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**Title:** Teaching Medical Humanities in Medical Schools with Open Education Resources

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**Abstract:**

In this chapter we will explore various ways in which open education resources might be utilised in the teaching of medical humanities in medical schools. Open education resources are generic open access materials in a particular field, which can be used by educators and students alike to support teaching and learning. They might be particularly useful when an institution lacks staff with specific expertise to teach essential but ‘minority’ subjects. The open and generic nature of these resources almost always means that they can be used flexibly to suit the teaching and learning contexts in which they are used. However, that same generic character means that they will be rarely directed towards specific learning outcomes, and therefore educators might struggle to fit them into teaching programmes, or have to alter their own learning outcomes and curricula in order to fit the resources available.

Here, we outline and reflect upon different ways we have used open access medical humanities materials developed by the ALCMAEON project to support teaching in UK medical programmes the medical schools at the University of Bristol and University of St Andrews respectively. We begin by discussing the difficulties often encountered in teaching medical humanities in the crowded medical curriculum, before outlining what open education resources are and how they can help, with particular reference to the ALCMAEON project. We then outline and reflect on three different ways in which the ALCMAEON resources have been used to support teaching and learning with medical humanities, and consider the wider lessons we can draw from that experience about the use and development of open education resources to support learning and teaching of ‘minority’ subjects in medical curricula.

**Keywords:** open education resources, medical humanities, medical ethics, medical curricula, ALCMAEON

## 1 Introduction

The benefits of medical humanities (alternatively termed health humanities) for medical students are numerous, but they can nonetheless be difficult to include within the crowded medical curriculum in the United Kingdom (UK) context. Such difficulties are notable in the way that introducing more medical humanities into curricula has occasionally been discussed by scholars in terms of ‘infiltrating’ it, or alternatively replacing other subjects within the curriculum with medical humanities [1–3]. As Harvey et al suggest, such a strategy has been successful “*in gaining a foothold for humanities in medical curricula*”, but reinforces a binary where the animating factors of medicine are represented by the humanities and the scientific expertise by biomedicine [4 p.6, 5]. They suggest, in line with the Wellcome Trust’s support for “*critical medical humanities*”, disciplinary “*entanglement*” that foregrounds “*the required knowledge, reasoning, and thinking practice that makes for good clinical practice*” which involves both scientific knowledge and an ability to understand context and uncertainty [4,6]. The corollary for medical students of such a critical medical humanities approach is that engagement with humanities approaches is potentially relevant at any point of their medical education: patient encounters are rarely reducible to either solely biomedical knowledge or contextual interpretation, but typically involve both. The corollary for medical educators is to provide ways for students to encounter humanities approaches throughout the medical curriculum. As it stands the only mandatory requirement in UK medical curricula that would typically be considered ‘humanities’ is the teaching of medical ethics and law, which is clearly indicated in the UK General Medical Council’s ‘Outcomes for graduates’ [7, p.9-10]. There also exists a consensus statement on core curricula in the UK for medical ethics and law [8], but the extent to which this is implemented in full will vary from medical school to medical school. Other humanities subjects tend to be included in the medical curriculum at the discretion of the institution to varying degrees, based on the interests of staff and the added value they are felt to bring. Specialist intercalated degrees in medical humanities are offered by several UK institutions but these are naturally taken by a minority of students. Several institutions offer no sustained engagement with medical humanities outside medical ethics and law at all.

However, even including the mandatory ethics and law teaching, within UK medical schools, the onus has typically remained on individual academics integrating medical humanities within curricula at points perceived to be particularly amenable to such integration. Such an approach is pedagogically sound and sensible, but reduces the opportunities for entangling medical humanities more broadly across UK medical curricula. We suspect that a broad approach to

entangling medical humanities within the medical curricula will need to involve a wider range of medical educators than simply subject specialists (though specialist medical humanities scholars are certainly a benefit to any medical school). Precisely because medical humanities approaches are so relevant across medical curricula, relying on specialist individuals to cover the whole curriculum is impractical. At the same time, there should be room for educators focused on the more overtly ‘scientific’ aspects of medicine to include more or less medical humanities content as they view appropriate for relevant learning outcomes. One size will not fit all in this context, but we advocate including at least some medical humanities material across all aspects of the medical curriculum. To facilitate the inclusion of appropriate content, we further advocate the use of open education resources developed by medical humanities scholars for broad and flexible use within medical curricula. This takes the onus on developing medical humanities content away from non-specialists whilst enabling them to include such content within teaching materials as they see fit.

