

# An interpretative review of a Spanish pioneering doctoral thesis (1855) about the need of travels to complement medical education

## Revisión interpretativa de una disertación doctoral española (1855) sobre la necesidad de viajes como complemento a la educación médica

Inés M<sup>a</sup> Fernández-Guerrero<sup>1</sup>, Cristina Fernández-Guerrero<sup>1</sup>, Antonio Fernández-Cano<sup>2</sup>

1 General University Hospital "Virgen de las Nieves", Servicio de Emergencias, Avenida de las Fuerzas Armadas, 2. Granada 18002. Spain. [inesmariafernandez@yahoo.es](mailto:inesmariafernandez@yahoo.es) ORCID: 0000-0001-7020-9182

1 General University Hospital "Virgen de las Nieves", Servicio de Anestesiología, Avenida de las Fuerzas Armadas, 2. Granada 18002. Spain. [cris85f@gmail.com](mailto:cris85f@gmail.com)

2 Retirado. University of Granada. Granada, 18071. Spain. [afcano@ugr.es](mailto:afcano@ugr.es) ORCID: 0000-0003-3991-4443

Correspondence: [afcano@ugr.es](mailto:afcano@ugr.es)

Received: 27/10/24; Accepted: 12/11/24; Published: 15/11/24

**Abstract:** The purpose of this work is to inquire into the background of medical education by reviewing a Spanish doctoral thesis from 19<sup>th</sup> century which highlighting the current interest of the topic of medical education travel. This study is an interpretative review of an academic document doctoral, a thesis entitled "The need for travels to complement medical education" defended at the Faculty of Medicine of the University of Madrid in 1855. It is a text of 21 pages available digitally. The thesis is a panegyric of travel as a complement to medical education based on previous readings on the topic, observations, and possible personal experiences. It provides a number of reasons to justify the desirability of educational travel as a complement to the medical education of physicians and nurses. Although this is a case study (a doctoral dissertation) and despite the antiquity of the proposals, they are still valid today. The compilation of a series of guidelines included in the thesis can help the medical traveler seeking to improve his or her professional skills. So then medical education travel has a complementary but necessary function with several practical implications that could still be considered today. Therefore, the medical education travel should not be a mere vacation trip as advised in the recommendations that the Bologna process has sponsored for mobility programs for students and graduates.

**Keywords:** Antecedents of medical education; educational travels; doctoral thesis; 19th century; interpretative review

**Resumen:** El propósito de este trabajo es indagar en los antecedentes de la educación médica mediante la revisión de una tesis doctoral española del siglo XIX que pone de manifiesto el interés actual del tema de los viajes de educación médica. Este estudio es una revisión interpretativa de un documento académico doctoral, una tesis titulada «La necesidad de los viajes para complementar la enseñanza médica» defendida en la Facultad de Medicina de la Universidad de Madrid en 1855. Se trata de un texto de 21 páginas disponible digitalmente. La tesis es un panegírico de los viajes como complemento de la enseñanza médica basado en lecturas previas sobre el tema, observaciones y posibles experiencias personales. Aporta una serie de razones para justificar la conveniencia de los viajes educativos como complemento en la formación de médicos y enfermeras. Aunque se trata de un estudio de caso (una tesis doctoral) y a pesar de la antigüedad de las pro-puestas, éstas siguen siendo válidas hoy en día. La recopilación de una serie de pautas incluidas en la tesis puede ayudar al viajero médico que busca mejorar sus competencias profesionales. Así pues, el viaje de formación médica tiene una función complementaria pero necesaria, con varias implicaciones prácticas que

podrían seguir considerándose hoy en día. Por lo tanto, el viaje de educación médica no debe ser un mero viaje de vacaciones como aconsejan las recomendaciones que el proceso de Bolonia ha auspiciado para los programas de movilidad de estudiantes y graduados.

**Palabras clave:** Antecedentes de la educación médica; viajes educativos; tesis doctoral; siglo 19; revisión interpretativa

---

## 1. Introduction with some conceptual clarifications.

Travel impact is a multifactorial concept well researched in the travel research literature; concretely, travels impact on the health and wellness benefits of traveler on personal growth (1), increase in life skills and knowledge (2) and on education and training of learners. Travels and especially educational travels can even foster local development improving the sustainability of the local economy (3-4); for example, the impact of English educational tourism (EET) on the growth of local small-medium enterprises (5). But not only does travel enhance above all the learning of the language of the visiting country, it also facilitates the acquisition of other professional domains, for example, the acquisition of certain knowledge, treatments and skills by health professionals, physicians, nurses or medical students. Airey et al. (6) encouraged inquiring into the important benefits of educational travel. Continuing the review of the related and current ad hoc literature about the topic in health education, it is explored (7) this topic identifying current practices and formats and even gaps in existing research and two studies (8-9) expose challenges, coping and support during student placement abroad such that mobility programs should ensure support before, during and after placement is within students' reach.

