■ Letter to the editor

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Learning about e-learning – the 34th International Epilepsy Congress experience

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In 2019, the International League Against Epilepsy (ILAE) Education Task Force published a roadmap delineating a competency-based curriculum for epileptology [1]. This curriculum covers a comprehensive array of skills and knowledge in epilepsy through seven domains, 42 competencies and 124 learning objectives. This content is stratified in three levels of expertise in epileptology in order to assist educational content creation and implementation: (1) entry level, (2) proficiency level, and (3) advanced proficiency level.

In light of this sophisticated guidance, and aligned with its learning objectives, the 34th International Epilepsy Congress (IEC) – held virtually on August 28th to September 1st 2021 - offered multiple educational opportunities (*table 1*). These programs, which were impeccably conducted by worldwide experts in the field, included teaching courses/sessions and interactive sessions, each lasting on average 60 minutes, as well as half-day and full-day teaching courses.

The educational program of the 34th IEC was, overall, very well received by its audience. Upon surveying audience perception, we learned that three quarters of surveyed attendees had a very good/excellent impression of the congress' teaching program. More than one third (36%) of respondents attended the congress primarily because of its teaching program, and 29% stated that the teaching program was the second most important reason to do so. Moreover, the majority (60%) of surveyed attendees stated that the teaching program was the main or second main aspect of the congress that they found most useful. Lastly, almost two thirds (62%) of surveyed attendees expressed that the teaching program very much fulfilled its educational goals and expected learning outcomes.

Among all types of educational opportunities offered by the 34th IEC, online-based interactive sessions consisted of a novel teaching avenue. One of these sessions, led by the authors of this letter, was entitled *Is this a spike? Or Not? Operational criteria for epileptiform EEG discharges*. As its title implies, the session focused on an overview of the recently proposed [2] and validated [3] operational criteria for defining interictal epileptiform discharges (IEDs) on EEG. This session, which was held live via Zoom, was divided into three stages. First, we showed the audience 10 candidate IEDs on 10-second epochs both in bipolar and average montages, in addition to their voltage maps. Six of them had been deemed non-epileptiform and four epileptiform, based on expert consensus and/or externally validated data (patients' previous video-EEG data capturing their habitual spells). After showing each of these 10 sharp transients, one by one, we asked the attendees whether these were epileptiform or not through the polling feature of Zoom. The average attendee score was 59% (pre-test).

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▼ **Table 1.** Teaching program of the 34th International Epilepsy Congress.

Teaching courses and sessions	Interactive sessions	Half-day teaching courses	Full-day teaching courses
EEG source imaging virtual workshop	An international classification of cognitive disorders in epilepsy: the IC CoDe	Epilepsy diagnosis	Neuroimaging in epilepsy
Counselling patients with epilepsy, caregivers, and relatives	Case studies in epilepsy and pregnancy	EEG in diagnosing patients with epilepsy	
Developmental and epileptic encephalopathies	Changing driving policies	Status epilepticus	
VIREPA courses: EEG (basic and advanced)	Connectomics in epilepsy	Pharmacological treatment	
VIREPA courses: sleep and paediatric EEG	Epilepsy: from big data to better data		
Video session: is this epilepsy or not?	Epilepsy and intellectual disability – best papers		
Video session: focal seizures	Facilitating research in resource-poor settings: the Fogarty Program		
Video session: generalized seizures	Is this a spike? Or not? Operational criteria for epileptiform EEG discharges		
	Key aspects of transitioning your patients from paediatric to adult care		
	Neurostimulation and minimally invasive techniques		
	New neonatal seizure classification: interactive quiz		
	Psychotherapy for psychogenic non-epileptic seizures after the CODES trial: where next?		
	Self-management in epilepsy: time to incorporate it into your practice		
	The ketogenic diet: highlights for the centennial following its birth		
	Towards an understanding of drug resistance in epilepsy		
	Treatment of young children with epilepsy: OFF label use ON the table		

The second stage of the session was a 20-minute, pre-recorded lecture given by Dr. Sandor Beniczky, explaining the International Federation of Clinical Neurophysiology (IFCN) operational criteria for defining interictal epileptiform discharges [2, 3]. In the third stage, we again showed the audience the same 10 candidate IEDs, one at a time, and asked them to rate them as epileptiform or not via the same polling feature of Zoom. The average attendee score was 70% (post-test). Compared to the average attendee score prior to the pre-recorded lecture (59%), the increase of 11 points was statically significant (p=0.01; Wilcoxon matched pairs test) thereby reflecting the efficacy of this online-based interactive teaching method.

Following collection of the audience's unbiased answers, we provided the attendees with the correct answers and discussed the rationale behind these answers by collectively assessing each of the six IFCN criteria for each candidate IED.

The success of the 34th IEC educational endeavours is not only exciting but also quite promising, from an epilepsy education standpoint, because it suggests that e-learning is both well perceived and has the potential to improve one's knowledge. In fact, it may go beyond increasing one's knowledge as it may expand one's "know how"/competence as well [4].

We advocate that incorporating well-designed, interactive teaching programs into neurology conferences, irrespective of their nature (live vs. virtual), has great educational potential and should be widely considered. Additionally, we recommend that these programs are developed in the context of clear learning objectives and outcomes, and that they follow the principles of adult learning theory [5] - such as focusing on highest-yield content and prioritizing active learning strategies. Lastly, we encourage educators to track the performance of teaching programs both qualitatively and quantitively in order to advance our understanding of these endeavours and continue to improve their quality. ■

Disclosures.
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References

1. Blumcke I, Arzimanoglou A, Beniczky S, Wiebe S. Roadmap for a compentency-based educational curriculum in epileptology: report of the Epilepsy Education Task Force of the International League Against Epilepsy. *Epileptic Disord* 2019; 21(2): 129-40.

2. Kane N, Acharya K, Beniczky S, Caboclo L, Finnigan S, Kaplan PW, *et al*. A revised glossary of terms most commonly used by clinical electroencephalographers and updated proposal for the report format of the EEG findings. Revision 2017. *Clin Neurophysiol Pract* 2017; 2: 170-85.

3. Kural MA, Duez L, Sejer Hansen V, Larsson PG, Rampp S, Schulz R, *et al*. Criteria for defining interictal epileptiform discharges in EEG: a clinical validation study. *Neurology* 2020; 94: e2139-47.

4. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med* 1990; 65(9): S63-7.

5. Cooper AXZ, Richards JB. Lectures for adult learners: breaking old habits in graduate medical education. *Am J Med* 2017; 130(3): 376-81.