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Vistas of the field: examining quality indicators of health and physical education journals

Leigh Sperka and Murray G. Phillips 

The School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia

ABSTRACT

In this paper, we use the field of Health and Physical Education (H/PE) to explain the limitations, nuances, and inconsistencies of three global, digitally available, and regularly updated systems: library holdings, metrics, and altmetrics. We understand these systems through the analogy of seeing different vistas of a landscape when driving a car: looking in the rear-view mirror (i.e. library holdings as past indicators of quality) and out the side windows (i.e. metrics and altmetrics as current indicators). Before examining these measures, we acknowledge the neoliberal audit culture and outline our understanding of the H/PE 'field'. To identify H/PE journals, we searched databases, websites, and literature, generating a list of 202 potentially relevant journals. After three rounds of refinement, 13 journals remained that: (1) focused on health and/or physical education as a school subject (including H/PE teacher education), (2) had official metrics, and (3) self-identified as 'Social Sciences – Education' and had more than 20% of the papers in the last two volumes focus on H/PE. For each of these journals, we provide the WorldCat library holdings, metrics (i.e. Journal Impact Factor, Journal h-index, CiteScore, SCImago Journal Rank, and Source Normalized Impact per Paper), and altmetrics. We explain how to understand these measures, as well as their contested, problematic and, often, confusing dimensions. Overall, we argue that it is crucial for scholars to understand these measures so that they can critically reflect on how measurement shapes their research and professional lives.

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Introduction

Journals have always been crucial for communication, showcasing contemporary concepts and theories, highlighting debates between scholars, and providing information about conferences, dissertations, degree programs, and new books. Throughout their history, journals have been ranked in several ways: through (1) surveys conducted by relevant scholarly communities, (2) citation-based studies focusing on frequency of articles by established scholars, (3) institutional and national research assessments (e.g. the British Research Excellence Framework, Australian Excellence in Research, and the New Zealand Performance Based Research Fund), and (4) expert panels in academic societies, universities, and government departments (Hall, 2011). While these evaluations position journals in the competitive scholarly marketplace, they are often sporadically or infrequently produced, difficult to access, challenging to interpret, and based on conditions set by national research agendas rather than field-based contexts.

CONTACT Leigh Sperka  l.sperka@uq.edu.au;  School of Human Movement and Nutrition Sciences, The University of Queensland, St Lucia, Queensland 4072, Australia  @LeighSperka

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

In this paper, we use the field of Health and Physical Education (H/PE) to explain the limitations, nuances, and inconsistencies of three global, digitally available, and regularly updated systems (i.e. library holdings, metrics, and altmetrics). The first system is library holdings, that is, the number of hard and digital copies of journals held throughout the world. The second system is bibliometrics (metrics), a set of quantitative methods used to measure, track, and analyse print-based and online scholarly literature (Roemer & Borchardt, 2015). The third system is altmetrics, which report the attention that scholarly outputs have on social media (e.g. Facebook, Twitter, YouTube) as well as in Wikipedia, Blogs, policy documents, and traditional media. We understand these three online systems through the analogy of seeing different vistas of a landscape when driving a car: looking in the rear-view mirror (i.e. library holdings as past indicators of H/PE journals) and out the side windows (i.e. metrics and altmetrics as current indicators).

In writing this paper, we recognise that these systems, in particular metrics, are integral to many parts of the neoliberal university (e.g. management, librarians, scholars, and fields), and are unfortunately unlikely to disappear in the foreseeable future. Our intention is not to advocate neoliberalism, but rather to determine what these systems can tell us about H/PE journals, how widely the journals are consulted, what sort of impact they have beyond academia, and how the H/PE field relates to its parent field of education. Before exploring the three selected systems, it is necessary to provide some context about journals and databases as well as the H/PE field.

Neoliberalism and the Information Age

The context in which H/PE journals exist has significantly changed, with some changes driven by the emergence of neoliberalism from the 1970s and 1980s. Neoliberalism is inextricably linked to globalisation, privatisation, and deregulation. In universities, it has led to the endorsement of competition, managerialism, and an audit culture that takes many forms including state, national, and international teaching, research, and overall university league tables (Feldman & Sandoval, 2018). This audit culture shapes the careers of individual scholars and the development of fields. For example, databases about scholarship that were initially established to monitor academic knowledge have been reshaped to focus on the abovementioned ranking of journals. One consequence for scholars is that 'the familiar "publish or perish" motto has been rewritten. It is no longer enough to just publish; one must publish in the "right" formats, with the "right" presses, in the "right" journals and in the "right" timeframes' (Feldman & Sandoval, 2018, p. 221). This assessment of scholars in a competitive environment creates hierarchies based on grant income, metrics, and altmetrics. Scholars applying for positions, promotion, and tenure at institutions in many national systems are acutely aware of the requirements to present themselves in a way that is acceptable in the age of the neoliberal university. Sparkes' (2021) autoethnographic insights are one example of how this audit culture places pressures on scholars to engage with metrics to become 'artificial persons'.

Neoliberalism was facilitated by the Information Age, a phenomenon that was first signalled by the development of personal computers [1970s], the World Wide Web [1980s], mobile phones [1990s], and smartphones [2000s], and has continued unabated. As Borkovich and Noah (2014) argue, the global Internet was the pivotal enabler in the Information Age: 'Pandora's Box was forever opened and there was no turning back' (p. 19). What emerged via Web 2.0 in the first decade of the new millennium was social media, blogs, Wikipedias, images, photos, and other social-cultural behavioural transmissions which augmented email as the primary form of electronic communication.

The publishing industry, including scholarly journals, was transformed during this period. For large publishing companies, the arrival of the Internet offered new options to monetise content, lock-in institutional customers, and create additional avenues for profitability. For the scholarly community, it meant fast global communication with colleagues and research communities. Even though this relationship favours large publishing companies, 'most academics remain heavily

invested in traditional publishing outlets and have acquiesced in the transfer to the online world of existing structures for the allocation of professional prestige – and with them, the commercially-oriented model of publishing’ (Fyfe et al., 2017, p. 3). Established academics have witnessed the transition of hard copy journals with complete submission, reviewing, and publication processes conducted by mail and/or email to fully digital publication operations. Many journals have moved to online publication processes from submission right through to both hard copy and/or digital distribution. While these changes have impacted all fields, in this paper we focus on H/PE and its journals.