It is commonly accepted that educational mobility facilitates the development of a competency framework in healthcare professions (10). In particular, medical educational travels [from now METs] are very convenient for minority physicians into specialty training in spite of possibly hindering the influx of cultural minority physicians into residency which making academic hospitals less diverse (11). But differences in professional practice might hinder the initiation of student participation during international placements, and thereby limit workplace learning which can be overcome by establishing a continuous dialogue between all agents involved (8).

Here a prior conceptual clarification would be necessary because medical tourism should not be confused with medical-educational travel. The former refers to the trip made by a sick person to a place other than his/her usual place of residence in search of medical treatment to enable him to recover his/her deteriorated health and at the lowest possible cost. Medical tourism must be conceptualized (12) as an emerging phenomenon characterized by medical care combined with holiday-making activities. The second type is the voluntary trip made by health agents (student in training or for the qualified improvement of a physician or nurse) trying to perfect their professional drills for a better performance of his/her clinical practice. Another conceptual clarification is that of mobility of health agents, generally related to the phenomenon of migration, with the aim of obtaining professional advantages not educational, and who have affiliation ties with more than one country, always maintaining a link with their country of origin (13).

The literature manifests that MET acts as a remarkable resource for continuing the education of healthcare professionals with different modalities of implementation (13), such as international faculty development programs incorporating on-site observational learning in hospital settings (14) and even programs for training future international clinical academic leaders (15).

The historical evidence is that mobility based on educational travel has more than proven its effectiveness. Positive historical cases such as the Japanese program that instituted the Meiji era in 1867, which allowed the modernization of an isolated and backward Japan, assimilating it to

Western countries as an emerging power, had in the travel abroad of its students and professionals one of its main objectives. On the contrary, there is the case of Spain when King Philip II promulgated a pragmatic in 1559 prohibiting students from the kingdoms of Spain to travel to other countries because of the risk of being contagious of the Protestant heresy. This isolation has been a controversial factor to justify the scientific and cultural decadence of Spain (16), and only with a great subsequent effort has it been possible to overcome it.

The academic dimension of the educational journey, and especially the MET one, has a noteworthy research tradition, as will be shown in this review, focusing on a Spanish doctoral thesis dating back to the mid-19th century. Even, to highlight the importance of METs, we can go back to the late 18th century with Johann Peter Frank's seminal work (17) and to a historical review of medical travels (18). Frank (17, pp. 359–82) wrote in Latin a chapter titled *Medicis peregrinationibus* (medical travel) and contained in his book *Delectus opusculorum medicorum* (A selection of medical essays). This chapter is probably the first written text to consider the topic of METs.

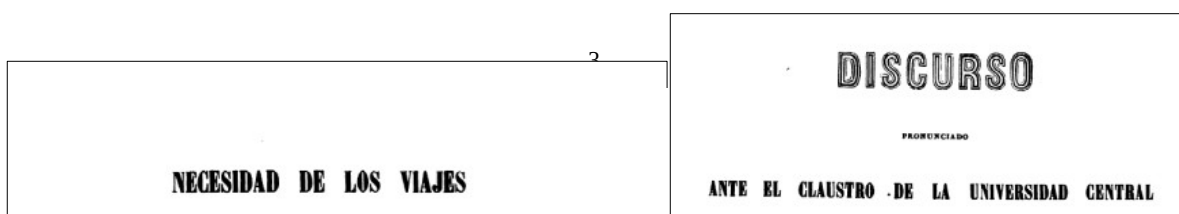
However, the academic papers are more diverse and include the doctoral thesis as a central document. This is the main objective of this study: to review the possibly world's first doctoral thesis that considered the topic of MET. Its rationality relies on the fact that scientists in general, and travel researchers in particular, should have accurate information and knowledge about the origins of their disciplinary field. This dictum reminds us of Aristotle's argument in his *Metaphysics* (19) that we understand a subject best when we see it grow from its origins. Specifically, Aristotle said: "seeking first to understand the causes of the entities that surround us ... in the search for their causes, they advanced to that one" (19, p. 12).

