Teaching and radiology

Radiology education has undergone substantial changes in recent years. After the COVID-19 pandemic, virtual and face-to-face learning are struggling to play a role in the training process; however, many aspects of the teaching-learning process remain stable. Our learning activities are still based on seminars, rotations with supervised reading and evaluations. The teacher is relevant in the process in fundamental aspects such as the design and implementation of teaching activities, evaluation methods and mentoring.

The role of the teacher has evolved and has gone from the traditional role of dominating and transmitting knowledge to being a facilitator of the learning process, functioning as a guide for students. The teacher is key in the formative process of his or her residents; he or she must participate in the construction of the curriculum and favor the experiential environment such as the one that develops in the practice sites. According to John Dewey's theory, experiences are critical determinants in the quality of learning and it is the duty of the facilitating teacher to provide adequate experiences to develop this learning (1). The teacher is in charge of creating an appropriate space where learning is optimal -which occurs when an environment of concrete experiences and conceptual models is combined- that allows not only to know the theory, but also to apply it by solving problems and making decisions. The approach of learning activities that meet these characteristics is intended to generate motivation in the student to self-regulate; that is, to set his own goals and project himself as a critical individual who uses all the tools that academic practice provides him during his training for an adequate professional practice.

Teaching, at any level, is necessarily linked to the process of evaluation and decision making on the competence or acquisition of knowledge and skills of a student. Evaluation implies the application of instruments with a high degree of reliability, validity, equity, comparability and transparency (2). The application of absolutist evaluation techniques, detached from the learning objectives and results, lacks rigor, prevents the objective assessment of the formative competencies and achievements of the residents and favors the low reliability in the validity of the evaluation process. Teachers, besides being facilitators of knowledge, must be precise and accurate observers when making a judgment on the performance or acquisition of competencies of a student by means of an evaluation. Therefore, the competencies of the evaluator, as well as his or her expertise and ability to be a good observer, have implications and consequences for those being evaluated, which may be of different kinds. In order to achieve the effective implementation of evaluation strategies in the learning processes, a training process for teachers and residents on the quality characteristics, advantages and disadvantages of the different methodologies should be proposed, involving different actors in the training process. Therefore, according to Moreno-Olivos (3), to be a competent and reliable evaluator, it is necessary to combine characteristics that go beyond theoretical knowledge, social context and the nature of the objective of the evaluation, even involving skills in interpersonal relations, integrity and objectivity.

Radiology academic programs seek to strengthen and develop research during training as a complementary skill that is part of the subjects of the first years of training. In relation to research competencies, mentors can help health professionals engaged in clinical research to navigate the challenges associated with integrating practice and research when clinical questions arise (4). It is key for faculty and researchers to engage in the mentoring process to more effectively motivate scientific publication. In the case of graduate students, research mentoring can be a successful strategy that should be applied in practice settings to improve research skills. Therefore, the development of competent, skilled individuals, with skills acquired from their postgraduate training, ensures a continuum of high quality needed for patient care and the continuing education process.

The understanding of the role of the teacher in the teaching-learning process, the importance of using appropriate tools for the construction of knowledge and the mentoring processes, especially in research, are pillars that allow positioning the teacher as a facilitator to promote the learning of our residents and students.

References

1. Kassirer JP. Teaching clinical reasoning: case-based and coached. Acad Med. 2010;85(7):1118-24. doi: https://doi.org/10.1097/acm.0b013e3181d5dd0d
2. Schuwirth LTW, Van der Vleuten CPM. How 'testing' has become 'programmatic assessment for learning. Health Professions Education. 2019;5(3):177-84. doi: https://doi.org/10.1016/j.hpe.2018.06.005
3. Moreno-Olivos T. Las competencias del evaluador educativo. Rev. educ. sup [internet]. 2015;44(174):101-26.
4. Brown RT, Daly BP, Leong FT. Mentoring in research: A developmental approach. Professional Psychology: Research and Practice. 2009;40(3), 306- 13. doi: https://doi.org/10.1037/a0011996

Felipe Aluja Jaramillo, MD, MHPE
Specialist in Radiology and Diagnostic Imaging
San Ignacio University Hospital.
Master in Education for Health Professionals
Assistant Professor, Department of Radiology and Diagnostic Imaging.
School of Medicine, Pontificia Universidad Javeriana.
Professor of the Specialization and Master in Education for Health Professionals.
Agreement Pontificia Universidad Javeriana, Universidad del Rosario.