

How can we make Osteopathic Research enjoyable for undergraduate students? Let's implement Team-Based Learning in our pedagogical pathways!

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Background

Osteopathic research has a key role in the undergraduate curriculum to educate responsible osteopaths, who will be able to proficiently apply the principles of evidence-based practice in their clinical activities. Consequently, in 2019 the research department of Istituto Superiore di Osteopatia (ISO) Milan performed several end-year focus groups with students, which gave us the chance to identify some weaknesses in our teaching process.

One of the biggest issues was the struggle for students to translate theoretical concepts into real-life clinical problems. This dysfunctional experience supported the spread of some frustrating feelings, disorientating beliefs and self-referential behaviours among students, who declared to perceive as traumatic the transition between pre-clinical and clinical phases.

Moreover, another kind of feedback was related to the pedagogical design of the research courses. In fact, a significant number of students considered our lessons poorly stimulating, too lecture-based and time-consuming.

It is our duty as educators to give our students a fantastic pedagogical experience, which can actively support them in developing critical thinking skills and interacting confidently with scientific literature. Secondly, we have to preserve the whole osteopathic community, which must continue to be surrounded by competent, trustworthy and reliable members.

Therefore, between 2020 and 2022 we planned and implemented in our undergraduate research courses an evidence-based student-centred pedagogical strategy using Team-Based Learning (Parmelee *et al.* 2012).

How we did it

During this whole pedagogical reform, we firmly followed the four points of Guilbert's educational spiral for health personnel (Guilbert 1987):

1. Defining educational objectives.

A precise analysis was conducted regarding the clear designation of general, intermediate and specific objectives in accordance with the framework for higher education qualifications in England, Wales and Northern Ireland (levels 4 and 5) and Bloom's taxonomy (Quality Assurance Agency 2008).

2. Planning an evaluation system.

The evaluation system followed the main feature of Team-Based Learning: individual readiness assurance test (every single student received 10 multiple-choice questions in 10 minutes), team readiness assurance test (groups of students debate on the same previous 10 questions in 10 minutes), team application (drafting a project consisting of a protocol study of a randomized controlled trial or an intra/inter-rater reliability study) and peer evaluation (every student within each group evaluates his teammates on their contributions to the success of the team's project). Finally, every student wrote a reflective assessment regarding their personal experience in their team using Gibb's reflective cycle.

3. Preparing and implementing an educational programme.

Instead of performing long and teacher-centred lectures, we embraced the flipped classroom framework (Tolks *et al.* 2016), accordingly with Dale's cone of learning. This pedagogical model alternates two features. Firstly, we recorded five original, asynchronous, 20-minutes webinars on YouTube in order to give students the theoretical bases of research. Then, we organized four synchronous activities which gave students the opportunity to apply, analyse, evaluate and discuss what they previously learned in webinars in a problem-solving fashion.

4. Implementing evaluation.

In order to evaluate in detail this pedagogical reform, we relied on Kirkpatrick's evaluation framework and its four levels (Biggs and Tang 2011).

More specifically, the first level has been evaluated by our HR department to estimate students' rate of interest, motivation and enjoyment of our teaching.

For what concerns the second level, we applied the QUAREL and CONSORT checklists to evaluate teams' projects, REFLECT Rubric to evaluate reflective assessment, and specific checklists to evaluate readiness assurance tests and peer evaluations. In conclusion, the final grade of every single student of this course followed the Parmelee scheme in Team-Based Learning using the following weighted average: 35% (reflective assessment), 30% (team application), 30% (individual readiness assurance test) and 5% (peer evaluation).

Regarding the third and fourth levels, we collected some preliminary encouraging data which suggest that this reform produced a concrete impact on students' behaviour and performance in their further academic years.

References

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