Institute of IT Training

COMPETENCY FRAMEWORK FOR e-LEARNING DESIGNERS & DEVELOPERS

A guidance document on the Competency Framework for e-Learning Designers & Developers

Competency Framework for e-Learning Designers & Developers

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Competency Framework for e-Learning Designers & Developers

These competencies cover a broad range of possible e-Learning development activities, only a sub-set of which are likely to be required in a particular instance. The roles required of e-Learning developers vary enormously depending on the design of the programme, the extent to which the programme utilises existing designs or materials, the composition of the project team, how responsibilities are allocated within the team and the procedures and tools employed for the project.

Perform task analysis

- Determine the tasks to be trained.
- Identify sub-tasks and elements involved.
- Identify the knowledge, skills and attitudes required to complete the tasks efficiently and effectively.

Perform training needs analysis

- Identify the target audience for the training.
- Determine, for typical members of this target audience, the shortfall in knowledge, skills and attitudes compared to those required to carry out the tasks efficiently and effectively.
- Separate those shortfalls that can be addressed by training from those that require other strategies.
- Prepare a plan to meet the trainable shortfall in knowledge, skills and attitudes, to include measurable learning objectives.

Develop overall instructional strategy

- Develop an overall instructional strategy for the course, bearing in mind the nature of the learning objectives, the characteristics of the target audience and accepted principles for adult learning.
- Structure the content of the course into meaningful sections and arrange into a logical hierarchy or sequence.
- Structure each section into short, reusable learning objects, each addressing a single, main learning objective.
- Determine the overall mix of methods (self-study, web research, directed off-line activity, individual assignments, online group collaboration, online tutor support and intervention, face-to-face events, etc.) required to bring

about and support each stage in the learning process and to assess the learner's achievement of the learning objectives.

- Determine, taking account of any constraints imposed by the delivery platform, the overall mix of media (text, graphics, audio, animation, video, etc.) required to deliver the course content and/or facilitate skill practice.

- Determine the hardware and software environment required for implementation of the instructional strategy (including delivery of self-study materials, email, conferencing, etc.)

Develop strategies to meet learning objectives

- For each learning objective specified in the design document, determine whether the learning required is in the cognitive, affective or psychomotor domain (and, if cognitive, whether a fact, concept, procedure, process or principle) and apply the appropriate instructional strategy in each case.

- Determine the methods and media required to implement the strategy in each case.

- Apply accepted principles for adult learning:
  - make objectives and expectations clear
  - attract and maintain the learner's attention
  - focus on the learner's current problems, issues and job requirements
  - build on the learner's previous experience
  - help the learner to reflect on, review and digest new learning
  - demonstrate how the new knowledge and skills can be applied to real problems
  - enable learners to influence how the course progresses
  - keep the learner involved
  - introduce and summarise each unit
  - force the learner to think rather than just regurgitate facts
  - provide a variety of strategies to accommodate different preferences in learning style
  - provide regular opportunities for the learner to assess their progress
  - provide supportive and timely feedback

Prepare design document

- In consultation with subject matter experts, e-tutors, media specialists and technical specialists as appropriate, prepare a design document outlining the following:
  - task analysis
  - audience analysis
  - learning objectives
  - overall instructional strategy
  - overall structure
  - mix of methods and media
  - online tutoring requirements

- delivery hardware and software
- requirements for student management and record keeping

- Have the document approved before progressing.

Prepare project plan

- Where responsible for the overall management of the project, prepare a project plan detailing:
  - manpower requirements
  - provisional budget
  - provisional timetable
  - potential risks and associated preventative or contingent actions

Develop technical specification

- In collaboration, where appropriate, with technical specialists, determine the technical characteristics of the learning materials, to match the capabilities of the agreed delivery hardware and software and bearing in mind the potential need for maintenance, customisation and localisation:
  - browser (or other delivery software) brands and versions, including plug-ins and other add-ons
  - colour resolution (including palettes to be used, where applicable)
  - image, audio, video and animation formats (where applicable)
  - supported computers and operating systems, with minimum and preferred configuration in each case
  - minimum and preferred screen resolution
  - authoring tools to be employed
  - programming languages, tools and databases to be employed
  - data to be transferred to and from managed learning environments
  - compliance with current and emerging technical standards for interoperability with managed learning environments

- Determine documentation standards.

- Determine programming methodologies (where applicable).

- Determine programming modules required to support the instructional strategies and the user interface.

Prepare course content

- Write text content at a level appropriate to the target audience and without sexism, racism or ageism.

- Ensure text content is clear, unambiguous, accurate, up-to-date and free of spelling and grammatical errors.

- Provide overviews and summaries for each unit.

- Select media (images, audio, video and animation) to aid understanding or to facilitate practice or testing.

- Where interactivity is built-in to the materials:
  - provide regular opportunities for meaningful user interaction
  - select the means of interaction most appropriate to the instructional strategy
  - provide helpful feedback, directly related to the learner's responses
  - Design tests, simulations, written assignments and other activities that accurately measure achievement of each learning objective

Develop user interface

- In collaboration, where appropriate, with usability and accessibility specialists, graphic designers and technical specialists, construct a prototype user interface, taking into account accepted guidelines for usability:
  - text is legible and comfortable to read, with a minimal requirement for scrolling
  - a consistent layout, graphic design and navigational system is used throughout
  - the number of menu levels is kept to a minimum
  - navigational controls allow the learner to move backwards and forwards between pages in sequence, return to the top of long pages, move upwards through the menu hierarchy, access help at any time, exit at any time

- web-based materials conform to the Web Content Accessibility Guidelines of the World Wide Web Consortium

- Test the user interface on typical learners and obtain acceptance from the client before commencing full program development.

- Refine the interface until it satisfies user requirements.

Assemble script

- Bring together the script for the course as a whole, to include on-screen text, specifications for interactions, scripts for audio and video, and specifications for images and animations.

- Test the script with typical learners.

- Check that the script fully implements the instructional strategies and is achievable within the budget, timetable and technical specification.

- If necessary, refine the budget, schedule and task allocation.

Prepare media elements

- Prepare all media elements as specified in the script and in accordance with the technical specification, budget and schedule.
- Test all media elements for technical quality and conformity.
- Create backups of all source materials and masters.

Prepare software modules

- Prepare all required software modules in accordance with the technical specification, budget and schedule.
- Test that all modules conform to their specification and are sufficiently robust.
- Ensure all software is documented internally and externally.

Integrate components

- Use authoring tools to bring together text, media elements and software modules in accordance with the script.
- Ensure efficient use is made of templates and other productivity tools.
- Maintain strict version controls.
- Test each version for conformance to the script.
- Create backups of each version.
- Prepare masters in accordance with organisational standards.

Further Information

For further information, please contact the Standards Secretary on 0845 006 8858 or email standards@iitt.org.uk