in realistic and relevant contexts (situated learning);
  - learners must be provided with the opportunity to explore multiple perspectives on an issue, that is, one activity is not enough to acquire a comprehensive view of a particular concept.

Multiple Perspectives?

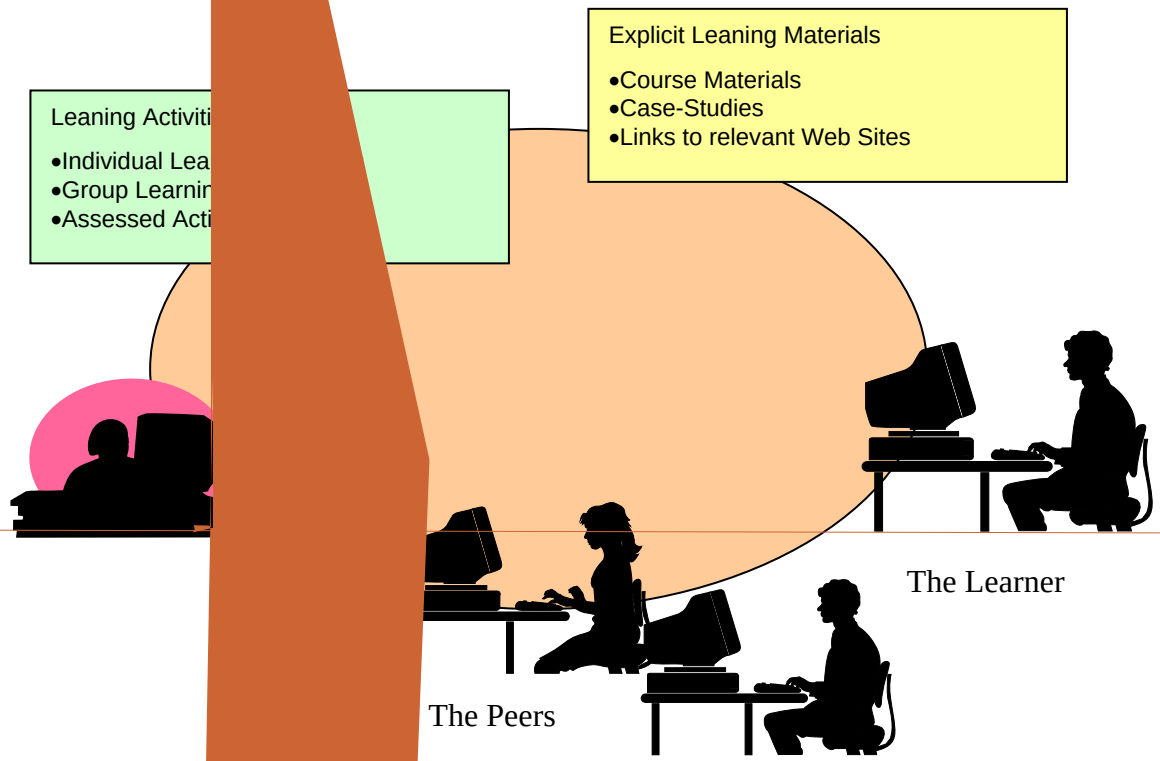
Different perspectives would be developed for the prison service dependent upon whether you saw it as:

- a punishment system
- a system to protect society
- a system to 'train' criminals
- a human storage system
- a business
- a public service.

Implications of Constructivism

- Nature of Human Interaction
  - The construction of knowledge by individual learners is based on the processes of interaction with peers, facilitators and experts.
  - Conceptions and ideas are compared, confronted and discussed through this interaction process. .
- Two very different types of interactivity:
  - Individual - private activity between the learner and the learning materials, which may range from the traditional textbook to computer-based simulations;
  - Social - activity between the learner and the tutor, the facilitator or other learners .

A Constructivist Pedagogical Model



Is there a set way to design, develop and deliver e-Learning?

- Well ... not in the fast, dynamic and continually changing educational environment that characterises HE nowadays.
- There is simple series of steps, recipe, template or checklist that can hope to predict and resolve the complex interactive processes involved in e-Learning.
- Hence, e-learning requires a practice based framework that allows practitioner reflection and the use of both empirical and research evidence.