The myriad ways that medical humanities can improve medical education across the curriculum has been well-explored by scholars elsewhere [4,5, 9–16]. Our purpose in this chapter is to suggest ways that medical educators can utilise the potential of open access education resources to entangle medical humanities within UK medical curricula. In other words, we are less concerned in this chapter with the why and what questions and are more concerned with the how. How can medical educators, broadly conceived, use open education resources to entangle medical humanities throughout the medical curriculum? In answering this question, we first provide a short overview of what open education resources are, before outlining a set of such resources developed as part of the ALCMAEON project ([alcmaeon.pixel-online.org](http://alcmaeon.pixel-online.org)), which both authors participated in at the University of Bristol. We then provide three broad and flexible strategies through which we (identified where appropriate as RTB and JI) have used open education resources with examples from our own teaching.

## **2 Open Education Resources and ALCMAEON**

Open education resources are free to access teaching and learning resources that can be used by any teacher, usually anywhere in the world (as appropriate). They vary widely in scope, comprehensiveness and quality, and might include, *inter alia*, any combination of learning outcomes, curriculum design, lesson plans, teaching slides, handouts, images and audio-visual resources.

Open education resources are in principle a very positive thing, and can offer many pedagogical benefits, including exposure to different teaching practices, increase opportunity for

collaboration, and improved access to materials [17]. Particularly relevant to the latter, these resources can be helpfully time saving for educators, can provide a structure to base teaching on, and they are to a greater or lesser extent ‘validated’ (in the sense that they are ideally produced by both educational and subject experts). As a result, they might be particularly useful for educators who are not themselves subject experts, but are nonetheless required to develop teaching in subjects outside their direct expertise for their institution. This is often the situation that educators in medical schools find themselves in when required to deliver medical humanities education. Whilst some medical schools have access to a full range of humanities subject experts, others do not, and educators will have to teach outside of their disciplinary expertise. Non-specialists may often find themselves having to design and deliver medical humanities content, and open educational resources can be especially helpful to them. Alternatively, a lack of subject experts may often be used as a reason for not including medical humanities in the medical curriculum, despite its value being acknowledged, and the availability of open access educational resources in medical humanities can help circumvent a lack of expertise and allow inclusion of medical humanities in the curriculum when it is wanted but when expertise is lacking.

In general, the open and generic nature of these resources almost always means that they can be used flexibly to suit the teaching and learning contexts in which they are used. However, that same generic character means that they will be rarely directed towards specific learning outcomes, and therefore educators might struggle to fit them into teaching programmes, or have to alter their own learning outcomes and curricula in order to fit the resources available, or modify aspects of the resources to fit with inclusivity criteria. There are a number of strategies that might be used to do this (some of which are described below), but ultimately it will always be the case that the materials may not have the same character, or level of integration, as bespoke materials designed and developed specifically for a particular programme.

The ALCMAEON project was an EU (ERASMUS +) funded collaboration between project partners across five European countries (Spain, Italy, Greece, Romania, UK) that sought to develop open education resources to support the teaching of medical humanities [18]. Focusing primarily on the history of medicine, the project aimed to create resources that spanned ancient to contemporary medicine, separated into discrete periods that each contain a set of matching resources that include (adaptable) lecture slides and lecture notes in all five partner languages, a digital museum comprising significant historical objects from the period (with notes, case studies, reading lists, and assessment questions), and a video library of experts discussing specific objects and talking about their significance. Each partner was responsible for a specific

number of periods and, importantly, each partner could use their historical period as a jumping off point to explore other areas of medical humanities. For example, at Bristol we chose to link one of our modern medicine units ‘From the Asylum to Care in the Community’ with best interests decision making in ethics and law, which reflected both our teaching and research interests.

