An Application of The Knowles' Adult Learning Theory to Develop an Advanced Practice Course for Cytotechnologists

Gulrukh Kizilbash MBBS, MLT

Diagnostic Cytology Program, The Michener Institute of Education at UHN

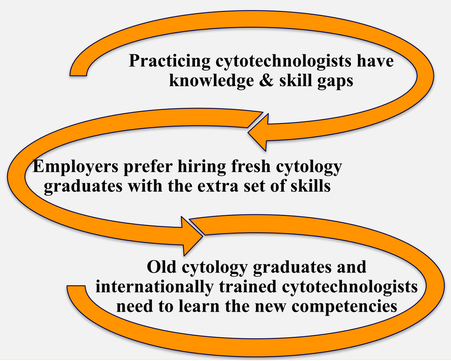
Abstract

An adult learning course has been developed utilizing The Knowles' Adult Learning Theory, which provides a framework of how adults learn. The application of this theory to the development of an Advanced Practice Course will help the practicing Cytotechnologists and internationally trained technologists to acquire new sets of skills, and further their knowledge in the field of Cytology.

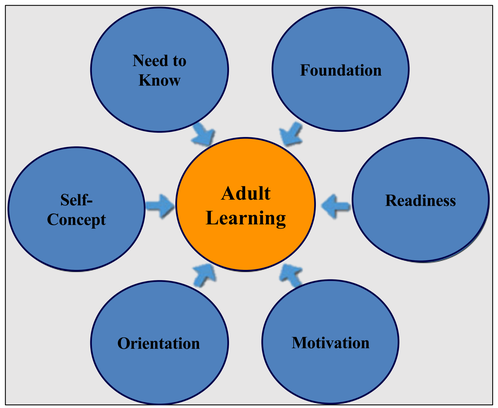
Introduction

- Over the past 10 years, there has been an enormous drop in the Cytology work volumes, due to automation, introduction of HPV Vaccine, and revision of Cervical Cancer Screening Guidelines[2]
- To meet the changing professional demands, Canadian Society of Medical Laboratory Science (CSMLS) revised the Diagnostic Cytology Competency Profile, to include Tissue Preparation, Molecular Testing and Advanced Pathology in 2014[2]
- The Diagnostic Cytology Program at Michener went through a major program redesign to include these new core competencies in the curriculum
- As of memo sent on July 4, 2018 by The College of Medical Laboratory Technologists of Ontario (CMLTO), the additional competencies have been acknowledged, and now these specialties are included on the Cytotechnology Certificate of Registration.

Educational Dilemma



Knowles' Adult Learning Theory



Learner Analysis of Cytotechnologists

Need to know	Learners are aware of the **changing practice patterns** in cytology. They understand that they **do not meet the current workforce expectations**
Self-Concept	Recognizing the **workplace needs**, the **choice** of competencies in the expanded competency profile, and their **own interests**, learning can be self-directed
Foundation	Cytotechnologists come with a **wide range of knowledge, transferable skills and experiences**
Readiness	Cytotechnologists seem ready to learn the additional set of skills to cope effectively with the **growing demands of the field** and to demonstrate **superior performance**
Orientation	This learning is very **relevant** to what they do on a daily basis and in some instances they can immediately implement these newly learnt skills into their current job
Motivation	Some internal motivating factors can be **passion** for the profession, **interest** in learning new skills, **self- esteem**, getting a **leadership role** and an overall **better job satisfaction**

Application of Theory

Process Elements	Applications
Preparing the learner	• Initial point of contact- orientation session • Course Outline • Overview of the emerging changes in the field and workforce
Setting the climate	• Logistical considerations • Multimedia resources • Respectful and supportive environment • Make sessions more collaborative, rather competitive • Promote interactivity - whiteboard, online polls
Mutual planning	• Needs assessment -Evaluate learner knowledge gaps • A survey for employers- Identification of specific training needs based on site specific workloads • Invite potential learners to course design committee meeting
Diagnosis of needs	• Targeted needs assessment- Learners to post their educational dilemmas prior to the orientation • Guided self-direction to come from the facilitator • Simulation experience to decide the length of clinical rotations • E-Portfolios and self-reflection
Setting Objectives	• Learners to set goal-oriented course objectives • Competency checklists for summative assessments • Empowerment and accountability towards learning
Designing learning plans	• Identification of relevant resources • Resources- journal articles, literature review, discussion boards, Telepathology and Virtual Interactive Software etc. • Mutual planning with the learner to find out the best fit for their learning style
Learning activities	• Learning Contracts • Both learner and facilitator to discuss and sign the learning contract • Revise the learning contract (if major edits)
Evaluation	• Self-evaluations • Be open to constructive feedback- debriefing, stop, start, continue surveys, onsite assessments • Final summative evaluation- E-Portfolios with reflections on learning and experiences

Course Design

Module 1: Leading and Managing People	○ **Online Module** ○ This module will allow development of management and leadership skills to effectively lead a laboratory team, and contribute to, and achieve departmental purposes and goals
Module 2: Research Methodologies & Biostatistics	○ **Online Module** ○ This module is for lab technologists who are interested in clinical research. This will give them the foundational knowledge as to how to design a study & measure and analyze data
Module 3: Quality Management Systems & Lab Accreditation	○ **Online Module** ○ This module will benefit learners to understand the structure required to support a quality management system and continuous improvement
Module 4: Histo - techniques	○ **Online+ F2F+Clinical Rotation** ○ This extensive module will give the necessary knowledge and hands on experience in simple grossing, tissue processing, embedding, microtomy, staining, IHC, flow cytometry, and other ancillary procedures
Module 5: Molecular Biology- Theory & Techniques	○ **Online+F2F+Clinical Rotation** ○ This course will prepare the learners to understand the theory and techniques, and get some hands on experience of molecular testing methods
Module 6: Rapid Onsite Evaluation Procedure	○ **Online+F2F+Clinical Rotation** ○ This module will enable learners to attend EBUS procedures in both a simulated and a real OR setting, engage in communication with other healthcare team members, setup, prepare and analyze samples for adequacy and detailed morphologic assessment
Module 7: Inter-Professional Collaboration (IPC)	○ **Online+F2F+Clinical Rotation** ○ This module will allow learners to investigate professional legislation and standards, and explore the foundations of IPE and IPC. It will also enable to develop interprofessional conflict management skills

Modules can be taken in any order. A mandatory practicum extension will be done after completing all modules, in the area of interest and the specific workplace demands.

SWOT Analysis

Strengths:
. Tailored, relevant & flexible
. Structured & methodical
. Promotes motivation, engagement, knowledge retention & information gathering
. Utilization of transferable skills & tapping the experience
. Mutual learning experiences
. Utilization of existing equipment and lab space

Weaknesses:
. Self-directed learning challenges
. Lack of support systems
. Disengagement leading to unproductivity
. Lack of participation
. Schedule conflicts
. Funding and cost issues
. Building this course- huge time commitment
. Clinical site arrangement for learners

Opportunities:
. IPC
. Employer flexibility to move around staff on a need basis
. Cross training opens doors to hospital based jobs
. New avenues of learning
. Involvement in overlooked areas of the lab- Research, leadership, quality management, liaison with other lab disciplines and front line practitioners

Threats:
. Low course enrolment rates
. Lack of buy-in by clinical sites
. Unpredictable future changes in the competency profile
. Funding restrictions MOH
. Elimination of Allied Health Professional Development Fund
. Misinformation or biases
. Learner involvement in regulatory restricted practices

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