E-Learning Environments

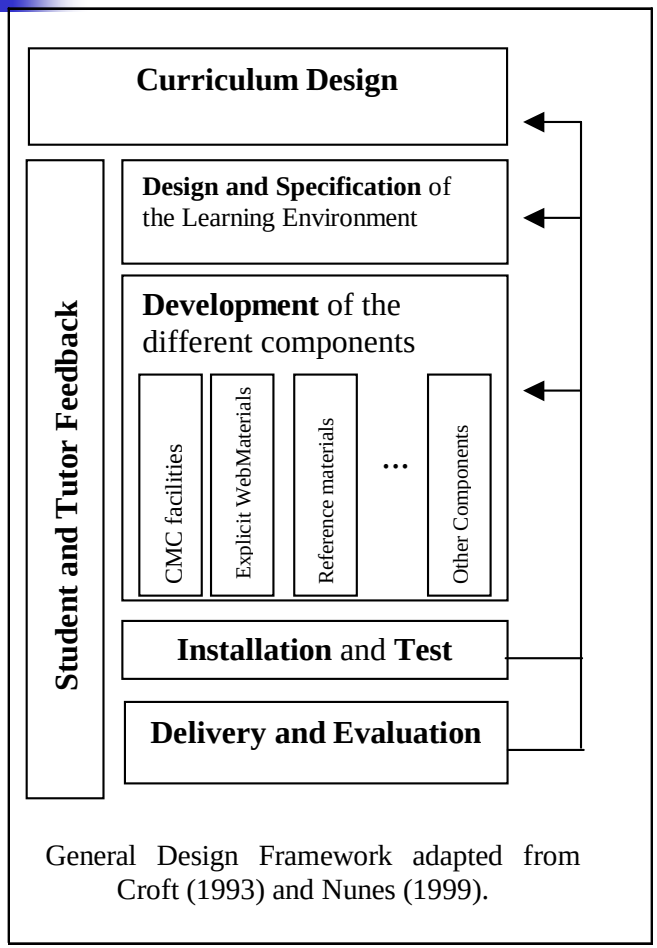
E-learning environments are essentially ICT based constructs that promote learning by supporting interactions between the tutor, the learner and her/his peers, the subject matter and the learning materials.

All these interactions may, or may not, be computer mediated.

E-learning environments are developed to resolve a particular educational purpose or learning need, and are thus limited to the solution of the problems arising from that need.

Learning environments are usually conceived, designed and implemented using appropriate design frameworks that range from curriculum design to course delivery.

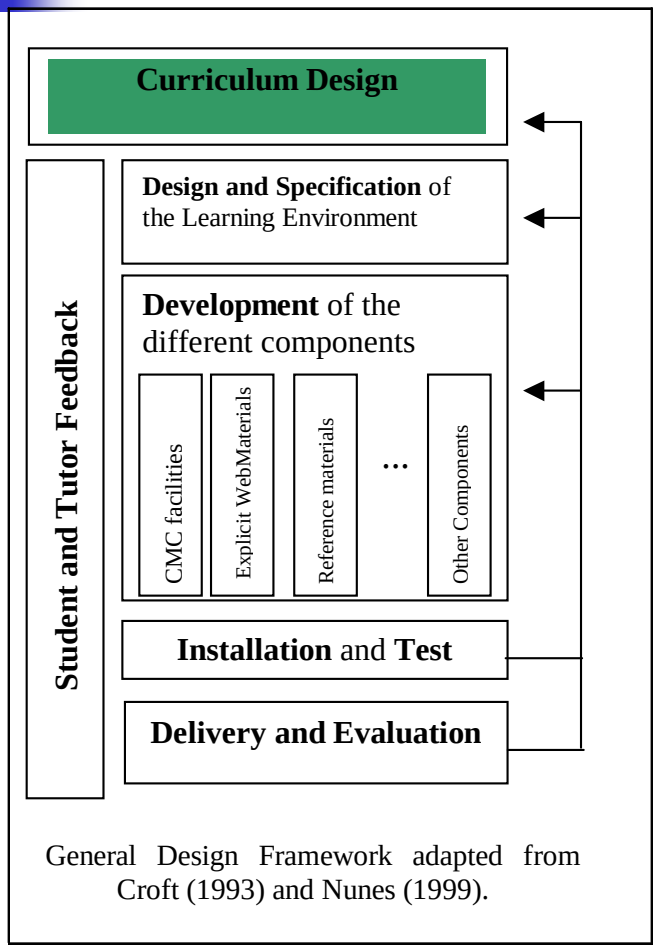
E-Learning Development Framework



General Design Framework adapted from Croft (1993) and Nunes (1999).

- Construction not Interpretation;
- Framework not a Methodology;
- Based on a Rapid Prototyping Approach.