The success of projects such as ALCMAEON can be difficult to evaluate, but the endeavour is certainly worth reflecting on. Such reflections can serve to highlight the strengths and weaknesses of open education resources in general, provide insight into how specific resources could be improved, and stimulate thinking about how such open education resources can be effectively utilised. Thus, in the rest of this chapter we present various ways that we have used the ALCMAEON open education resources in our teaching, and present learning points from our experience. We outline three strategies for using open education resources that we have tried (‘curating resources’, ‘entangling subjects’ and ‘introducing voices’) and, focusing on the latter two, provide examples and reflect on each.

### **3 Our Strategies**

#### *3.1 Curating Resources*

Our first example is our simplest: using the online platforms through which students engage with course materials to provide a curated set of medical humanities materials relevant to that module/course. Platforms (i.e., virtual learning environments) such as Blackboard and Moodle (as well as bespoke platforms such as Galen used by the University of St Andrews School of Medicine) are commonly used to provide students with an interface through which they can find and engage with course materials. Educators populate module pages with core course material, typically organised on a week-by-week basis, with each week covering a different subject or topic. This structure provides an excellent opportunity to include selected elements of open education resources as part of existing modules. The existing structure to the module enables educators to provide a curated set of additional resources directly relevant to that week’s subject or topic. This might simply take the form of providing a bibliography or links to further readings, or may include embedding material, such as videos, into module pages. As this material is supplementary to the core course, the range of materials that can be incorporated into the module is greater: journalism and museum objects can sit alongside one another as examples of how the subject being discussed is related to the real world of opinions, feelings, and things. Such material is intended to open up the possibilities of exploring the subject at hand to medical students, outside of the core focus on biomedicine. Crucially, the context in

which this material is provided to students allows educators to ensure that such opening up is facilitated by quality materials chosen with this purpose in mind.

Of course, this way of using open education resources frames them as additional material that students can choose to look at, but does not ensure engagement. Accordingly, it is important that when such material is included on online platforms, its purpose and potential for aiding student learning is made clear. Alongside providing the title of the resource in question, we would also recommend providing a short description of a few sentences that explains the resource's relevance to the core learning outcomes, including an indication of how it might open up the subject to students. Doing so not only flags to students that the resource has been suggested for a purpose, but enables students to direct their study to areas that they are most interested in.

Because the resources are supplementary to the core course, it should be expected that not all students will use them. Instead, the purpose of including such resources is to enable flexible and dynamic engagement with subjects by students. Where they want to entangle the biomedical aspect with different complicating factors they can do so, using curated resources that they can be confident are of a sufficient standard and quality. Whilst it would clearly be desirable to enable such entanglements throughout the whole university education of medical students, practical constraints realistically preclude this. But by making open education resources available to students in a structured but open way, students can take charge of their education to incorporate a broader engagement with medicine into their education, where it suits them.

Such engagement is supported when educators advertise the availability and relevance of additional resources to students during contact hours or course communications. We have found that highlighting the relevance of the supplementary materials available on the online platform to students allows educators to point to ways in which the core subject at hand is more complex than can be presented in a lecture or tutorial, without having to go into detail about that complexity within the confines that the limited time/brief communication makes available. This acts as both a further endorsement of the material provided and a prompt for students to use them.

The significant advantage presented by open education resources here is that they do not require substantial additional labour on the part of the teacher – only the effort to signpost to them. When time and resource is limited, it can be very difficult for an educator to prioritise creating supplementary resources that are non-essential and will likely not be used by all

students. Open access education resources allow the benefit of supplementary resources to be reaped, without the cost.

We have used a variety of open education resources, ranging from the material made during the ALCMAEON project outlined above (particularly the museum objects and expert videos) to further readings of various kinds: academic papers, patient memoirs, opinion pieces, and BMA guidelines have all featured on our module pages. We hesitate to offer hard and fast advice regarding what to use precisely, as this depends entirely on context. However, we do recommend ensuring the resource is of a sufficient academic standard (i.e., no Wikipedia), and considering the following: where resources lead to external websites, outside of the bounds of the online platform, what will students encounter there? How might students move on from the initial resource to others on this platform?