## 2. Methods.

This study is a historiographical and interpretative review of an academic document, a doctoral dissertation retrieved from CISNE-Universidad Complutense de Madrid (UCM) database (<https://ucm.on.worldcat.org/>) with the title "The need for travels to complement medical education" (20). This database indexes among other documents those doctoral theses defended at the UCM since 1840. As the university of the capital of the state, it had the privilege and the power until 1954 to be the only Spanish university where a doctoral thesis could be defended. Obviously the thesis is written in Spanish language. The thesis is focused with a purportedly interpretative approach by recovering sentences somewhat covertly, explaining nuances and completing meanings. In contrast to the linearity of the traditional revision, the aim here is to clarify the uniqueness of the revision in order to go beyond a mere glossing of the text. Above all, this review of a book/thesis should not be confused with an synthesis review of the literature. The latter considers a phenomenon through multiple documents, while the former focuses on a single text as a documental case study. The weakness of this study is evident because it focuses on a single case (thesis), but this unknown case is strengthened after a contextualization and in-depth analysis prior to its extensive identification. In the text, literal quotations in Spanish are included in square brackets, maintaining the author's wording even with their spelling inadequacies.

### 2.1. Formal aspects of the thesis

CISNE-UCM database offers a digitized version of the original printed booklet (20) as a PDF. It is a text of 19 pages with two additional front pages (see Figures 1 and 2). This reduced length was usual for theses published at the time (21-22). The thesis begins with an affectionate dedication to an author's uncle, likely pecuniary mentor.



## 2.2. About the autor

It is difficult to obtain very reliable, and therefore valid, information from the author. He was probably a student of Medicine at the University of Valladolid (Spain) as his thesis is included in the repository of this university with the first title: "Speech delivered before the Senate of the Universidad Central / by Genaro Almodovar and Saldaña, Licentiate in Medicine and Surgery, at the solemn act of receiving the investiture of Doctor in the same Faculty". (<https://uvadoc.uva.es/handle/10324/61939>). After graduating, he would have travelled as a doctor to Puerto Rico, then a province of Spanish Kingdom, where he appears as an advisor of the local government of this province (23). He also is engaged as a signatory, with the title of Doctor of Medicine and Surgery, of a request to the Spanish Minister of Overseas Territories to open a university in San Juan, as had been provided to Havana (Cuba). This request was not granted (24).

## 2.2. The medical educational context of the thesis

The 19th century in Spain was a troubled period in its history. Colonial wars with the loss of the Spanish empire, social conflicts, civil wars, continuing economic crises and very unstable governments that broke the political and social security of the Old Regime. That political instability also led to legislative changes and to lack of funds with political layoffs causing academic uncertainty, precariousness in teaching staff and poorly founded curricular changes. As many as nine curricula for the career of Medicine was implemented throughout this century (25). Despite such a problematic situation, the country made the transition from an obsolete university to a liberal and centralist university patterned according to the French Napoleonic model (26). The defense of a doctoral thesis was instituted as compulsory in the career of Medicine. This is the origin of the title of doctor used by physicians ever since.

## 3. Results.

### 3.1. Specific contributions of the thesis

The thesis is a panegyric of travel as a complement to medical education based on previous readings on the topic, observations, and possible personal experiences. A thesis at the time was not empirical work but a work of erudition, hence its flowery and pompous language with expressions such as: "the humble voice of the student ... comes to pay tribute and homage in the temple of Minerva, in fulfillment of an essential duty ... to receive the laurel that symbolizes the science of Aesculapius" [la humilde voz del estudiante que ... viene á rendir tributo y homenaje en el templo de Minerva, en cumplimiento de un deber imprescindible ... para recibir el lauro que simboliza la ciencia de Esculapio] (20, p. 7).

But at the same time, he uses a humble and almost flattering tone to the members of the tribunal when he says: "I must implore your indulgence, which enhances your wisdom, as I deal with a point far beyond my meager strength" [debo implorar de vosotros la indulgencia, que realza mas vuestra sabiduría] (20, p. 8). The author uses mainly methodological and historical criteria to support the need for METs, recognizing that "the question of method in all human knowledge is the great level of intelligence" [La cuestion del método en todos los conocimientos humanos es la gran palanca de la inteligencia] (20, p. 8), although he cites many authors, but without providing, as was usual at the time, any bibliographical reference. On the rationality of his study, he states that: "it would be useless to repeat the importance and usefulness of travel in general, and especially in relation to medicine" [escusado sería repetir la importancia y utilidad de los viajes en general , y en especial relacionados con la medicina] (20, p. 9).

### 3.2. Rationality of travel in Medical Education

Nevertheless, Almodovar provides a number of reasons to justify the desirability of educational travel; namely and paraphrasing his own words:

- Travel is the eternal bond that binds nations, and therefore the means of transmitting their knowledge; travel is the soul, the touchstone of the progress of all nations [los viajes ... el eterno lazo que encadena á las naciones, y por tanto el medio de trasmitirse sus conocimientos] (20, p. 9).

- They serve as a torch for intelligence and a vehicle for human knowledge [sirven de antorcha á la inteligencia y de vehículo al saber humano] (20, p. 9).