H/PE

Determining what is and what is not a H/PE journal is complicated. This identification issue was demonstrated when a document containing a list of Physical Education (PE) Journals was tweeted to crowd-source more entries (Marttinen, 2020) and it contained a range of sub-headings including ‘PE Journals ...’, ‘Kinesiology Journals’, ‘Adapted Physical Activity/Education Journals’, ‘“Other” PE Journals’, and ‘Health Education Journals’. The complexity of determining H/PE journals is, at least in part, a result of the ongoing difficulty in defining H/PE.

It is perhaps not overly unexpected that H/PE is perceived as difficult to define, given that it is a ‘human invention rather than an occurrence in nature’ (Kirk, 2010, p. 10). This means that there will be different enactments of the subject in different places and at different times. Despite this, Kirk (2010) argues that the nuanced differences in H/PE enactment are ‘less significant than the similarities’ (p. 2). Instead of adding another definition of H/PE to the literature (see Kirk, 2010 for a summary of definitions) or providing commentary on its history and the varying local enactments, we will discuss our decisions to call it a ‘field’ and refer to it as H/PE. First, in the 1960s, there were discussions around whether H/PE was a profession or discipline (e.g. Henry, 2013; Rarick, 1967). To acknowledge these discussions, we label H/PE as a ‘field’, recognising Lawson’s (2007) argument that ‘a field can be both disciplinary and professional – simultaneously, interactively, coherently, harmoniously, and productively’ (p. 223). More specifically, we take the position that the field of H/PE ‘has a clear focus on schools and related sites, co-existing with a field named kinesiology or exercise science’ (Kirk, 2010, p. 39). Although the fields of H/PE and kinesiology or exercise science have historical connections, and to this day there are university departments variously named Schools of Human Movement, Kinesiology and Sport Science that merge these fields, we consider them identities in their own right (Phillips & Roper, 2006). Second, to acknowledge that in some countries (e.g. Australia, New Zealand, Sweden) the school subjects of Health Education and PE are amalgamated, we, like others (e.g. Welch et al., 2021), have chosen to represent the field as ‘H/PE’ as we feel this encompasses these different enactments of the subject. After making these decisions, it was then possible to determine H/PE journals.

Methods

Our approach could be considered similar to many ‘review’ types (see Grant & Booth, 2009) as it required searches, refinements based on inclusion/exclusion criteria, and data analysis. We acknowledge our interpretivist positioning – we brought specific knowledge, values, and experiences to this paper that influenced each step of the process.

Search process

To generate a list of potential H/PE journals, we used websites and/or databases as well as existing literature. First, we searched ‘Health and Physical Education’, ‘Physical Education’ and ‘Health Education’ on the SCImago Journal & Country Rank, the Web of Science (WoS) Master Journal List, and the Directory of Open Access Journals websites. Then, we reviewed Google Scholar’s ‘Top publications’ in the category of ‘Health & Medical Sciences’ and sub-category of ‘Physical Education &

Sports Medicine'. Next, we visited H/PE association websites (e.g. Association for Physical Education [afPE], The Australian Council for Health, Physical Education and Recreation [ACHPER], Physical Education New Zealand [PENZ], Physical and Health Education Canada [PHE Canada], and Society of Health and Physical Educators [SHAPE] America) to identify their attached journals. Finally, we used Maddisetty's (2014) and Kulinna et al.'s (2009) articles, which contained lists of H/PE journals, to add any missed journals to our list.

Refining of list

Through the above search processes, we identified 202 potential journals. We refined this list in three rounds (Table 1), using the following inclusion criteria:

- (1) Focuses on health and/or physical education as a school subject (including H/PE teacher education)
- (2) Has official metrics
- (3) Self-identifies as 'Social Sciences – Education' in their 'Subject Area and Category' on the SCImago Journal and Country rank website and more than 20% of the papers in the latest two volumes focus on H/PE.

Table 1. Refining process.

Round	Initial number	Number removed and reasons
1	202	83 did not meet first inclusion criteria 17 no information or couldn't access 12 duplicates
2	90	61 did not meet second inclusion criteria
3	29	15 did not meet third inclusion criteria 1 had ceased

The first round involved reviewing each journal's 'Aims and Scope' to determine whether they met the first inclusion criteria. We removed 83 journals that focused on Education (general) or teacher education (general), human movement, kinesiology, physical activity, physical culture, physical education of the general population, education of health (science) professionals, and sport (education, history, management, or sciences). Additionally, 17 journals were either not able to be accessed or had no journal information available. Further, 12 duplicates (due to differences in the translation of the journal name to English or if a journal had changed its name) were identified.

The second round involved searching the SCImago Journal & Country Rank website and Google with '[Journal title] and metrics' as well as '[Journal title] and impact factor' to determine whether the journals met the second inclusion criteria. A further 61 journals were removed. This included several 'practitioner' or 'professional' journals, for example:

- Active + Healthy Journal – ACHPER
- California Association for Health, Physical Education, Recreation and Dance e-Journal
- New Zealand Physical Educator – PENZ
- Physical & Health Education Journal – PHE Canada
- Physical Education Matters – afPE
- Strategies: A Journal for Physical and Sport Educators – SHAPE America

Finally, the third round involved examining the latest two volumes of the remaining journals and checking their category on the SCImago Journal & Country Rank website to determine whether they met the third inclusion criteria. A final 15 journals were removed:

- Adapted Physical Activity Quarterly
- American Journal of Health
- Education and Health
- European Journal of Adapted Physical Activity
- Facta Universitatis Series Physical Education and Sport
- Frontiers in Sports and Active Living
- Health Education Journal
- International Journal of Health Promotion and Education
- Journal of Physical Education and Sport
- Journal of School Health
- Measurement in Physical Education and Exercise Science
- Physical Education of Students
- Qualitative Research in Sport, Exercise and Health
- Research Quarterly for Exercise and Sport
- South African Journal for Research in Sport, Physical Education and Recreation