Ultimately, using external resources in this way does create some uncertainty around what will be accessed and how it will be used, and so we would also recommend that educators engage with students about how best to use such material and have an open discussion about the benefits and risks, so that they can develop their own learning strategy that incorporates these supplementary materials in way that most benefits them.

### *3.2 Entangling Subjects*

Open education resources can be used to modify existing, or to develop new, core teaching in order to entangle medical humanities subjects with the biomedical. As discussed in the introduction, one of the main advantages of using open education resources to bring medical humanities into medical education is that using them as part of a course does not necessarily require individual expertise in the manner that producing bespoke content does. In this section, we provide two different examples, both related to the history of medicine, of how open education resources can be integrated within core teaching.

Resources may be integrated in different ways and for different purposes, so here we only provide a brief comment on the possibilities available, focusing more on the advantages of doing so and typical teaching scenarios like lectures and tutorials. Unlike the ‘curating content’ strategy, here the educator takes direct control of how the resource is used as part of the core course. It is crucial, however, to make the resource available to students so that they are able to revisit and revise with the appropriate material. For example, lecture slides are typically made available to students for various pedagogical purposes. Embedding a hyperlink within the slide ensures that students can not only revisit the lecture, but have access to further resources in the manner outlined in the previous section. Building in open access resources in



such a manner does much more than provide arresting examples and interesting anecdotes; done well it can emphasise the multifaceted and complex nature of medicine.

### *Example 1 – Lecture*

At the University of Leeds, the ‘History of Science in 10 Objects’ course run by the School of Philosophy, Religion, and History of Science attracts students from across humanities and scientific studies, including medical sciences. Whilst the focus of the module is on the historical study of science, the use of open education resources from the ALCMAEON project to enhance lecture materials in the course is relevant and applicable to the work of medical educators.

For example, in a lecture RTB gave on the development of the forceps, he used the ‘Anatomical Preparation’ in the ALCMAEON museum collection; the skeleton of a woman who suffered from rickets and died during a caesarean section operation in 1800. As Fig. 1 shows, the slide RTB used to show the ‘Anatomical Preparation’ presents the skeleton from several different angles in order to show the warping effects of rickets on the skeleton, and to illustrate clearly to students why rickets was a major cause of obstructed birth during the period in which the forceps were developed. The slide links a physical manifestation of the disease, and a real case, to the development of medical technology. Moreover, because that technology (the forceps) was unable to aid the patient in this particular case, the limitations of new technology in providing universal answers to medical problems is demonstrated to students. The image and attached case history thus entangles scientific information with the various needs and limitations of medical practice.

This case is rich and multifaceted. The link underneath the images provides students the opportunity to explore further in their own time, as outlined in the previous section. Additionally, because the link is provided *within* the central course materials, it indicates the value of exploring this case further. Students who do will find information on the development of anatomical preparations, the problems with operations before anaesthesia and antisepsis, patient safety and the risks of childbirth, and the wider implications of the case. This incorporates not only ethical issues, but also decision-making in different medical circumstances and offers the opportunity for the student to explore the emotional responses of the medical practitioners involved, as well as reflect on their own emotional response to the case. As the description on the ALCMAEON online museum website puts it (which RTB originally wrote as part of his work on the project):

*“What is perhaps most striking about this story is how the woman chose to undergo surgery that would almost certainly result in her death in order to give birth to Caesar. We might reflect on how this makes us feel, and about what might have motivated her*

*to sacrifice her own life for that of a child that she would never know. We might also reflect on whether it was a good decision to make, and what kinds of ethical issues arise from it” [19].*

The various meanings that can be attached to the object show how incorporating medical humanities through open education resources can create the kinds of entanglements we have discussed. Furthermore, the richness of this particular case emphasises the flexibility that such educational resources can bring to the medical curriculum.

