Competencies in developmental assessment in young children

Design of an educational program based on whole-task learning

Cécile Guérin, Els Ortibus, Ann Roex, Geraldine Clarebout and Karel Hoppenbrouwers

KU Leuven, Belgium
Project received a **KU Leuven educational grant**, and performed in close collaboration with:

- Centre Environment and Health - Youth Health Care
- Centre for Developmental Disorders
- Academic Centre for General Practice
- Educational Support Office, Faculty of Medicine
Early identification of developmental disorders

- Critical to the well-being of children and their families
- Developmental surveillance = part of every well-child preventive visit
  - Assessment of motor, sensory, mental and emotional maturation
  - Detection, investigation and management of children with abnormal development of these functions
- Development of a specific learning environment to develop these competencies
The Four Component Instructional Design (4C/ID)-model

Guides the design of whole-task based learning environments:

- **Learning tasks**
  - Real-life, whole-task practice,
  - Organized in task classes with simple-to-complex sequencing
  - High variability of practice within each task class
  - Decrease of support and guidance per task within task class
- **Supportive information** (the theory)
  - Domain models, systematic approaches to problem solving
- **Procedural information** (the how to’s)
  - Just-in-time information, step-by-step directions…
- **Part-task practice** (focused repetitive practice)
Literature

The Four Component Instructional Design (4C/ID)-model
Aims & methods (1)

- To design a prototype for a 4C/ID-based learning environment in the training of Youth Health Care (YHC)
  - Derive learning objectives from YHC professionals’ daily tasks
  - Develop realistic authentic tasks to stimulate learners to apply the relevant competencies
  - Define supportive and procedural information to solve the tasks:
    - Videos: demonstrate the variability of normal development and subtle signs of possible development disorders
    - Documents (outline, framework, summary, flow chart…)
  - Integrate everything in an (attractive and user-friendly) electronic learning platform
Aims & methods (2)

• To assess the applicability of this learning environment (Sekoia©)
  o Electronic evaluation survey
  o Analytics of students’ activities
Literature

Design of the online learning environment ‘Competencies in developmental assessment in young children’

• **Pilot version (2014-2015): 5 modules including following topics:**
  - Risk and protective factors of early childhood development
  - Parental contribution to developmental surveillance
  - Primitive reflexes, postural reactions, tonus and position
  - Fine and gross motor development
  - Evaluation of neuromotor function

• **Online demo**
  https://beta.sekoialearn.com/portal/manama-jgz-studenten
Program evaluation

• Pilot phase: assessment of applicability of the learning environment
  o Perceived usefulness
  o Perceived ease of use

• Students online evaluation survey
  o Use of learning environment (18 items)
  o Design and content (18 items)
  o Perceived learning effect (4 items)

• 14 of 15 registered students filled out online questionnaire
Applicability assessment of program (1)

• Most obvious added value of online learning environment = for exercises
  o 69% students prefer online exercises to paper form
  o But 84% prefer reading printed document to on screen reading

• Most students confirm that the program:
  o stimulates learning
  o challenges to solve real-life situations
Applicability assessment of program (2)

- All students report:
  - To have learn a lot on development of young children by following this program
  - High satisfaction about own progress on this theme
- Two third of the students report to be better prepared when coming to the classes
- Lower satisfaction about in depth education in the classes (cases discussion in group, opportunity to put questions…) → Pay extra attention to coordinate well the classes on online learning environment
Conclusions

• A learning environment designed according to the 4C/ID model contributes to the acquisition of relevant competencies in YHC

• Preliminary assessment of the learning environment ‘Competencies in developmental assessment in young children’ (pilot phase) shows its applicability in the training of YHC professionals
Future

• Next phase:
  o Design of additional modules (implementation 2015-2016):
    • Speech and language development: multidimensional approach, milestones
    • Child speech and language development delay and disorders
  o Migration to new electronic learning platform (Sofia©)
  o Thorough assessment of program learning process
    • Teachers survey
    • Observation of classes
    • Relation between performances objectives, education program and reached competencies (by assessment of students’ performances before and after following the learning program)