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Data and Decolonising the Higher Education Curriculum

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Research Domain: Academic practice, work, careers and cultures (AP)

Abstract: Higher Education Institutions (HEIs) are attempting to identify and correct systemic biases in taught curricula. One type of bias is an imbalance toward research originating from high-income countries. Manually investigating reading lists to identify this 'geographic bias' is often time-consuming and laborious. A collaboration between researchers, librarians and ICT at Imperial College has resulted in a novel computer-based method that automates this process. The tool retrieves the geographic information of the institutional affiliation for each author on a citation. Next, country income status data is collected from the World Bank. Finally, a Citation Source Index (CSI) is derived for each reading list item. The CSI is a weighted average of all authors listed on a citation, thereby visualizing the skew present on a reading list. A higher CSI indicates a greater reliance on citations by authors affiliated with HEIs in high-income countries. We describe the application of this method to a the Imperial College Masters in Public Health (MPH) programme over two time periods (2017-18 and 2019-20). We also discuss the limitations, both technical and conceptual, of our method, as well as its possible role in decolonising Higher Education practice.

Paper: Bibliometric analyses of citation networks demonstrate a gap in the consumption of global scientific research (1–4). A 2012 analysis found that North America and Europe receive 42.3% and 35.3% of the world's citations, respectively, compared to less than 5% by Africa, South America and Oceania combined (4). Similarly, a 2019 analysis found that more than 75% of social science articles indexed in the Web of Science (WoS) database originated in either America or Western Europe, with the global south combined representing less than 10% (5). There are significant interconnections between the lack of diversity in the academic library and publishing sectors, structural career barriers faced by black and minority ethnicity academics and curriculum biases (6,7). In recent years, staff and students at different Higher Education institutions (HEIs) in the UK have attempted to identify and dismantle legacies of colonisation embedded in institutional physical spaces, educational provisions and financial power structures that underlie these inequalities (8–12). Particularly in the realm of HEIs, where many institutions have historically negated ways of knowing and being that were not in accordance with 'western' ideals, applying a decolonial lens to the curriculum could prove vital (13).

Empirical analysis of reading lists is not widely used in practice, but could be an important tool for decolonising curricula (14). It could provide quantitative data as evidence in understanding whether certain geographic regions might be unduly excluded, intentionally or not, from the university curriculum. Analyses of reading lists by some UK HEIs to understand diversity or bias in the curriculum have found a preponderance of articles from the global north (14,15). Reading list analysis is often done manually, which is time-consuming and potentially prone to error. We propose a computational method that generates a quantitative indicator that facilitates time-specific and evidence-based interpretations of the data that can be used to supplement practice and theory-led discussions of decolonisation. We describe the methods used to convert reading lists of the Imperial College London Masters in Public Health (MPH) programme into machine readable code from which bibliographic and author region data and country socioeconomic status is retrieved and analysed.

We searched Leganto Reading Lists (16) using a reporting tool (17). This search retrieved data associated with all courses in the School of Medicine faculty. A PHP script made a separate curl HTTP request to the WoS database for each reading list item specific to the MPH via a GET command to the WoS API Expanded. This command automated the sending of all identified reading list items to WoS to retrieve item-level metadata, including "Author Sequence", "Author Address", "Author City" and "Author Country." The results of this automated searching and matching generated CSV files for each of the course modules. We then used the World Bank Gross National Income (GNI) per capita (Atlas Method)(18) ranking data to assign values to citations based on their authors' affiliations. The institutional affiliation data generated through Leganto and WoS as well as the GNI/capita data were used to calculate a Citation Source Index (CSI). This CSI represented a weighted average of the World Bank GNI/capita rankings for the countries of the institutional affiliation for each author listed on a citation. A CSI could be any value between 0.0049 (for a citation with authors exclusively from Somalia, ranked number 1 on the GNI/capita list) and 1 (for a citation with authors exclusively from Liechtenstein, ranked number 203 on the GNI/capita list). A CSI closer to 1 would represent authorship primarily affiliated with institutions in HICs, whereas a CSI closer to 0.0049 would represent authorship primarily affiliated with institutions in LICs.

Reading lists for the 2017/18 and 2019/20 iterations of the MPH course were analysed. The median CSI for 2017/18 was 0.8818 (IQR 0.8818 – 0.9498) and the mean CSI was 0.8837. The median CSI for 2019/20 was 0.8818 (IQR 0.8818 – 0.9557) and the mean CSI was 0.8803. Our findings for the Imperial MPH reading list indicate a notable skew towards authors from HICs with a marginal reduction in CSI from the 2017/18 to the 2019/20 course year. Despite limitations, both conceptual and technical, the methodology was successful at providing a quantitative analysis of the geographic origin of nearly 600 citations that are indexed in WoS. In producing these results, we have developed a method that permits the bulk of the labour preparing and extracting data for a reading list analysis to be done automatically. This is important for empirical reading list analyses to become more accessible tools in curriculum decolonisation projects.

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