



Memento for interprofessional learning

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Abstract

The vast increase of technical, diagnostic, and treatment possibilities and deepened understanding of molecular biology has revolutionized diagnosis and treatment of cancer and thus has great impact on pathology. Different professionals are responsible for proper evaluation of the results and their translating into an accurate diagnosis and appropriate treatment. Next to expertise, a close interaction between clinical molecular biologists, pathologists, and oncologists is required; it is crucial that these professionals speak “the same language.” Key to this is communication skills and creating possibilities for collaboration in a meaningful context. Here, we present an interprofessional, educational workshop model and we describe the parameters that contribute to effective learning by specialists.

Keywords Molecular diagnostics · Pathology · Oncology · Learning · Interprofessional

A modern pathology laboratory has practicing pathologists and clinical molecular biologists each with their own expertise, role, and responsibility. Exchange of relevant information across both professionals is essential to properly apply and integrate test results for state-of-the-art pathology reporting. Here, we stress the importance of interprofessional learning.

Implementation of complex tests and understanding the impact and potential is a difficult process. Clonality analysis of antigen receptor gene rearrangements in lymphoma is such a complex test, which has gained wide acceptance through well-cited publications, but causes problems in routine practice. It was decided to set up an educational workshop to promote the correct use of clonality analysis so that patients are not over- or under-treated. Because it turned out that the integration of knowledge from different disciplines (histopathology and molecular biology)

was the core problem, a case-based, interprofessional workshop was chosen.

The annual workshop (<http://www.euroclonality.org/workshop/>) is a real hands-on workshop; most of the time is taken for case discussions. Participants are only accepted when they come as a team representing different disciplines from one center: a pathologist and a molecular biologist. Each team has to bring at least one illustrative case that created problems and present the pathological findings, clinical context, and the molecular data. This guarantees a minimum level of experience of the participants and sufficient knowledge to be actively involved in the discussions. There are also educational lectures given by the faculty, that is from various disciplines as well.

To evaluate the learning process, a questionnaire form is filled out by the participants. This revealed important parameters for effective learning:

1. A safe environment: the workshop takes place in a small group. The small group, the easily accessible faculty, and the shared meals (lunches and dinners) provide a safe learning environment, which is an important parameter for effective adult learning [1, 2].
2. Interprofessional approach: the pathologist and the molecular biologist learn together. There is exchange of relevant information, from both sides. The professionals feel their perspective valued. This approach entails translation between the different “professions”, thereby learning “to speak the same language” [3].

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3. A meaningful context: the workshop is focused on discussion of own cases, which is a powerful enhancer of learning [4]. Similar cases might have been seen by other participants in their practice and are therefore educational for the entire group.
4. Immediate feedback is given by the faculty at multiple levels: (a) about the results and interpretation, (b) addressing deeper learning covering new applications or understanding of the pathobiology, (c) addressing the way the participants will regulate their continuous learning process. Providing feedback contributes greatly to the learning process [5].

In oncology diagnostics, there are many fascinating novel developments. Medical professionals should maintain lifelong learning skills and drive their own educational process to develop new competencies. Our workshop has been organized for more than 10 years, is very well appreciated, and has been effective to build new competences. Our experience may assist other organizers in developing similar training programs.

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Authors' contributions PJTA Groenen is the founder of the EuroClonality Educational Workshop, Workshop faculty; clinical molecular biologist (in pathology); 2006–now and chair of the EuroClonality Foundation.

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PJTA Groenen: idea for the manuscript, wrote the first manuscript, performed literature search and processed comments and prepared the final manuscript. AW Langerak, F Fend, and JHJM van Krieken carefully read the manuscript and commented on the manuscript. All authors read and approved the final manuscript.

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Compliance with ethical standards

Conflict of interest EuroClonality is a scientific foundation that together with the foundations EuroMRD and EuroFlow, is connected to the ESLHO foundation/EHA scientific working group. The objectives of the EuroClonality Foundation are aimed at innovation, standardization, and education in the field of diagnostic clonality analysis. The revenues of the previously obtained patent (PCT/NL2003/000690), which is collectively owned by the EuroClonality Foundation and licensed to Invivoscribe, are exclusively used for EuroClonality activities, such as for covering costs of the Working Group meetings, collective WorkPackages, and the EuroClonality Educational Workshops.

Informed consent Because fully anonymized data were shown and discussed during the workshops, no informed consent was obtained.

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References

1. Kitchen M (2012 Feb) Facilitating small groups: how to encourage student learning. *Clin Teach* 9(1):3–8
2. Schumacher D, Englander R, Carraccio C (2013) Developing the master learner: applying learning theory to the learner, the teacher and the learning environment. *Acad Med* 88:1635–1645
3. Akkerman SF, Bakker A (2011) Boundary crossing and boundary objects. *Rev Educ Res* 81:132–169
4. Roedinger HL (2013) Applying cognitive psychology to education: translational educational science. *Psychol Sci Public Interest* 14(1): 1–3
5. Hattie J, Timperley H (2007) The power of feedback. *Rev Educ Res* 77:81–112

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