*Fig. 1: Lecture slide by RTB using ALCMAEON resources and including hyperlink. Image reproduced with the kind permission of Surgeons Hall Museums, The Royal College of Surgeons of Edinburgh*

### *Example 2 – Tutorial*

As part of a second-year medical ethics tutorial on research ethics at the University of St Andrews School of Medicine, six scenarios on the subject are provided to students to examine. Tutors are encouraged to use the cases as they see fit. The cases are not intended to be ‘solved’, but rather act as prompts to considering the complexity of different real-life situations that might be encountered as part of medical research. Scenarios range from ethical issues surrounding research funding, through issues of study design and privacy, to the potential uses of social media for research. Thus, they provide a broad and varied set of ways to think about the broad field of medical research and the multiple ways that ethical issues might arise.

The first case presented relates to the potential use of Eduard Pernkopf’s *Topographische Anatomie des Menschen* (*Topographical Anatomy of Man*, 7 volumes, 1937) in research today, centring around whether or not this work ought to be held by medical libraries and used by medical researchers [20]. The atlas was made in Nazi Germany, with the cadavers of non-consenting political prisoners, so provides a striking and easily understandable case to reflect on. A broader related question asks what should be done with any data if it is subsequently discovered it was collected unethically. The material given to students explains the case and its broader implications in a few lines and also provides a link to a discussion article published by the BBC on the unethical use of data [21]. Material provided to the tutor (and not to the students prior to the class discussion, but introduced to them during discussion) includes further information on the Pernkopf atlas that includes an insert placed into the book at Vienna University informing readers of the work’s past and also a comparison to the making of Henry

Gray's *Anatomy: Descriptive and Surgical* (1858)—now more commonly known as *Gray's Anatomy*—which would also be considered unethical today but is still in use [22].

Much of this material is available from open education resources – both Pernkopf and Gray's atlases are available on Internet Archive for example – but were shaped to suit the needs of the tutorial. The use of the real-life scenario creates immediacy for the issue at hand as well as emphasising the history of medicine as a resource for understanding both the context and the content of the ethical problem. It is central to the case that Pernkopf's research was legally conducted at the time, but that the ethical problems inherent to it are not resolved by that legality. The link to the research context in which Gray's *Anatomy* was made is intended to show that the problems with Pernkopf's atlas cannot simply be dismissed by pointing to Pernkopf's Nazism, but were part of a broader research context. In other words, the complexity of the problem is emphasised and becomes difficult to resolve simplistically. This is further compounded by the relation between this example and the use of historical data as a problem – how to reconcile using past research that we might consider unethical by current standards is explored in several ways, and different problems emphasised.

Furthermore, students have several additional resources available to explore as outlined in the section above: the Declaration of Helsinki, a two-part podcast on the Tuskegee Syphilis Scandal, and a museum object from the ALCMAEON project – a film of patients with 'shell shock' before and after their treatment during the First World War. These support the main aims of the tutorial by increasing the potential breadth of the subject and ethical issues related to research that students can consider.

### *3.3 Introducing Voices*

Another potential use of open education resources is to introduce new and different voices into the classroom. This can increase the range and diversity of experts that students encounter as part of their core teaching on a subject, which can directly illustrate to students how different disciplines can interact to improve medical knowledge and practice.

#### *Example 3 – Pre-recorded videos*

Pre-recorded videos can be embedded within lectures or module pages. Including them within core course material can be a way to help improve the focus of students on the material being presented. It is common pedagogical wisdom that students can concentrate well for around 20 minutes, after which their attention wavers and learning is less effective, and either a break or change is needed. As a result, student focus can be maximised by using videos to introduce new voices at key junctures.

We have used videos recorded as part of the ALCMAEON project flexibly in our teaching. Several interviews were recorded with experts that were designed to discuss current ethical issues through the lens of historical ideas and objects. For example, one interview was conducted with Richard Huxtable, Professor of Medical Ethics and Law at the University of Bristol School of Medicine. The interview explored the historical development of the legal apparatus of living wills, and the ethical issues associated with their use in medicine today. We have used this video as supplementary material and to bring more voices into classroom discussion, as discussed below in our next example.