- Travels show us the progress in the sciences in general, and especially in the natural sciences, and more specifically have provided thousands of plants and roots with marvelous effects on man's illnesses [cuánto han influido los viajes en el desarrollo y progreso de las ciencias, sobre todo en las físico-matemáticas é historia natural, proporcionando miles de plantas y raíces de efectos maravillosos sobre las enfermedades del hombre] (20, p. 12).

- Allow to enlarge the intelligence of the students, lethargic with the monotony of the places where they were born. In this regard, he asks himself: "Would man have attained so much knowledge, so much instruction, in the narrow confines of his birth? [tanto conocimiento, tanta instruccion, ¿la hubiera alcanzado el hombre en el estrecho recinto de su nacimiento?] (20, p. 12). Answering with a negative.

### 3.3. Frank's influence on this thesis

The thesis is indebted to J. P. Frank's chapter to which he quotes literally and exhaustively and from which he says that: "The celebrated Franc [sic, by Frank] is the one who best and with more method has exposed the true itinerary of the physician in his travels" [El célebre Franc es el que mejor y con mas método ha espuesto el verdadero itinerario del médico en sus viajes] (20, p. 16) with several objectives among others to study "the endemic, vulgar or epidemic diseases, which are more frequent in the home, nature" [original in latin, endemicorum, vulgarium aut epidemicorum frequentius dominantium, natura; las enfermedades endémicas, vulgares o epidémicas, más frecuentes en el hogar, la naturaleza] (20, p. 16). Almodóvar quotes a 160-words passage from Frank on page 16, maintaining the original Latin text. Likewise, the historical tour follows the guidelines of Frank's original text where he speaks of the trips to European medical schools, above all to Salerno, by the medieval *studiosi vaganti* [student travelers], whose figure was investigated by Ekeid (27). A list of medical centers of excellence worth visiting and which encouraged METs during the 16th to 18th centuries is available in (28). Frank (17, p. 360) already commented that the father of Medicine, Hippocrates, advised to make medical voyages, to centers of medical knowledge in antiquity, especially to the medical school of Alexandria<sup>[1]</sup>, advice that Galen followed.

### 3.4. Guidelines for an effective medical-educational journey

The thesis reviewed here issues a series of practical guidelines that the medical student or professional traveler should consider; namely:

- To visit the museums of Paris, London and Berlin, institutes of scholars, and "all those places that provide him with the means of instruction that his native country lacks" [todos aquellos puntos que le proporcionen medios de instruccion de que carezca su pais natal] (20, p. 14). When traveling in Paris, he recommends visiting the scientific museums, especially the Parisian museums of Dupuytren<sup>[2]</sup> and Orfila<sup>[3]</sup> for their contributions to pathological anatomy and toxicology.

- To compare the state of advancement [of medicine] in his country with that of the other nations he visits [la comparacion del estado en que se encuentran las diversas naciones] (20, p. 10).

- To acquire accurate knowledge of many diseases, both diverse in nature and unique to this or that region [adquiriendo un conocimiento exacto de muchas enfermedades, tanto diversas por su naturaleza, como exclusivas de esta u otra region] (20, p. 15).

- He attended the academies and dealt with the most famous physicians whom he mentioned (Laennec<sup>[4]</sup>, Corvisart<sup>[5]</sup>, Scarpa<sup>[6]</sup>, Carlos Bell<sup>[7]</sup> and Esquirol<sup>[8]</sup>), but it was impossible to do so since all these eminences had passed away by the time this thesis was defended, 1855. He explains that by touring countries in this way, he will soon have the practice of the best doctors, going to hospitals that are so well established abroad [se hará en poco tiempo con la práctica de los mejores facultativos, concurriendo á los hospitales, tan bien montados en el extranjero] (20, pp. 15-16).

- The traveler will import to his homeland from distant lands the most useful that the natural sciences, and especially the medical sciences, can offer him, recognizing that wiser and more perfect are the professors who had left their homeland to visit foreign nations [el joven médico importará á su patria de lejanas tierras lo mas útil que puedan ofrecerle las ciencias naturales, y sobre todo las médicas] (20, p. 16).

### 3.5. Requirements for a successful medical educational visit

Almodovar (20) sets out a series of preconditions that can enable the physicians and nurses to make a fruitful journey, namely:

- The physician, who, as a scientific traveler, moves from his country to a foreign country, must have the language to understand and be understood by the natives of the country he is visiting [el médico que con carácter de viajero científico se traslade de su país al extranjero, debe poseer el idioma para entender y hacerse comprender de los naturales del país que frecuentase] (20, p. 18). At that time there was no lingua franca for scientific communication as Latin was until the end of the 18th century and English is today.