E-Learning Development Framework



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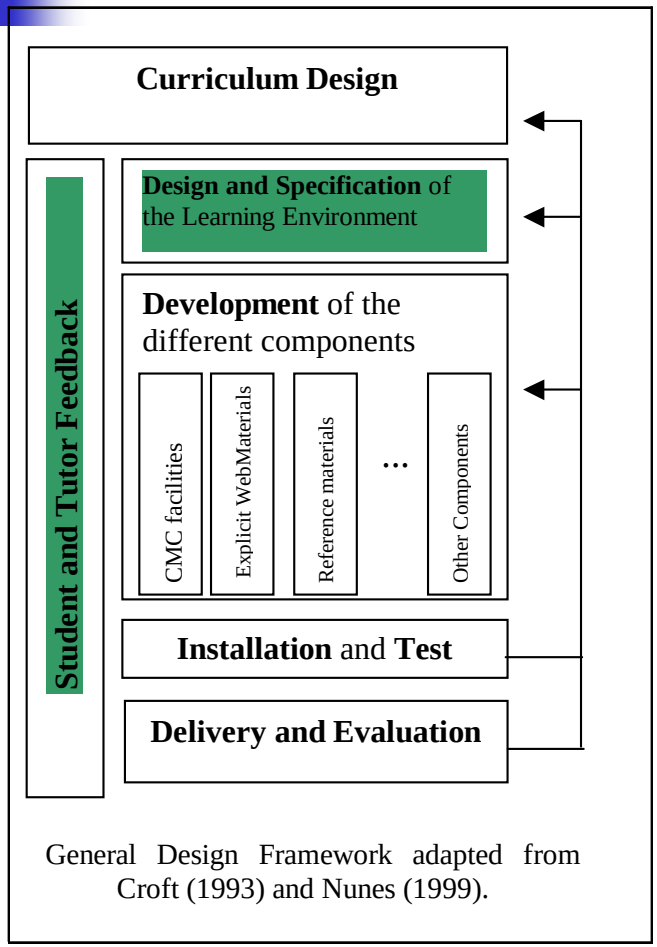
Curriculum Design

- Course/Module Aims;
- Learning Objectives;
- Teaching and Learning Methods;
- Syllabus Contents;
- Assessment Methods.

E-Learning Development Framework

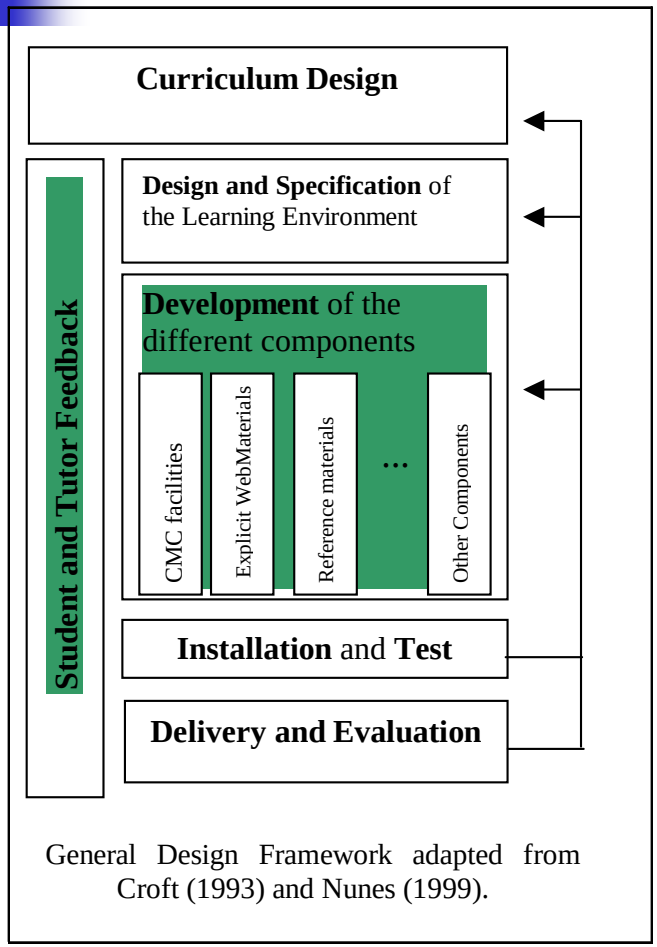


General Design Framework adapted from Croft (1993) and Nunes (1999).

