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Editorial

Flipped classroom and a new hybrid “Teach the Airway Teacher” course: an innovative development in airway teaching?



We read with interest the article from Phillips and Wiesbauer [1], in this issue of Trends in Anaesthesia and Critical Care, which focuses on the increasing value of flipped classroom concept. The importance of face-to-face teaching goes without saying but e-learning and nowadays hybrid learning, which means combining all these modalities, has been established as a meaningful approach to enhance theoretical and clinical teaching and learning, overall in particular circumstances.

The ongoing COVID-19 pandemic has imposed a major change in airway teaching resulting in many institutions and conferences being forced to reduce on-site hands-on exposure and experience to devices and procedures [2].

Teaching airway procedures was already considered absolutely mandatory [3], and it becomes paradoxically even more incumbent in this period and challenging in SARS Covid-19 patients, as proper patient care and proper infection precautions involves proper skill and knowledge far beyond the usual airway management education.

There might be general agreement that clinical teachers (in our special case the airway teachers or tutors) should be properly prepared for their duties but no corresponding society has issued a recommendation to do so. The “Teach-the-Airway-Teacher” (TAT) course, designed and supported by the European Airway Management Society (EAMS), aims to prepare future airway teachers and to support established teaching clinicians. The TAT-course suffered similar to that of clinical teaching, as the course was designed as face-to-face sessions with lots of small-group learning and teaching simulation. For two years no courses happened.

Airway management teaching is a multitasking challenge involving knowledge and practical clinical skills expertise, as well as the teaching of the application of human factors and nontechnical skills during securing a patent airway in a patient. As opportunities for real-life training and experience in difficult airway management are limited, didactic lectures are not the “golden bullet” for teaching airway management in clinics and courses. Therefore, often first experience in different airway management strategies are gained by integration of intubation manikins or cadavers for technical skills learning, and simulation to practice nontechnical skills [4]. With the ever increasing attention to airway safety, the continuous technological evolution and the appearance of new devices, it is a challenge but mandatory for both educators and practitioners in airway management to look out and integrate innovative models of training in their repertoire to ensure the advancement and retaining of airway skills [5].

Trying to keep the airway education at a high level, despite the ongoing pandemic, EAMS adapted its TAT-course integrating e-learning and the flipped classroom concept not only as a “bridge”

alternative during the pandemic but also to have more time for teaching simulation and practice at the on-site classes. In their article, Phillips and Wiesbauer [1] go very precisely through different aspects of a general medical flipped classroom which EAMS has tried to implement with the new “hybrid-TAT” course. However, airway teaching has its specifics on topics and skills to learn which translates for the airway teacher into specific learning objectives. Developing that, we realized that “one size does not fit all”, and as we nowadays have individualized medicine we also need to look into “individualized” teaching by setting up a tailored hybrid TAT course for the airway teachers.

First of all, the pre-course preparation and assignments are crucial for both, the teachers and the learners. Teachers have to meet the “needs of the learners as perceived by the learners”. Focusing on the learners, the audience of such courses, means to know the learners a careful selection of learners, including their motivation, their learning objectives and their expectations, as well as some information about their professional and teaching background. That implies getting into contact beforehand to get to know all these details and this is one of the strengths of having such a hybrid on-line approach before the learners come to the face-to-face course. This is also the opportunity to develop individualized learning goals and approaches to acquire the needed competences to become a superb airway teacher. Once the teaching target has been identified and defined we move to the core part of the course.

The flipped classroom concept so nicely described by Phillips and Wiesbauer [1] in their article, offers the unique opportunity that the learner manages his or her learning of theoretical concepts via pre-class assignments that also includes problem solving and preparation for the teaching simulation in the on-site classes. This allows learners to engage with the topic at a time to suit irrespective of location. It also enables them to read airway teaching related articles, watch pre-recorded brief presentations on airway teaching related topics and prepares them at their own pace the airway teaching simulations. All these pre-course tasks and assignments need careful evaluation with the aim to assess if this course concept is able to teach the required competences of an airway teacher. The crucial thing to avoid is “homework overload” by these pre-course assignments as that might put learners into troubles as they are all already involved in busy clinical routines overall in such an “emergency period” during the current COVID-19 pandemic.