Some journals in this list are potentially contentious. For example, Research Quarterly for Exercise and Sport (RQES) is referred to as a H/PE journal in the crowd-sourced document on Twitter (Marttinen, 2020) and in some publications. In other publications though (e.g. Kulinna et al., 2009), RQES has been categorised as a 'Kinesiology' journal. Further, Kirk et al. (2006) explained that the journal 'has a well-supported pedagogy section' (p. x), highlighting that H/PE is potentially not the main focus of the journal. After examining the latest two RQES volumes, of which less than 13% of the articles included H/PE in their title, the journal was removed in the third round. This decision was confirmed by the 'Subject Area and Category' section on the SCImago Journal & Country Rank website, where RQES is listed as 'Health Professions' and 'Medicine', but not 'Social Science – Education'. Further, there were three journals that self-identified as 'Social Sciences – Education' on the SCImago Journal & Country Rank website but less than 20% of the papers in their latest two volumes focused on H/PE (i.e. Journal of School Health – 5%, South African Journal for Research in Sport, Physical Education and Recreation – 10%, European Journal of Adapted

Table 2. Refined H/PE journals.

Journal	Year initiated	Country of origin	Publisher	Languages
<i>Apunts. Educacion Fisica y Deportes (ApuntsEducFisDeporte)</i>	1985	Spain	Institut Nacional d'Educacio Fisica de Catalunya	Catalan, Spanish, and English
<i>Curriculum Studies in Health and Physical Education (CSHPE)</i>	1954	Australia	Taylor & Francis	English
<i>European Physical Education Review (EPER)</i>	1995	United Kingdom (UK)	SAGE	English
<i>Health Education (HE)</i>	1992	UK	Emerald Group	English
<i>Journal of Physical Education (Maringa) (JPhysEduc)</i>	2011	Brazil	Universidade Estadual de Maringa	English and Portuguese
<i>Journal of Physical Education, Recreation, and Dance (JOPERD)</i>	1896	UK	Taylor & Francis	English
<i>Journal of Sport and Health Research (JSHR)</i>	2009	Spain	Didactic Association Andalusia	English and Spanish
<i>Journal of Teaching in Physical Education (JTPE) Movimento</i>	1981 2010	United States Brazil	Human Kinetics Universidade Federal do Rio Grande do Sul	English Portuguese, Spanish, English and French
<i>Physical Education and Sport Pedagogy (PESP)</i>	1996	UK	Taylor & Francis	English
<i>Quest</i>	1963	UK	Taylor & Francis	English
<i>Sport, Education and Society (SES)</i>	1996	UK	Taylor & Francis	English
<i>Sportis. Scientific Technical Journal of School Sport, Physical Education and Psychomotricity (Sportis)</i>	2015	Spain	University of A Coruña	English and Spanish

Physical Activity – 15%). These journals were therefore also removed. In this final round, one journal (i.e. European Journal of Physical and Health Education) was also removed as it has ceased.

After these three rounds of refinement, 13 journals remained (Table 2). Again, some journals in this final list might be disputed, such as Quest. Similar to RQES, this journal is categorised differently in different places. In the crowd-sourced document on Twitter (Marttinen, 2020) and in some publications, it is identified as a H/PE journal whereas in other publications (e.g. Kulinna et al., 2009), it is labelled a ‘Kinesiology’ journal. Ultimately, Quest was deemed a H/PE journal because 40% of the latest two volumes focused on H/PE and it self-identifies as ‘Social Sciences – Education’ on the SCImago Journal & Country Rank website.

Data collection and analysis

With these H/PE journals identified, we then accessed their available data on the three selected systems (Table 3). These data were entered into tables and converted into figures where possible. We then researched each system to be able to explain what they represent and what they reveal about H/PE journals.

Table 3. Selected systems, access, and data.

System	Access	Data
Library holdings	<i>WorldCat</i> [1970s]	The most recent single, largest holding of each journal
Metrics	Web of Science (WoS) [1997]	Journal Impact Factor (JIF) h-index Journal Citation Indicator
	Scopus [2004]	h-index CiteScore Source-Normalised Impact per Paper (SNIP) (Leiden University) SCImago Journal Rank (SJR) (University of Granada)
	Google Scholar [2011]	H5index
	Altmetrics Explorer [2012]	Number of online mentions

Findings and discussion

WorldCat library holdings

Traditionally, hard copy library holdings were the principal way scholarship in journal articles was accessed. In this context, library holdings were understood as a direct measure of a journal’s reputation within a field, with the assumption that the number of holding libraries equated to the influence and importance of the journal (Hammarfelt, 2016). Since the creation of the Internet, digital access to a wide range of journals is provided by university libraries, and many open-source journals are publicly available via digital repositories. This digital access has complicated the understanding of this reputational dynamic, but library holdings still provide a view of the value of journals within a field.

Digital access is not the only factor that has impacted library holdings. While the pull factor – the journal’s status in a field – is still relevant, push factors also drive library holdings. Push factors are employed by large publishers, particularly in the digital era, to increase their titles in the marketplace. National and international publishing companies are not passive agents as they have dedicated staff and specific commercial strategies that target libraries offering both hard copy and digital access of journals bundled as packages for purchase. As discussions with librarians at our institution reveal, large commercial publishers have the power and resources to manipulate the distribution of journals and their holdings in libraries (Phillips, 2020). Acknowledging the influence of these pull and push factors, there is value in determining the world-wide library holdings of H/PE journals (Figure 1).

Library holdings of H/PE journals have several defining features. First, older journals such as *JOPERD* [1896] and *Quest* [1963] benefit in library holdings, but there are some exceptions to this pattern such as *SES* [1996]. Second, journals produced by large international publishers are well represented in libraries throughout the world, possibly reflecting both the push factors of marketing, bundling, and distribution as well as the pull factors of reputation. The top three H/PE journals, for example, are published by Taylor & Francis. Third, library holdings are likely influenced by the range of disciplines covered in journals. *Quest*, for instance, is the official journal of the National Association for Kinesiology in Higher Education that publishes ‘interdisciplinary scholarship for professionals in kinesiology in higher education’ (Informa UK Limited, 2022a). The combination of these factors helps explain the limited library holdings of *JPhysEduc*. It is relatively new [2011], published by a smaller publisher, and is primarily written in a language other than English. Finally, *ApuntsEducFis-Deporte*, *JPhysEduc*, *JSHR*, and *Movimento* are the only H/PE journals publishing in languages other than English (Catalan and Spanish; Portuguese; Spanish; and Portuguese, Spanish, and French respectively). The fact that all H/PE journals are produced in English, and only four publish articles in other languages, indicates that English is the lingua franca in H/PE research. While H/PE is similar to many academic fields in this regard, the linguistic imperialism associated with English raises a host of issues and challenges for non-English scholars and the expansion of the scholarly horizon of the field (de Pina Cabral, 2007; Ortiz, 2004).

