



# Open Research Online

---

The Open University's repository of research publications and other research outputs

## ETHICS in AIED: Who Cares? An EC-TEL workshop

Conference or Workshop Item

How to cite:

Holmes, Wayne; Iniesto, Francisco; Sharples, Mike and Scanlon, Eileen (2019). ETHICS in AIED: Who Cares? An EC-TEL workshop. In: EC-TEL 2019 Fourteenth European Conference on Technology Enhanced Learning, 16-19 Sep 2019, Delft (Netherlands).

For guidance on citations see [FAQs](#).

© The Authors

Version: Accepted Manuscript

---

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's [data policy](#) on reuse of materials please consult the policies page.

---

[oro.open.ac.uk](https://oro.open.ac.uk)

## **ETHICS in AIED: Who Cares? An EC-TEL workshop**

### A workshop for the 2019 EC-TEL conference

Dr Wayne Holmes, Francisco Iniesto, Professor Mike Sharples, Professor Eileen Scanlon and Maria Di Gennaro

*Institute of Educational Technology, The Open University*

#### **Ethics in AIED**

The 2018 and 2019 AIED conferences workshop ***ETHICS in AIED: Who Cares?*** Was an important but only a first step towards addressing the far-reaching ethical questions raised by the field of AIED. The reality is that, although there are encouraging signs, most AIED research, development and deployment continues to take place in what is essentially a moral vacuum. In short, still today, little research has been undertaken, no guidelines have been provided, no policies have been developed, and no regulations have been enacted to address the specific ethical issues raised by the application of AI in educational contexts.

For these reasons, for the EC-TEL 2019 conference, we proposed a third ***ETHICS in AIED: Who Cares?*** Workshop. This built on the outcomes of the previous workshops (which includes a journal paper and commissioned book). It was an opportunity for researchers who are exploring AIED ethical issues to share their insights, to identify key ethical issues, to map out how to address the multiple challenges, and to inform best practice. The overarching aim was to help establish a basis for meaningful ethical reflection necessary for innovation in AIED.

The workshop began with “ETHICS in AIED: What’s the problem?”. Then was followed by “Addressing the Challenges”, round-table small-group discussions, each triggered by an ethics vignette or a provocative statement; and then “Mapping the Landscape”, in which two EC-TEL conference participants gave a fifteen-minute presentation on an ethics in AIED research issue with which they have been engaging. The workshop concluded with a whole-workshop discussion considering what Ethics in AIED 2025 will look like. A core outcome for this workshop was to identify and propose Ethics in AIED policy for the International AIED Society and future EC-TEL conferences to address.

#### **Introduction**

While the range of AI techniques and technologies researched in classrooms and discussed at conferences continues to grow, the ethical consequences are rarely fully considered – at least, while there is much ethics research for AI in general, there is very little published work considering the ethics of AIED in particular. In short, as a field (while we apply our university research regulations), we are continuing to work without any fully-developed moral groundings specific to AIED.

As the TEL community is aware, the field of AIED raises an indeterminate number of as yet unanswered ethical questions. To begin with, concerns exist about the large volumes of data collected to support AIED (such as the recording of student competencies, emotions, strategies and misconceptions). Who owns and who can access this data, what are the privacy concerns, and who should be considered responsible if something goes wrong?

Other major ethical concerns centre on AIED computational approaches. How should the data be analysed, interpreted and shared? How should the biases (conscious or unconscious), that might impact negatively on the civil rights of individual students, be remedied – especially given that the scale of AIED in the coming years is likely to amplify any design biases (e.g. about gender, age, race, social status, income inequality...)?

However, and this is all too often ignored, the ethics of AIED cannot be reduced to questions about data or computational approaches. AIED research also needs to account for the ethics of **education** (which, although the subject of decades of research, is most often overlooked). For example, AIED research needs to address the fact that many of its educational assumptions are contested by the learning sciences community.

All that said, the ethics of data, computational approaches, and education are the 'known unknowns'. But what about the 'unknown unknowns', the ethical issues raised by AIED – i.e., at the intersection of data, computation and education – that have yet to be even identified?

Ethics in AIED questions include:

- What are the criteria for ethically acceptable AIED?
- How does the transient nature of student goals, interests and emotions impact on the ethics of AIED?
- What are the AIED ethical obligations of private organisations (developers of AIED products) and public authorities (schools and universities involved in AIED research)?
- How might schools, students and teachers opt-out from, or challenge, how they are represented in large datasets?
- What are the ethical implications of many ITS and other AIED approaches adopting an instructionist approach to learning?
- What are the ethical implications of not being able to easily interrogate how AIED deep decisions (using multi-level neural networks) are made?

Strategies are also needed for risk amelioration since AI algorithms are vulnerable to hacking and manipulation. And where AIED interventions target behavioural change (such as by 'nudging' individuals towards a particular course of action), the entire sequence of AIED enhanced pedagogical activity also needs to be ethically warranted. And finally, it is important to recognise another perspective on AIED ethical questions: in each instance, the *ethical cost of inaction and failure to innovate* must be balanced against the potential for AIED innovation to result in real benefits for learners, educators and educational institutions.