During the following on-site classes in the face-to-face sessions, the TAT participants discussed with the TAT-teachers what they extracted from their previous reading and they shared their experiences with the group of learners. Practical airway teaching simulations enabled them to reflect on their teaching strength and areas

for improvement. EAMS arranged a first “pilot” TAT-course in the new flipped classroom hybrid format. The faculty debriefing together with the participants’ feedback provide important information for continuous improvement of the course.

Based on this last year’s developments we summarized our first experience of the hybrid TAT course held in Valencia, Spain, in October 2021, which introduced the flipped classroom concept into the TAT course. TAT participants feedback assured that looking into theoretical points on airway teaching and learning via pre-recorded short (8–10 min long) presentations and corresponding provided reading enabled them to acquire new knowledge depending on when they had time. The digital platform allows the TAT participants to schedule their study time on their own according to their previous knowledge and needs for repetitions, if necessary. They reported to have a sense of control over the contents as they passed a brief assessment test of the e-learning part of the TAT-course. They felt better prepared and arrived calmer at the on-site TAT course venue because they knew already the TAT-educators from the recorded presentations and had much clearer expectations concerning their learning objectives for the small group teaching sessions and they could easily prepare the tasks for the airway teaching simulations. On the other hand, the TAT-educators had a bit of work to produce and record the presentations but reported back to reduce the cognitive load during the on-site TAT, as they needed only the preparation for face-to-face small groups sessions which avoided long durations of in-person classes. A side effect of the flipped classroom was a reduction of teaching time in the face-to-face part of the TAT-course. The small group sessions included simulations of teaching technical airway skills as well as the equally important non-technical skills of airway management, effective feedback rehearsal, workshops on how to organize airway management teaching events, and individual analysis and reflection on an airway teaching session pre-recorded by the TAT-participants. This feedback is encouraging for further development of this hybrid TAT-course. We might include more interactive virtual sessions to discuss in small groups and real cases scenario simulations on site to practice the teaching of human factors and crisis management in (difficult) airway management. In summary the advantages of a hybrid TAT-course extracted from this first pilot was that the TAT-participants knew from the beginning the instructors, but more time is needed to establish this contact virtually. The participants could achieve a similar knowledge level by answering and passing the short test questions in the e-learning program. The facilitation of learning according to the participant’s needs, including repetition was well appreciated. To avoid cognitive overload we used only short recordings of sessions which urged the educators to reduce and optimize their theoretical content to the essential. The knowledge improvement test was seen as a learning chance. All that resulted in the optimization of the on-site course duration.

The flipped classroom as a modern teaching strategy is definitely a new experience for all of us and requires a mentality change on both sides, the teachers and the learners [6]. On the one hand, the TAT-faculty is called to understand the real added value of the flipped classroom concept of teaching and they need to incorporate it into their teaching. This change in the mental frame of teaching is of central importance, as we know that the teacher’s motivation is translated into the learner’s motivation. In the same way we hope to see a substantial increase of this blended teaching way also in the local departmental or congress airway courses. We also realized that most probably, the TAT-program needs to include a dedicated section, explaining to future airway teachers how to manage a flipped classroom.

On the other hand, there is a need to explain to the TAT-learners in detail the rationale, the aimed targets, and the benefits of a blended hybrid TAT-course. The change of roles, from a kind of passive student to an active participant and creator of their own education, becoming an important part of the new hybrid blended TAT which has its educative framework base in the flipped classroom concept.

As in the saying: “When one door is closed, another door opens”, it may be that this forced stop of traditional courses during the COVID-19 pandemic over the last 2 years has a positive effect to use the opportunity to introduce novel concepts in airway teaching and to optimize our clinical airway training opportunities, as well as to improve the quality and effectiveness of our airway training courses [7]. We are confident that this new teaching method – the flipped classroom and hybrid courses – can be, partially or entirely, adopted even after the COVID-19 pandemic is over.

According to Darwin’s Origin of Species “It is not the strongest of the species that survives, nor the most intelligent; it is the one most adaptable to change” [8]. Keeping the quality of airway teaching high despite a pandemic is definitely possible. All we need to do is adapt our teaching strategies to the challenges, test the new developed model of the hybrid TAT-courses, check if the goals of delivering high quality educational is met, and the learners achieve the aimed competence in teaching and feel satisfied with the course format. All these efforts hopefully are then translated into safety of airway management for all our patients. “If we want... we can do it!”

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PCM is EAMS board member; RG is EAMS treasurer and board member; GC, PCM, and RG are EAMS TAT course educators.

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