#### *Example 4 – Collaboration*

Our final and most complex example is using open education resources as a point of collaboration between academics in different disciplines, to enable them to contribute directly to the education of medical students as part of core teaching. The authors – a bioethicist (JI) and medical historian (RTB) – used ALCMAEON materials as a shared resource to guide their collaboration in teaching iBSc Bioethics students at the University of Bristol. Specifically, we developed a week of material that explored the ethical issues regarding respecting autonomy in healthcare, particularly focussed on end-of-life decisions and mental capacity. To do this coherently we used the open education material as both a baseline and jumping off point for the development of the course material. By using open education material as the starting point for our collaboration, we were able to understand more easily where our counterpart was coming from in their approach to the subject, without having to commit to extensive reading and synthesis outside of our existing expertise. We could then develop material based on the open education resources, confident that it would be intelligible to both our counterpart and the medical students encountering it.

The week's teaching was designed to include the history of the deinstitutionalisation of the mentally ill in Britain over the course of the twentieth century in order to inform students' perceptions of the move away from paternalistic models of healthcare, and explain the contingent nature of current mental health provision in the UK, particularly in relation to autonomous decision making for those with or without capacity. As the module was taught online in the year 2020–21, teaching now consisted of two short lectures: one focusing on ethical and legal issues pertaining to current practice around respecting autonomy in healthcare and considering the issues and best practice around those without autonomy (organised by JI); the other on the history of deinstitutionalisation in Britain and the development of the social and legal apparatus around which binding documents such as living wills and Do Not Resuscitate Orders have been invented (organised by RTB). ALCMAEON course material was

used to inform the content of both lectures and provided a consistent point of reference throughout for both collaborators and medical students. Thus, the material was the backbone of each lecture. The lecture material was further supplemented by the inclusion of the interview with Professor Richard Huxtable on the development of living wills, and the reading assigned to students for that week's class, B. Hudson's article, 'Deinstitutionalisation: What Went Wrong' [23].

The authors therefore provided material that was academically rigorous at the same time as being diverse, and emphasised the complexity of the ethical issues that were the focus of the module. The use of open education resources as a baseline for the week's material facilitated an interdisciplinary approach to the material for students, and exposed them to different kinds of expertise. To be comprehensive about this, we provided the students with additional resources as described in 3.1 and worked to entangle the subjects discussed as described in 3.2, in line with the other strategies discussed in this paper.

Our collaborative work began with direct discussions regarding the learning outcomes, aims, and content of the week's material, before we worked individually to prepare that week's material. We then reconvened prior to that week's teaching to review our respective lectures and provided feedback to each other. In doing so, we focused less on the specific content of the lectures – because we had an agreed baseline located in our shared open education resources this was largely unnecessary – and focused on the coherence of the two lectures with each other, modifying our lectures as appropriate following discussion. We felt that including this step was important to ensure that the material remained intelligible for the students. A potential danger with collaboration can be that the different parts do not line up particularly well. Our second discussion headed off that potential problem.

#### **4 Conclusion**

There are significant benefits to incorporating medical humanities into medical curricula, but there can also be significant barriers to doing so. Open education resources present a way to overcome some of those barriers, and provide an opportunity to entangle medical humanities within the existing curricula. In this chapter we have outlined three strategies that medical educators can use to do so: i) curating resources, ii) entangling subjects, and iii) introducing voices.

Whilst we have not provided an exhaustive list as to how such resources can be utilised, our reflection on our own experiences have shown that these strategies can enable a broad approach to entanglement, by a wide range of medical educators, who need not be specialists. Our

experiences have, further, highlighted various strengths, opportunities, and potential pitfalls with these approaches, which hopefully will be of benefit to any medical educators considering the use of open resources to enhance their delivery of medical humanities in a likely overcrowded, and possibly under-resourced, curriculum.