Design and Specification

- Specification of Contents;
- Specification of Collaborative and Individual Activities;
- Design of the overall structure
- Specification of Technological Needs ->
  - asynchronous facilities;
  - synchronous facilities;
  - contents facilities;
  - links and other scaffolding facilities.

E-Learning Development Framework

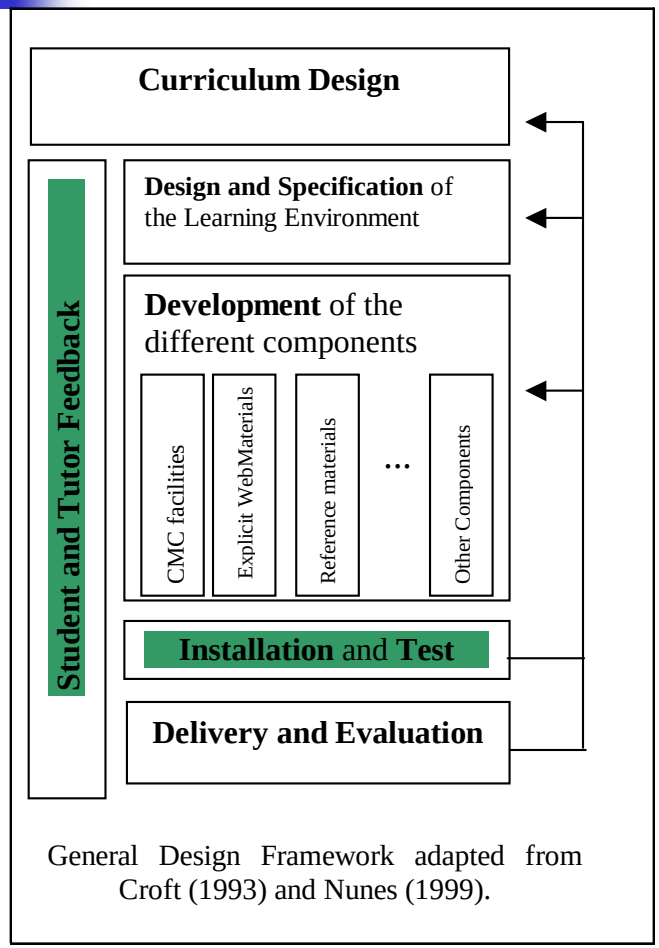


General Design Framework adapted from Croft (1993) and Nunes (1999).

Component Development

- Development of Contents;
- Design and Development of the different components of the learning environment:
  - asynchronous facilities;
  - synchronous facilities;
  - contents facilities;
  - links and other scaffolding facilities.

E-Learning Development Framework

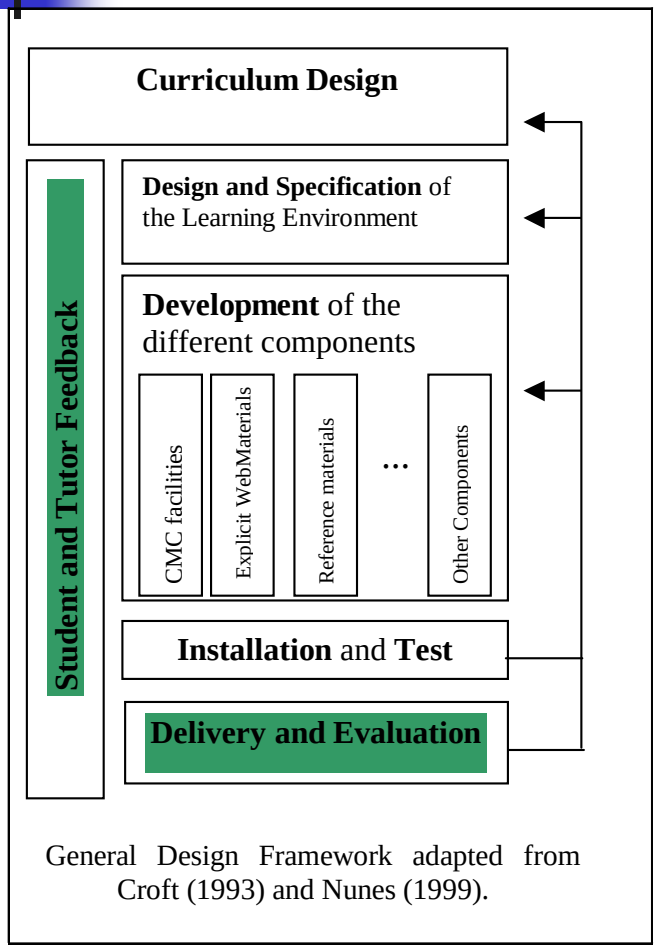


General Design Framework adapted from Croft (1993) and Nunes (1999).