- He must be well instructed in the principles of medical science, knowing in depth the state of medicine in his country, in order to be able to compare it with that of the countries he travels through and thus take advantage of the novelties he appreciates [Debe estar bien instruido en los principios de la ciencia que profesa, conociendo á fondo el estado en que se encuentra en su patria, para poder compararle con el que tenga en los que recorra, y sacar así partido de las novedades que aprecia] (20, p. 18).

- He will carry with him at least one good geographical chart of the country he is going to visit, as well as a memory book to record the observations he makes [Llevará consigo al menos una buena carta geográfica del país que va á visitar asi como un libro de memoria para anotar las observaciones que haga] (20, p. 18).

- If he remains for a long time in a capital city, he should frequently change his residence in order to multiply his relationships [si permaneciere mucho tiempo en una capital debe variar con frecuencia de domicilio, á fin de multiplicar sus relaciones] (20, p. 18); a requirement that recalls the Jesuit (9) mobility in their missionary work.

## 4. Discussion

This dissertation is a child of its time and country, it generalized the use of language that today we consider sexist. Sexist language was usual in that time and country. But to impute such an epithet to him is a clear sign of presentism bias in interpreting the past in the light of the present. Nevertheless we consider that it is a valuable contribution to medical education, although the author himself postulates that travels have a complementary but necessary function according to the title of the dissertation. Relevant are a number of points that the author makes regarding travelling health workers and students, the meaning and usefulness of educational travels, as well as about a recommendation for travelling that could still be followed today. Include that METs demand additional expenses and cover enough time (29) and they do not consider them as a mere vacation but as a powerful educational resource covering enough time not a single week as it is spent on some studies (30). MET is a potential means to establish links between health professionals inducing the creation of learning communities (31) and this requires time involved.

The subject of educational travel, and therefore of METs, is now highly topical and even more so since the Bologna Process, aimed at unifying higher education in Europe and other adhering countries, has sponsored mobility programs for students and graduates (32), reinvigorating educational travel as a key to building the necessary trust for successful learning mobility, cross-border academic cooperation and the mutual recognition of study periods and qualifications earned abroad. In this sense, the dynamic nature Bologna Process promoting the mobility is recognized as one of its strengths (33). In fact, medical education is becoming increasingly internationalized (34).

But the MET raises some questions such as how to promote the mobility of health professionals with physical impairments (35). Perhaps the most worrisome is the unlikely return of the traveling physician to his or her home country, as many of them settle in the host country and do not return home. The trip being then only an excuse to emigrate, thus depriving the country of origin of professionals. Studies that have investigated this problem in countries such as Nigeria (36), the Philippines (37) or Spain (38) show high rates of non-return.

After the COVID epidemic in which medical online education was instituted (39-41), the topic of MET has begun to be reconsidered from other points of view. We are starting to talk about digital mobility not so much as physical mobility. Digital MET is an emerging subject that deserves to be explored in depth (42).

Returning to the isolationist case of Spain, it is worth emphasizing the change represented by the *Junta de Ampliación de Estudios e Investigaciones Científicas* (JAE) [Council for Further Scientific Study and Research], founded in 1907, which promoted journeys and exchanges of students and professors (43-44). It would then be necessary to investigate the concrete impact of this JAE policy on Spanish medical education as an advance of this study.

## 5. Conclusions

- Several conclusions could be inferred from the review of this thesis but not explicitly stated by Almodovar.
- Firstly, medical travel should remain a full-fledged medical training. But such a trip is not just a dilettante, festive or recreational activity that demands considerable expense. It requires adequate preparation, dedication and involvement in the tasks of medical training. It should therefore be considered as an additional element in the curriculum of medical studies.
- Doctors and nurses should be involved in METs as a powerful means of continuing education and as such be recognized by public authorities because the mobility of people inexorably entails the mobility of ideas and practices and facilitates the improvement of professional performance.

## Notes

[1] Frank (1782, p. 360) literally states: “Nec dubium superesse potest, quamplurimas Graecorum de Medicina notiones huic intimiori Legislatorum Vatumque cum Egyptum literari comercio deberi.” (Nor can there be any doubt that most of the Greek ideas about medicine are due to this intimate relationship between the legislators and the scholarly trade with Egypt). [The reader might be indulgent in allowing us this Latinism].

[2] Refers to the Musée Dupuytren in Paris, active from 1835 to 2016 and specialized in wax anatomical items and specimens illustrating diseases and malformations. It was named in honor of Guillaume Dupuytren (1777-1835), French anatomist and surgeon.

[3] Refers to the Musée d'Anatomie Delmas-Orfila-Rouvière, active from 1795 to 2005. It was firstly named in honor of Mateu Orfila (1787-1853), Spanish toxicologist.

[4] René Laennec (1781-1826), French inventor of the stethoscope.

[5] Jean-Nicolas Corvisart (1755-1821), physician of Napoléon. French cardiologist who perfected the technique of thoracic percussion.