### **Workshop format**

Building on the organisation of the successful workshop in 2018, the 2019 half-day **ETHICS in AIED: Who Cares?** The workshop comprised an introduction and four parts:

- **Intro: Welcome and Introduction**  
We welcomed participants and briefly summarised the outcomes of the first and second **ETHICS in AIED: Who Cares?** Workshop (held at AIED 2018 and 2019).
- **Part 1: ETHICS in AIED: Addressing the Challenges**  
Round-table small-group discussions, each triggered by an ethics vignette or a provocative statement, and reported back to the main workshop.
- **Part 2: ETHICS in AIED: Mapping the Landscape**  
Two EC-TEL conference participants to each gave a fifteen-minute presentation on an ethics in AIED research issue in which they have engaged.
  - ***I would not worry so much about buying an intelligent robot but spending money on buying a sexist robot.*** Covadonga Rodrigo - UNED

- **Digital Informed Consent to Personal Data Use: a Mixed Methods Study of Information Uptake, Comprehension and Decision-making.** Ekaterina Muravyeva, José Janssen, Kim Dirx and Marcus Specht - OU Netherlands
- **Part 3: Envisioning ETHICS in AIED 2025**  
A whole-workshop discussion considering what Ethics in AIED 2025 will look like (what issues need to be overcome, what new ethical issues might arise, which stakeholders need to be involved). The overarching aim was to identify and propose ethics in AIED policies for the International AIED Society and future EC-TEL conferences to address.

### Outcome

Take-away for the audience: ETHICS in AIED: Who Cares? Served as a community-building event. Participants left with a clearer understanding of ethical issues central to AIED and how they might contribute towards addressing the challenges for the future of ethics in AIED.

The workshop helped us further develop a shared understanding of the multiple challenges and points of contention around the ethics of AIED that we can draw on when developing and researching AIED technologies. As the third of a series of workshops through which the community will further build a firm ethical foundation for our work, the aim was that it to inform policy for the International AIED Society and future EC-TEL conferences.

### References

- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence In Education: Promises and Implications for Teaching and Learning*. Center for Curriculum Redesign.
- Iniesto, F., Rodrigo, C., & Hillaire, G. (2019). Applying UDL Principles in an Inclusive Design Project Based on MOOCs Reviews. In: Gronseth, Susie and Dalton, Elizabeth Dalton eds. *Universal access through inclusive instructional design: International perspectives on UDL*. New York: Routledge
- Sharples, M. (2019). *Practical Pedagogy: 40 New Ways to Teach and Learn*. Routledge.

### Workshop organisers

**Dr Wayne Holmes** is a Lecturer in the Institute of Educational Technology at the Open University, UK, where he leads on AIED. He has been involved in education and educational technology for more than 25 years, receiving his PhD in Education (Learning and Technology) from the University of Oxford. He also has degrees in Philosophy (MA) and Education (MSc Oxon). His research interests are in the learning sciences, AIED, and ethics. Currently, he is a member of the UK Parliament's All-Party Parliamentary Group on AI Education Taskforce and is working with UNESCO developing policy guidelines for AI applied in education. He is also lead author of the recently published book: "Artificial Intelligence in Education. Promise and Implications for Teaching and Learning".

**Francisco Iniesto** is PhD candidate by a Leverhulme Trust Doctoral Scholarship in Open World Learning based in The Open University researching accessibility in MOOCs. Francisco's background is as a Computer Engineer from UAM with a M.Sc. in Educational Technology from UNED. Francisco is a member of the Global OER Graduate Network and collaborates with the Digital Inclusion UNED-Vodafone Foundation Research Chair.

**Professor Mike Sharples** has a first degree in Computational Science and a PhD from the Department of Artificial Intelligence at the University of Edinburgh. His research focus is the human-

centred design of technologies for learning. His main current interest is 'citizen inquiry' – a fusion of citizen science and inquiry-based learning. He leads development of the nQuire platform, in collaboration with the BBC, to support mass participation in social science experiments. As Academic Lead for FutureLearn ([www.futurelearn.com](http://www.futurelearn.com)), Mike informed its social learning at massive scale, based on a pedagogy of 'learning as conversation'. I established the *Innovating Pedagogy* annual report series, to inform teachers and policymakers of new developments in teaching, learning and assessment for a digital world. Other current interests include blockchain for education and strategies for digital transformation in higher education. His website is [www.mikesharples.org](http://www.mikesharples.org)

**Professor Eileen Scanlon** is Associate Director of Research and Innovation in the Institute of Educational Technology at the Open University, UK. As Associate Director I have institutional responsibility for developing research strategy in educational technology. I am particularly interested in journeys between formal and informal learning, and I am one of the organisers of the [FutureLearn](#) academic network.