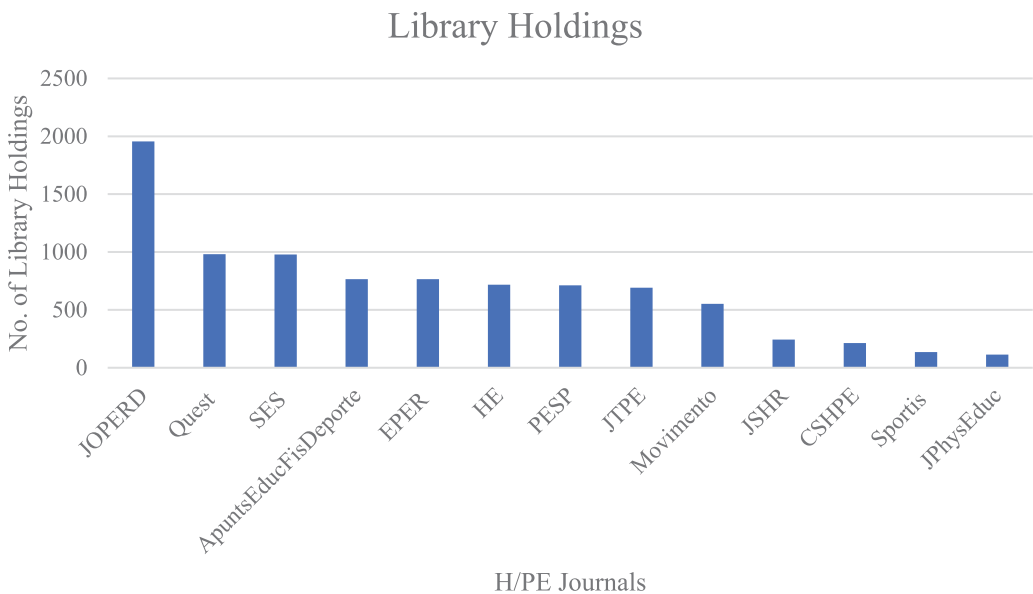


Figure 1. Library holdings.

Metrics

Before unpacking the selected metrics, we wanted to highlight where there has already been ‘push-back’ against this system. There is, for example: the Declaration on Research Assessment [DORA], which ‘recognizes the need to improve the ways in which the outputs of scholarly research are evaluated’ (DORA, n.d.); the Leiden Manifesto for Research Metrics, where five experts have proposed ten principles for the measurement of research performance; and the Metrics Tide, an UK Independent Review of the Role of Metrics in Research Assessment and Management. Further, more recently, the European Research Council, a public body for funding of scientific and technological research

conducted within the European Union, outlined in their 2022 Work Programme that applicants were not able to use Journal Impact Factors (JIF) when explaining their track record. We frame our discussion about H/PE journals in the spirit of these critiques, fully acknowledging the inconsistencies, biases, and limitations of metrics. Finally, we recognise that the three selected databases are English language based. Their selection is because there are more H/PE journals in these databases than others. Importantly, however, journals such as *Sportis* appear in WoS, but also in Dialet that caters for Spanish journals and REDIB for journals that are published in the Ibero-American region.

Journal impact factor

We begin by looking at JIF (Figure 2) as it is ‘the most widely used bibliometric indicator in the scientific, scholarly and publishing community’ (Colledge et al., 2010, p. 216). JIF carries considerable cultural credibility in journal metrics, including H/PE journals which often prominently display their JIF for their readership. JIF can be determined using different time frames, but in its most popular form represents the number of citations of journal articles during the two preceding years divided by the total number of citable documents published in that journal during the same time period (i.e. original papers, reviews, short communications, medical case reports) (Bornmann et al., 2012).

As prominent as JIF is in the academic community, it has widely recognised problems. The concerns stem from its technical imperfections (i.e. skewness, false precisions, absence of confidence intervals, and the asymmetry in the calculation) (Larivière & Sugimoto, 2019), hidden and unverifiable calculations (Teixeira da Silva & Memon, 2017), and misuse as an indicator of an individual’s or an article’s scientific merit (Bornmann et al., 2012). Furthermore, over the last couple of years, JIF has proved to be volatile. As Figure 2 demonstrates, not only has the ordering of the H/PE journals changed when comparing the 2019 and 2020 data, but so too has their JIF scores, with some considerable fluctuations. These changes resulted from modifications in calculations of the 2020 JIF which, for the first time, included ‘Early Access Items’ in the JIF numerator (Hubbard, 2020). This example demonstrates the value of understanding how metrics are calculated and what impact this has on the ability to make valid comparisons and judgments.