## References

- 1 Berridge VS. Infiltrating history into the public health curriculum. *Journal of Public Health*. 2018; 40(4):886-890.
- 2 Teo J, Cox A, Ngu T, Doan H, Sinha S. Infiltrating the Curriculum: Integrating Medical History with Existing Surgical Pathology Tutorials. *MedEdPublish*. 2020; 9(44). Available from: <https://doi.org/10.15694/mep.2020.000044.1>
- 3 Sokol DK. Should We Amputate Medical History? *Academic Medicine*. 2008; 83(12):1162-1164.
- 4 Harvey P, Chiavaroli N, Day G. Arts and Humanities in Health Professional Education. In: Nestel D, Reedy G, McKenna L, Gough S, editors. *Clinical Education for Health Professionals*. Singapore: Springer; 2020. Available from: [https://doi.org/10.1007/978-981-13-6106-7\\_49-1](https://doi.org/10.1007/978-981-13-6106-7_49-1)
- 5 Viney W, Callard F, Woods, A. Critical medical humanities: embracing entanglement, taking risks. *Medical Humanities*. 2015; 41:2-7.
- 6 Wellcome. Research in the humanities and social sciences. 2019. Available from: <https://wellcome.ac.uk/what-we-do/our-work/research-humanities-and-social-sciences>
- 7 General Medical Council. Outcomes for graduates 2018 (2020 update). 2020. Available from: <https://www.gmc-uk.org/education/standards-guidance-and-curricula/standards-and-outcomes/outcomes-for-graduates/outcomes-for-graduates>
- 8 Stirrat GM, Johnston C, Gillon R, Boyd K. Medical ethics and law for doctors of tomorrow: the 1998 Consensus Statement updated. *Journal of Medical Ethics*. 2010; 36:55-60.
- 9 Blease C. In defence of utility: the medical humanities and medical education. *Medical Humanities*. 2016; 42(2):103–8.
- 10 Chiavaroli N, Huang CD, Monrouxe LV. Learning medicine with, from and through the humanities. In: Tim Swanwick KF, O'Brien B, editors. *Understanding medical education: evidence, theory and practice*. 3rd ed. West Sussex: Wiley Blackwell; 2018. p.223-237.
- 11 Doukas D, McCullough LC, Wear S, Lehmann L, Nixon LL, Carrese J, et al. The challenge of promoting professionalisation through medical ethics and humanities education. *Academic Medicine*. 2013; 88(1):1624-1629.

- 12 Hildebrandt S. The Role of History and Ethics of Anatomy in Medical Education. *Anatomical Sciences Education*. 2018; 12(4):425-431.
- 13 Jones DS, Greene JA, Duffin J, Warner JH. Making the Case for History in Medical Education. *Journal of the History of Medicine and Allied Sciences*. 2014; 70(4): 623–652.
- 14 Kumagai AK. Beyond “Dr feel-good”: a role for the humanities in medical education. *Academic Medicine*. 2017; 92(12):1659-1660.
- 15 Timm DF. Combining History of Medicine and Library Instruction: An Innovative Approach to Teaching Database Searching to Medical Students. *Medical Reference Services Quarterly*. 2012; 31(3):258-266.
- 16 Tsevat RK, Sinha AA, DasGupta S. Bringing home the health humanities: narrative humility, structural competency, and engaged pedagogy. *Academic Medicine*. 2015; 90(11):1462-1465.
- 17 Baas, M, Admiraal W, van den Berg E. Teachers’ Adoption of Open Educational Resources in Higher Education. *Journal of Interactive Media in Education*. 2019; 2019(1):1–11.
- 18 ALCMAEON project website: <https://alcmadeon.pixel-online.org/index.php>
- 19 ALCMEON. Anatomical Preparation. Available from: [https://alcmadeon.pixel-online.org/DM\\_page3.php?sid=35](https://alcmadeon.pixel-online.org/DM_page3.php?sid=35)
- 20 Atlas MC. Ethics and access to teaching materials in the medical library: the case of the Pernkopf atlas. *Bulletin Medical Library Association*. 2001; 89(1):51-58.
- 21 Baker K. Eduard Pernkopf: The Nazi book of anatomy still used by surgeons. 2019. Available from: <https://www.bbc.co.uk/news/health-49294861>
- 22 Like the Pernkopf case, Gray’s use of cadavers was legal at the time. Richardson R. *The Making of Mr Gray’s Anatomy*. Cambridge: Cambridge University Press; 2009.
- 23 Hudson B. Deinstitutionalisation: What Went Wrong. *Disability, Handicap & Society*. 1991; 6:21-36.