Installation and Test

- Testing of the Individual Components separately;
- Pilot testing of the whole environment with both tutors and students;
- Preparing the environment for real use.

E-Learning Development Framework



General Design Framework adapted from Croft (1993) and Nunes (1999).

Delivery and Evaluation

Delivery

and

Evaluation !

The reality of e-learning practice is not as easy as it may seem.

E-Learning Practice - NICLS

- But ... constructivist online courses imply new ways of learning for which students are not prepared for.
- Most of today's HE students were taught in the traditional basic educational skills:

  reading, writing, spelling, handwriting and numeracy.

- New Learning Skills are required ...

  Networked Information and Communication Literacy Skills (NICLS)

E-Learning Practice - NICLS

- Networked Information and Communication Literacy Skills (NICLS) are required by e-learning, that is online and networked learning.

> *"Learning in which Information and Communication Technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors, between learner community and learning resources"*
>
> *(Goodyear, 2000)*

- This suggests that these basic skills can be divided in different two categories:
  - information skills;
  - communication skills.

E-Learning Practice - NICLS

- **Information Literacy Skills include**
  - recognising information needs,
  - distinguishing ways of addressing gaps,
  - constructing strategies of locating information,
  - locating and accessing information,
  - comparing and evaluating information, as well as
  - organising, applying and synthesising information.

E-Learning Practice - NICLS

- **Communication Skills include:**
  - Technical aspects of using of CMC;
  - Social aspects
    - Limitations and benefits of CMC require adaptation and changes in human behaviour for successful communication to take place
      - lack of social cues
      - conventions, behavioural norms and netiquette
    - Collaboration and co-operation online.

In **future** NICLS are likely to be addressed at primary and secondary education **but for now** ... NICLS must be addressed prior starting online modules.

E-Learning Practice – Tutor Skills

- **Online Tutoring**

- places greater emphasis on written skills;
- does not follow a linear conversation but instead promotes multiple conversations;
- does not confine tutoring to specific times;
- places greater emphasis on student-student learning;
- requires tutors to develop new ways of encouraging participation;
- requires tutors to assess the worth of online contributions.

E-Learning Practice – Tutor Skills

- Online Tutors must have the ability to:

- plan and organise delivery by clearly specifying learning objectives and outcomes;
- set learning agendas and providing leadership and scaffolding in learning activities;
- welcome and embrace diversity of learning outcomes, attitudes and styles;
- create an atmosphere of collaborative learning of which the e-tutor him/herself is often an integral part;
- be able to cope with and resolve on-line conferencing conflicts and difficult behaviours;
- encourage active construction of knowledge by being actively involved in discussions, activities and debates;
- develop and implement methods for learner feedback and reinforcement.

Evaluation ...

- Measurement of achievement of objectives of the course/module as a whole;
- Measurement of achievement of objectives of the individual components of course (e.g. units, learning activities)
- Evaluation of the quality and effectiveness of the course materials provided;
- Evaluation of the tutoring and support provided to the students;
- Measurement of the quality of the learning experience;
- Evaluation of the online environment;
- Evaluation of the face-to-face components;
- Measurement of achievement of student expectations and goals.

e-Learning Challenges

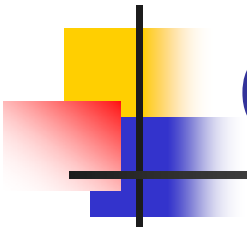
- Creating well designed e-learning environments;
- Ensuring that modules still adopt appropriate pedagogic approaches;
- Ascertaining that tutors are not only well versed in their subject matter areas, but are also able to facilitate the courses online.

Conclusions (1)

- Implementing e-learning means much more than just designing a few web pages and specifying their sequence.
- Recognising both the **technical** and **pedagogic** components of e-learning design and integrating them in a coherent framework is the key to the development of successful learning environments.
- The process of design and development is one of **co-construction and negotiation**, rather than **interpretation**.

Conclusions (2)

- **However** ... designing good learning environments is clearly not enough to guarantee the success of the learning process.
- Learners and tutors need to be trained and encouraged to acquire these online skills needed to be successful in a very different learning environment.



Questions

- **If** Questions later?

Then

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