The additional problem of JIF for H/PE journals is the narrow list of journals in the WoS database. The WoS database draws extensively on Science, Technology, Engineering, and Mathematics (STEM)

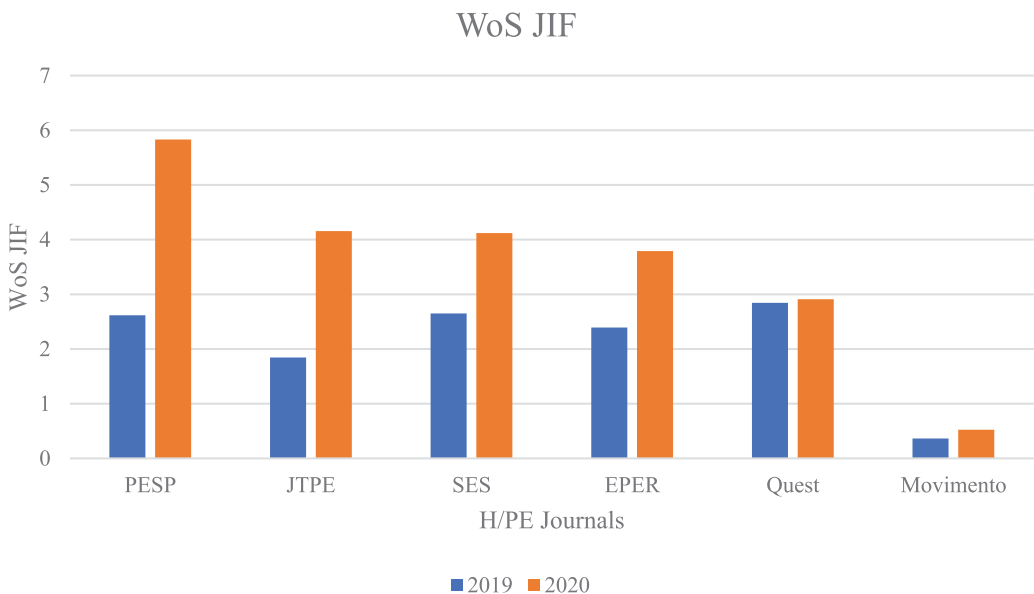


Figure 2. H/PE journals WoS JIFs (2019 and 2020).

fields which results in a very lean range of education journals (Harzing & van der Wal, 2009). For example, in 2020 WoS only listed 723 titles under the category of 'Education & Educational Research' journals. In comparison, Scopus listed 1254 titles under the category of 'Education' journals. Consequently, all WoS metrics, like JIF (and its iterations), draw on a smaller number of education journals than in Scopus, an issue also recognised in the arts, humanities, and social sciences. Finally, and equally telling for H/PE journals, is that only 6 out of 13 are currently listed with a JIF, which considerably limits comparisons in H/PE. For these reasons, we deliberately extended our analysis to the range of metrics available through Elsevier's Scopus and Google's Google Scholar which both hold a greater range of education journals.

Journal h-index

H-indexes play a significant role in assessing individual scholars, but it is also a metric that is a 'useful supplement' (Braun et al., 2005) to understand the impact of journals. It is an open-access metric that is calculated using Google Scholar, Scopus, and WoS databases (Bornmann et al., 2012). A journal has 'an h-index value of y if the entity has y publications that have all been cited at least y times' (Hodge & Lacasse, 2011, p. 583). As indicated in Figure 3, *SES* has an h-index value of 63 in Scopus because 63 of its articles had been cited at least 63 times each.

As with all metrics, there are limitations with journal h-indexes. First, h-indexes are field dependent, reflecting scholarly patterns and practices within fields, and it is pointless to compare H/PE journals, for example, with h-indexes of journals in STEM fields. Second, h-indexes are also insensitive to the actual volume of citations. For example, *PESP* with a h-index of 36 in Scopus has 724 total citations in the last three years, while *EPER* with a h-index of 44 has 224 less citations in the same time period. Furthermore, high volume journals do well in h-indexes. *SES* with a h-index of 63 in Scopus produced 207 documents over the last three years, which is almost double of the average (116) of *PESP*, *JTPE*, *EPER*, and *Quest*. Finally, h-indexes favour older journals and disadvantage newer journals, as they are strongly related to the time the publications have existed (Mingers & Yang, 2017). In the WoS h-index, *Quest* [1953], the oldest journal in the H/PE field that has not changed its name, is ranked first. Newer journals or those who have changed their names are disadvantaged in h-indexes. *JSHR* [2009] and *JPhysEduc* [2011] suffer from their relatively recent establishments, while

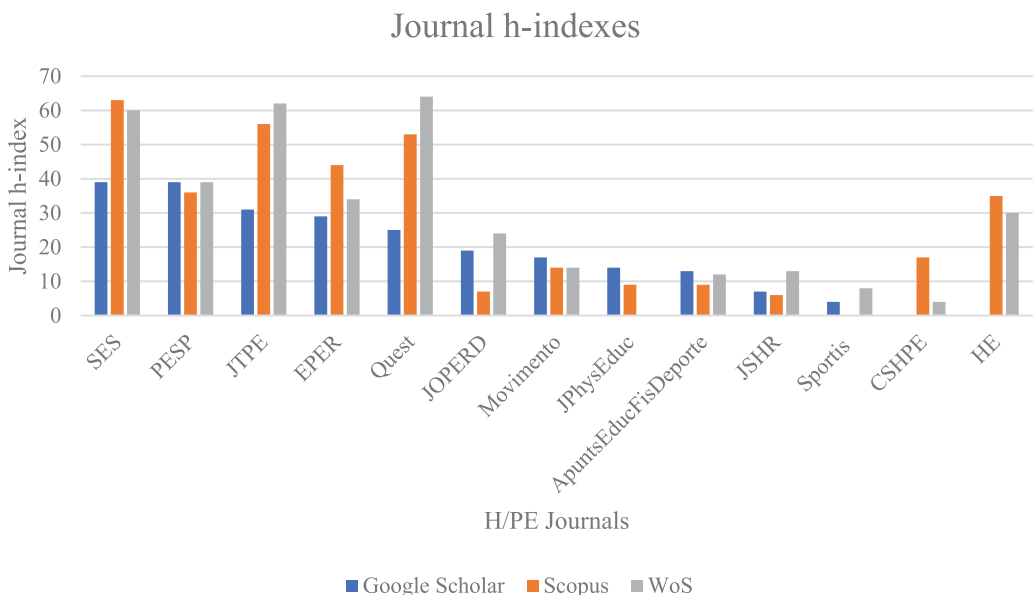


Figure 3. H/PE H-index journal metrics and rankings (2020).

CSHPE's 2018 name change and, to a lesser degree, the *JOPERD*'s 1982 name change have affected their h-indexes.