[6] Antonio Scarpa (1752-1832), Italian anatomist.

[7] Charles Bell (1774-1842), Scottish neurologist.

[8] Jean-Étienne Esquirol (1772-1849), French psychiatrist.

[9] The Constitutions [Cons.] of the Society of Jesus (42, p. 391) explicitly state in chapter 5, [739]: “He [The Superior General Authority] will also have power to send those whom he decides upon to studies, at the place he thinks proper..., and to change them from one place to another, as he judges to be more expedient” [Él [la Autoridad Superior General] tendrá también el poder de enviar a los que él decida a los estudios, en el lugar que crea conveniente..., y de cambiarlos de un lugar a otro, según lo juzgue más oportuno].

**Supplementary material:** The thesis book is available in these four links:

- <https://uvadoc.uva.es/handle/10324/61939>
- <https://ucm.on.worldcat.org/>
- [https://books.google.es/books/ucm?vid=UCM5313199488&printsec=frontcover&redir\\_esc=y#v=onepage&q&f=false](https://books.google.es/books/ucm?vid=UCM5313199488&printsec=frontcover&redir_esc=y#v=onepage&q&f=false)
- <https://babel.hathitrust.org/cgi/pt?id=ucm.5313199488&seq=11>

**Funding:** The present research has not received specific grants from public sector agencies, commercial sector or non-profit entities as financial support for the research, authorship, and/or publication of this article.

**Declaration of conflict of interest:** The authors declare that they have no conflicting interests.

**Authors' contributions:** This study is a collaborative investigation in which the three authors have been equally involved in all phases of the work.

## References

1. Chen C-C, Petrick JF. Health and wellness benefits of travel experiences: a literature review. *J Travel Res*, 2013, 52(6), 709-719. <https://doi.org/10.1177/0047287513496477>
2. Stone MJ, Petrick JF. The educational benefits of travel experiences: a literature review. *J Travel Res*, 2013, 52(6), 731-744, <https://doi.org/10.1177/00472875135005>
3. Cohen EH. Self-assessing the benefits of educational tours. *J Travel Res*, 2016, 155(3), 353-361. <https://doi.org/10.1177/0047287514550098>
4. Tomasi S, Paviotti G, Cavicchi A. Educational tourism and local development: the role of universities. *Sustainability*, 2000, 12(17), #6766. <https://doi.org/10.3390/su12176766>
5. Basri M, Islam FS, Paramma MA, Anas I. The impact of English educational tourism on the growth of local economy: a systematic literature review. *IJOLE-In J Lang Educ*, 2023, 7(2), 304-318. <https://doi.org/10.26858/ijole.v7i2.45783>
6. Airey D, Tribe JM, Benckendorff P, Xiao H. The managerial gaze: The long tail of tourism education and research. *J Travel Res*, 2015, 54(2), 139-151. <https://doi.org/10.1177/0047287514522>
7. Wu A, Choi E, Diderich M, Shamim A, Rahhal Z, Mitchell M, et al. Internationalization of medical education - Motivations and formats of current practices. *Med Sci Educ*, 2022, 32(3), 733-745. <https://doi.org/10.1007/s40670-022-01553-6>
8. Wijbenga MH, Teunissen P W, Ramaekers S P, Driessen EW, Duvivier RJ. Initiation of student participation in practice: An audio diary study of international clinical placements. *Med Teach*, 2021, 43(10), 1179-1185. <https://doi.org/10.1080/0142159X.2021.1921133>
9. Wijbenga MH, Duvivier RJ, Driessen E, Ramaekers SP, Teunissen PW. Challenges, coping and support during student placement abroad: A qualitative study. *Med Teach*, 2023, 45(12), 1373-1379. <https://doi.org/10.1080/0142159X.2023.2218542>
10. Batt AM, Tavares W, Williams B. The development of competency frameworks in healthcare professions: a scoping review. *Adv Health Sci Educ: Theory Pract*, 2020, 25(4), 913-987. <https://doi.org/10.1007/s10459-019-09946-w>
11. Leyerzapf H, Abma TA, Steenwijk RR, Croiset G, Verdonk P. Standing out and moving up: performance appraisal of cultural minority physicians. *Adv Health Sci Educ: Theory Pract*, 2015, 20(4), 995-1010. <https://doi.org/10.1007/s10459-014-9577-6>