Of the three different versions of h-indexes, we prefer the Google Scholar h-index, and prioritise it in [Figure 3](#). This preference is based on the abovementioned limited range of education journals in WoS that underpin all its metrics, and that both the WoS and Scopus h-indexes are not automatically bounded by time. The Google Scholar h-index has two redeeming features: it has the widest coverage of publications as it uses automated methods to crawl the web and indexes any document with an academic structure (Martín-Martín et al., 2018) and the Google Scholar h5-index only incorporates articles that were published in the last five calendar years, alleviating the limitations related to publications age.

As such, h5-indexes of *SES* and *PESP* denote that these journals have published 39 articles in the previous 5 years that have 39 or more citations each. Google Scholar also has an additional metric, the h5-median, which measures the median value of citations in the h5 index. In the case of H/PE journals, the h5 median confirms the rank order in the h5 index with very little variation and, as a result, we did not include this additional metric in [Figure 3](#). For example, *SES* and *PESP* generate exactly the same metrics: both journals have a h5 medium of 57 which means that, of the 39 articles with 39 or more citations, the median of those citation values is 57. Finally, the Google Scholar h-indexes position the entire range of H/PE journals differently to the WoS and Scopus h-indexes. Google Scholar's h5-index presents the field's journals as a continuum, rather than the sharp demarcation that exists in the other h-indexes between the top 5 ranked journals and the rest, which is probably more representative of the productivity of the journals given their age and their title changes.

Scopus database and metrics

Several other indicators have emerged as complementary to or competitive with JIF and h-indexes (Larivière & Sugimoto, 2019). These include Scopus's three key metrics: CiteScore, SCImago Journal Rank (SJR), and Source Normalized Impact per Paper (SNIP) ([Figure 4](#)).

Scopus's CiteScore is 'the number of citations to documents (articles, reviews, conference papers, book chapters, and data papers) by a journal over four years, divided by the number of the same

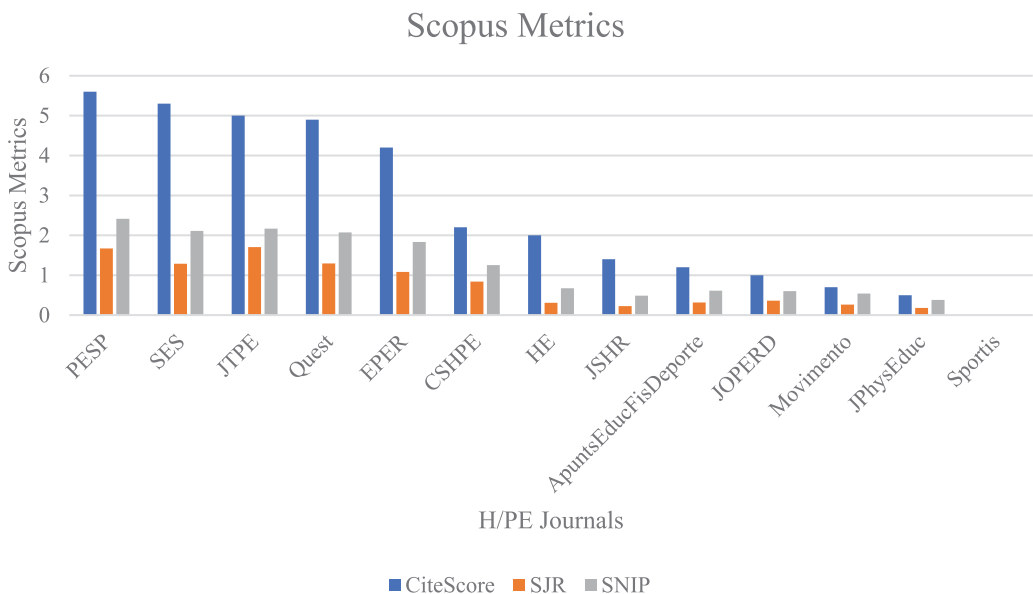


Figure 4. Scopus metrics and H/PE journals (2020).

document types indexed in Scopus' (Elsevier, 2021). In this sense, CiteScore has notable similarities with JIF. However, comparing JIF and CiteScore, Teixeira da Silva and Memon (2017) highlight three notable differences: CiteScore is owned by a publisher (Elsevier) unlike JIF; the denominator in CiteScore uses data over 4 years whereas JIF uses 2 years of data; and CiteScore includes editorials, letters, and news items, which JIF does not. As CiteScore does not attempt to normalise its data, it can only be employed within a field such as Education. CiteScore has the capacity to rank H/PE journals but, more valuably, it demonstrates that *PESP*, *SES*, *JTPE*, *Quest*, and *EPER* are a distinct group of high performing journals in CiteScore.

The second metric is SJR, which represents the relationship between weighted citations and the number of published documents. Citations are weighted according to patterns in subject fields and a prestige dimension is added based on the quality of the citing journals. As such, SJR is a 'prestige metric' that uses 'weight[ed] citations in the current step according to the SJR of the citing journal in the previous step' (Colledge et al., 2010, p. 217). SJR ignores self-citations and contains both citable and non-citable items in the denominator (Bornmann et al., 2012).

The final Scopus metric is SNIP, which measures the contextual citation impact by evaluating the journal's citation count per paper in relation to the citation potential in the journal's subject field. As Colledge et al. (2010) explain: SNIP's 'denominator is the *citation potential* in a journal's subject field, a measure of the citation characteristics of the field the journal sits in, determined by how often and how rapidly authors cite other works, and how well their field is covered by the [Scopus] database' (p. 217).

In regard to SJR and SNIP, the score of 1 represents the average for all journals in the education field in Scopus (Huggett, 2013). On this basis, five H/PE journals – *JTPE*, *PESP*, *Quest*, *SES*, and *EPER* – are above the average in the education field for SJR. When extended to SNIP, *CSHPE* joins these five H/PE journals as scoring above the average for education journals. SJR and SNIP are also valuable as they are appropriate metrics to make direct comparisons of journals across fields because, through slightly different mechanisms, they normalise for fields (Huggett, 2013). SJR and SNIP can be employed to provide meaningful comparisons with other fields often found in schools of kinesiology such as sport sociology, leisure, and sport history (Phillips, 2020). With respect to SJR, while there are five H/PE journals over the average, there are only three sport sociology journals and no leisure or sport history journals that achieve the average. It appears that the prestige component of citing journals works beneficially for H/PE journals compared to these other fields. Regarding SNIP, while there are six H/PE journals over the average, there are also four sociology journals, four leisure journals and one sport history journal, reaching the average in their disciplines. From this comparison, H/PE journals are performing well in comparison to other fields in two key Scopus metrics.

Using CiteScore, SJR, and SNIP it is possible to provide a commentary individually and collectively about H/PE journals. As Scopus engages with a much larger number of education journals than WoS, these metrics offer richer information to understand the dissemination of research through H/PE journals. It also enables more meaningful comparisons within the field of H/PE as it provides metrics for all H/PE journals, as well as allowing H/PE journals to be compared to education journals to make some assessments about where H/PE sits in relation to its parent field.

H/PE in the educational context

While metrics about individual journals provide important data for journal publishers, editors, and scholars, we have consciously shied away from creating a league table where every H/PE journal is ranked according to JIF, h-indexes, CiteScore, SJR, and SNIP because it would take away from the objectives in this paper: to explain and demystify journal metrics. What is far more relevant and valuable for the H/PE field is how the journals compare to other education journals in the databases. This can be determined through 'Quartiles', where journals are placed in categories and their ranking according to certain metrics (e.g. JIF, CiteScore, and SJR) are used to determine whether they are in the top 25% (Q1), 25%–50% (Q2), 50–75% (Q3), or 75–100% (Q4) for that category based on that metric. In WoS, these journals comprise the category of 'Social Sciences – Education &

Educational Research’, and in Scopus they comprise the category of ‘Social Sciences – Education’. Figure 5 positions H/PE journals in the quartiles generated by WoS and Scopus (CiteScore and SJR).

Regarding the WoS Journal Citation Index, five H/PE journals are recognised as Quartile 1 journals, one is recognised as Quartile 2, three are recognised as Quartile 3, and one is recognised as Quartile 4. A notable feature of the WoS quartiles is the appearance of *ApuntsEducFisDeporte*, *JSHR*, *JOPERD*, and *Sportis*. These journals are included in the WoS Emerging Sources Citation Index, but have not generated a JIF and, therefore, do not appear in Figure 2. CiteScore and SJR, reflecting a greater number of education journals, position more H/PE journals in Quartiles. SJR adds an additional journal, *CSHPE*, to Quartile 1. Cumulatively Figure 5 demonstrates that five or six H/PE journals, using three different metrics across two databases, are in the top 25% of education journals. For a field with a complicated identity and often marginalised within primary and secondary schools (e.g. Cruickshank et al., 2020), H/PE is performing well in the broader education field.

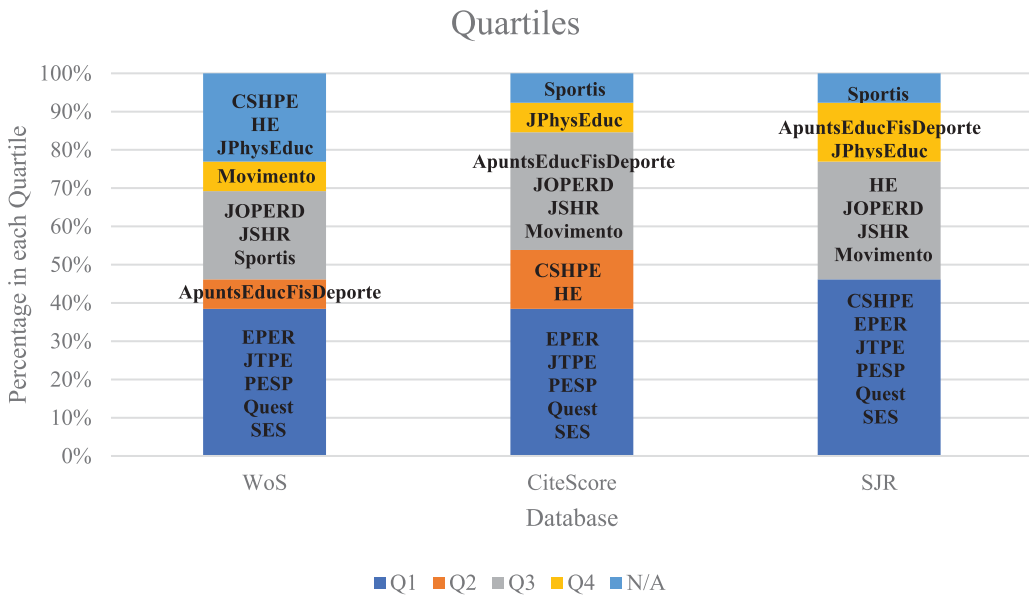


Figure 5. H/PE journals quartiles for education in WoS and Scopus (2020).

Altmetrics

As contemporary as metrics appear, the algorithms used to generate them are retrospective: they are based on various citation windows from previous years. The most current information about scholarship in journals is derived from web-based altmetrics. Altmetrics ‘is a portmanteau, formed from the combination of “alternative” and “metrics”’ (Roemer & Borchardt, 2015, p. 100) and they provide the capacity to measure and monitor the attention, and potential downstream impact, of scholarship and research through online interactions. Altmetrics utilises ‘big data’, that is, ‘structured, unstructured, and raw data stored in multiple disparate formats’ (Borkovich & Noah, 2014, p. 16). They are most productively employed as complementary to citation-based metrics.

There are two major forms of altmetrics: those generated by peer networks (such as *Academia.edu*, *ResearchGate* and *Social Science Research Network*) and harvesters (*ImpactStory*, *PlumX* and *altmetric.com*). Harvesters are valuable for journals because they gather information from external sources and aggregate online attention providing their own data for comparative analysis (Roemer & Borchardt, 2015). The harvester that currently dominates the journal market is

altmetric.com, with one of its products, *Altmetric Explorer*, 'primarily designed for publishers wishing to sift through altmetrics data to learn more about attention and use of their journals' (Roemer & Borchardt, 2015, p. 136). Scholars may be familiar with the *altmetric.com* donut for individual papers in which colours in the donut depict the type of online attention while the number in the middle of the donut indicates the volume of activity level (Roemer & Borchardt, 2015, p. 135).