12. Zayts O, Lazzaro-Salazar M. A sociolinguistic investigation of professional mobility and multicultural healthcare communication. In *Applying linguistics in illness and healthcare contexts* Demjén Z, Ed; Bloomsbury Academic: London, United Kingdom, 2020, 295-320. <https://doi.org/10.5040/9781350057685.0021>
13. Robinson N, Sugimoto CR, Murray D, Yegros A, Lariviere V, Costas R. The many faces of mobility: using bibliometric data to measure the movement of scientists. *J Informetr*, 2019, 13(1). 50-63. <https://doi.org/10.1016/j.joi.2018.11.002>
14. Saiki T, Imafuku R, Pickering J, Suzuki Y, Steinert Y. On-site observational learning in faculty development: impact of an international program on clinical teaching in medicine. *J Contin Educ Health Prof*, 2019, 39(2), 144-151. <https://doi.org/10.1097/CEH.0000000000000253>
15. Kuc KJ, Roberts DH, Caballero AE. Training future international clinical academic leaders through a structured observership program: Impact and outcomes from the initial cohort. *J Contin Educ Health Prof*, 2022, 42(1), e99-e101. <https://doi.org/10.1097/CEH.0000000000000368>
16. Orringer NL. Henry Buckle's decadent Spain in Ortega's España invertebrada. *Hispanic Review*, 2004, 72(1), 101-124. Available online: <https://www.jstor.org/stable/3246975> (visited in December 2023).
17. Frank JP. *Medicis Peregrinationibus*. In *Delectus Opusculorum Medicorum*; Pietro Galeati's Heirs Press: Pavia, Italia, 1792, 359-382. Available online: <https://patrimonioidigital.ucm.es/s/patrimonio/item/735346> (visited May 2023)
18. Fernández-Guerrero IM, Fernández-Guerrero C, Fernández-Cano A. A pioneering on medical education: the seminal text of J.P. Frank's *De Medicis Peregrinationibus* – Medical Travels (1792). *Educ Med*, 2018, 17(1), 29–34. <https://doi.org/10.1016/j.edumed.2015.09.01>
19. Aristotle. *Metaphysics, Vols. 1-9*, H. Tredennick (Trans.). Harvard University Press: Harvard, USA, 1933. <https://www.loebclassics.com/view/LCL271/1933/volume.xml> (visited June 2023)
20. Almodóvar G. Necesidad de los viajes como complemento de la educación médica [Doctoral thesis]. Madrid: College of Medicine, Central University of Madrid. Eusebio Aguado's Printing House: Madrid, España, 1855. Available at: <https://babel.hathitrust.org/cgi/pt?id=ucm.5313199488&seq=3> (visited April 2023)
21. Fernández-Guerrero IM, Fernández-Cano A. Una tesis pionera en la Medicina de Urgencias y Emergencias española: “Alcance de la cirugía [sic] de urgencias en las casas de socorro” (1907). *Emergencias*, 2013, 25(5), 409–414.
22. Fernández-Guerrero C, Fernández-Cano A. The history and progress of anaesthesia, with an account of the anaesthetic application of chloroform and some remarks in its defence. *Br J Anaesth*, 2022, 129(5), 826-828. <https://doi.org/10.1016/j.bja.2022.07.011>.
23. Diputación Provincial de Puerto Rico. Periódico Oficial del Gobierno de Puerto Rico. Secretaría. *Gaceta de Puerto Rico*, 1879, 150. Available at: [https://chroniclingamerica.loc.gov/data/batches/prru\\_cebolla\\_ver02/data/2013201074/00295865453/1879121601/0709.pdf](https://chroniclingamerica.loc.gov/data/batches/prru_cebolla_ver02/data/2013201074/00295865453/1879121601/0709.pdf) (visited July 2023)
24. Ferrer Hernández, G. La instrucción pública en Puerto Rico: su pasado, su presente y modo de mejorarla en lo futuro. González Font's Printing House: San Juan de Puerto Rico, 1884. Available at: <http://bdh.bne.es/bnearch/detalle/bdh0000094103> (visited october 2023)
25. Fernández-Guerrero C, Fernández-Guerrero IM, Fernández-Cano A. Documentos españoles sobre enseñanza de la medicina en el siglo XIX. *FEM Ed*, 2022, 25(3), 143-146. <https://doi.org/10.33588/fem.253.1202>
26. Fernández A, Torralbo M, Vallejo V. Time series of scientific growth in Spanish doctoral theses (1848–2009). *Scientometrics*, 2012, 91(1), 15-36. <https://doi.org/10.1007/s11192-011-0572-x>
27. Ekeid E. Studiosi vaganti. *Br J Med Educ*, 1966, 1, 52-57.
28. Gell OP, Cunningham A, Arrizabalaga J. *Centres of medical excellence? Medical travel and education in Europe, 1500-1789*. Ashgate: Aldershot, 2010.

29. Souto-Otero M, Huisman J, Beerkens, M, de Wit H, Vujic S. Barriers to international student mobility: Evidence from the Erasmus program. *Educ Res*, 2017, 42(2), 70-77. <https://doi.org/10.3102/0013189X12466>
30. Abedini NC, Gruppen LD, Kolars JC, Kumagai AK. Understanding the effects of short-term international service-learning trips on medical students. *Acad Med*, 2012, 87(6), 820-828. <https://doi.org/10.1097/ACM.0b013e31825396d8>
31. Mitchell AK, Mork AL, Hall J, Bayer CR. Navigating COVID-19 through diverse student learning communities: importance and lessons learned. *Health Educ*, 2022, 122(1), 37-46. <https://doi.org/10.1108/HE-01-2021-0012>
32. European Commission. *The Bologna Process and the European Higher Education Area. Education and Training*, 2018. Available at: <https://education.ec.europa.eu/education-levels/higher-education/inclusive-and-connected-higher-education/bologna-process> (visited September 2023)
33. Patrício M, Harden RM. The Bologna Process - A global vision for the future of medical education. *Med Teach*, 2010, 32(4), 305-315. <https://doi.org/10.3109/01421591003656123>
34. Wearne SM, Brown JB, Kirby C, Snadden D. (2019). International medical graduates and general practice training: How do educational leaders facilitate the transition from new migrants to local family doctor? *Med Teach*, 2019, 41(9), 1065-1072. <https://doi.org/10.1080/0142159X.2019.1616681>
35. Francis DM, Adams R. Are we promoting the health of people with physical mobility impairments? A literature review. *Health Educ*, 2010, 110(2), 135-145. <https://doi.org/10.1108/09654281011022469>
36. Tankwanchi AS, Hagopian A, Vermund SH. African physician migration to high-income nations: diverse motives to emigrate ( we are not Florence Nightingale) or stay in Africa ( There is no place like home ). Comment on Doctor retention: a cross-sectional study of how Ireland has been losing the battle. *Int J Health Policy Manag*, 2021, 10(10), 660-663. <https://doi.org/10.34172/ijhpm.2020.219>
37. Robredo JP, Ong B, Eala MA, Naguit RJ. Outmigration and unequal distribution of Filipino physicians and nurses: An urgent call for investment in health human resource and systemic reform. *Lancet Reg Health West Pac*, 2022, 25, #100512, <https://doi.org/10.1016/j.lanwpc.2022.100512>
38. Silió, E. La fuga de miles de médicos agrava el déficit de especialistas en España. *El País*, 17 october 2022. Available at: <https://elpais.com/educacion/universidad/2022-10-17/la-fuga-de-al-menos-18000-licenciados-en-medicina-en-diez-anos-agrava-el-deficit-de-especialistas-en-espana.html>
39. Gómez Conesa A, Ortiz Ruiz AJ, Cascales Campos P, García-Estañ López J. Tres semanas de docencia virtual en la Universidad de Murcia (II): Fisioterapia, Odontología, Cirugía y Fisiología. *Rev Esp Educ Med*, 2020, 1(1), 47-54. <https://doi.org/10.6018/edumed.428381>
40. Santelices, L., & Tiscornia, C. (2023). New methodological strategy for online teaching-learning with Digital Capsules. *Rev Esp Educ Med*, 2023, 4(3), 50-61. <https://doi.org/10.6018/edumed.569191>
41. Darlington E, Fields J, Greey A, Leahy D. (2022). Guest editorial: Health education's response to the COVID-19 pandemic: Global challenges and future directions. *Health Educ*, 2022, 122(1), 1-4. <https://doi.org/10.1108/HE-01-2022-136>
42. Padberg J. (Ed.). *The Constitutions of the Society of Jesus and their complementary norms. A complete English translation of the official Latin texts*. The Institute of Jesuit Sources, Saint Louis, 1996. Available at: <https://jesuitas.lat/archivo/biblioteca/biblioteca-cpal/archivo-documental/the-constitutions-of-the-society-of-jesus-and-their-complementary-norms?filename=Constitutions%20and%20Norms%20SJ%20ingls.pdf>
43. Sánchez Ron JM. La Junta para Ampliación de Estudios e Investigaciones Científicas, un siglo después. *Circunstancia*, 2007, 5(14), 1-5. [https://dialnet.unirioja.es/servlet/ejemplar?codigo=164563&info=open\\_link\\_ejemplar](https://dialnet.unirioja.es/servlet/ejemplar?codigo=164563&info=open_link_ejemplar)

44. Gómez Orfanel G. La Junta para Ampliación de Estudios y su política de pensiones en el extranjero. *Rev Educacion*, 1976, 243:28-47. <https://dialnet.unirioja.es/servlet/articulo?codigo=4334155>



© 2024 Universidad de Murcia. Enviado para su publicación en acceso abierto bajo los términos y condiciones de la licencia Creative Commons Reconocimiento-NoComercial-Sin Obra Derivada 4.0 España (CC BY-NC-ND) (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).