As Table 4 indicates, there is no shortage of information available through altmetrics. The quantity of information only multiplies when you investigate the attention provided by each altmetric site. *Altmetrics.com* has made value decisions about mentions in these sites based on their perceived importance and impact. The most valued mentions are those found in the news (8), followed by blogs (5), *Wikipedia* (3), policy (3), *Twitter* (.25), and *Facebook* (FB) (.25). Consequently, in the algorithm employed by *Altmetrics.com*, mentions in the news are valued 32 times higher than the lowest rating types of attention on *Twitter* or *Facebook*. The sheer volume of tweets, however, indicates that the social media site is an important player in online attention.

With respect to news, the standout H/PE journal is *SES* with 158 mentions. These news mentions span outlets in 17 countries with over 90% surfacing in Australia, the USA, the UK, New Zealand, India, Norway, Iceland, and South Africa. The Conversation [2011] is the most popular media outlet with over 30 mentions and is a major news outlet for *EPER* and *JOPERD*. The Conversation highlights journals and scholarship which are then disseminated well beyond the academy through other news outlets.

The quantity of attention provided to H/PE journals in blogs and *Wikipedia* are not as significant. While blogs and *Wikipedia* contribute less from a numerical perspective, they are valued in *altmetric.com*. Blogs are valued because they are created by an individual or a small group and cater for specialist audiences. The blogs that frequently mention H/PE journals are *The Sociological Life*, created by Australian scholar Deborah Lupton, and *Sport Education Research* created by Swedish scholar Mikael Quennerstedt. In contrast, mentions in *Wikipedia* are valued because of the reach of the online encyclopedia, which is recognised as the largest, participatory knowledge exercise ever conducted in human history (Burdick et al., 2012). Most attention in *Wikipedia* is focused on *JOPERD*. Its attraction is probably two-fold: as a 'practitioner' journal with articles targeted more for general readership and its wide coverage of topics in at least three disciplines. *Wikipedia* articles that cite *JOPERD* range from women's sport, dance education, sportsmanship, ancient chariot racing, games for understanding, disabled sports, CrossFit, Native American recreational activities, play, wellbeing, dance and health, lack of PE and mainstreaming in sport.

The journals with the most attention in Policy documents are *JOPERD*, *SES* and *JTPE*. Collectively the digital attention to these journals in national policy documents span a range of countries including the USA, the UK, Australia, Belgium, France, Luxemburg, Netherlands, Norway, Sweden, and Switzerland. These journals are also mentioned in major national and international organisations such as the National Institute for Health and Care Excellence (UK), Centre for Disease Control and Prevention (USA), the World Health Organisation, and the United Nations Educational Scientific and Cultural

Table 4. Altmetrics and H/PE journals (2021).

Journal title	Total mentions	News	Blog	Wikipedia	Policy	Twitter	FB	Other
PESP	8447	38	23	3	25	8335 (99%)	18	5
SES	7096	158	30	5	46	6794 (96%)	50	13
EPER	3613	60	11	4	27	3485 (96%)	21	5
JOPERD	1297	52	8	32	51	1108 (85%)	34	12
CSHPE	982	0	1	0	0	978 (99%)	2	1
JTPE	695	8	2	3	45	618 (89%)	9	10
<i>Movimento</i>	129	0	0	2	0	112 (87%)	10	5
<i>Sportis</i>	41	0	0	1	0	38 (93%)	2	0
<i>ApuntsEducFisDeporte</i>	17	0	0	0	0	15 (88%)	2	0
<i>Quest</i>	13	0	0	0	0	11 (85%)	2	0
<i>JSHR</i>	7	0	0	0	0	5 (71%)	2	0
<i>HE</i>	4	0	0	0	0	4 (100%)	0	0

Organization. At a time when universities are looking for engagement beyond the sector, the attention to scholarship and journals in the policy space in education, health, and culture demonstrates national and international impact.

Social media makes the largest quantitative contribution to altmetrics. *Twitter*, the 'world's premier message network' (Sexton, 2014), dominates as it constitutes an average of 90% of total mentions across all altmetric sites for H/PE journals. In the *altmetrics.com* algorithm, tweets have the lowest valued score presumably because of their ubiquity. Nevertheless, it is hard to deny the access and reach of *Twitter*. *Twitter's* primary attribute is that it allows anyone to follow anyone. The two most prolifically tweeted H/PE journals are *PESP* and *SES*. Tweets referring to these journals reach 74 and 81 countries respectively, and between 25% and 35% are new tweets about these journals, with the UK being the most dominant country of origin. The largest creators of tweets are often institutional such as the journal itself or its publishing company, which is the case with *PESP*, but the sheer number of tweets and retweets generated by individuals demonstrate the dissemination, diffusion, and decentralisation of scholarship in these journals.

Implications and conclusion

We have engaged with what is currently available in the Information Age to develop a narrative of H/PE journals as both individual scholastic forums and as part of a larger identity that constitutes the field of H/PE. The H/PE narrative is connected to a larger project that examines neoliberalism and journals in the sport humanities (Olive et al., 2022; Phillips, 2020). We framed the H/PE narrative using an analogy of seeing different vistas of a landscape when driving a car: library holdings as viewing H/PE journals through the rear-view mirror at their past and metrics and altmetrics as looking out the side windows at the present. Our analogy helped demonstrate the changing face of journal culture and highlight how different vistas show different versions of the H/PE journal landscape, including their scholastic and societal impacts. H/PE journals published by Taylor & Francis acknowledge this latter point, informing readers that: 'any one metric only tells a part of the story of a journal's quality and impact. Each metric has its limitations which means that it should never be considered in isolation, and metrics should be used to support and not replace qualitative review' (Informa UK Limited, 2022b). This is exactly why we engaged with a range of metrics (i.e. JIF, h-indexes, Citescore, SJR and SNIP from WoS, Scopus, and Google Scholar) as well as library holdings and altmetrics to explore the limitations of these systems and what they offer for understanding H/PE journals. Importantly, we acknowledge that there are also 'blind spots' in the car – aspects of the H/PE journal landscape that are not easily captured through measurement systems. Although our analogy was useful, there are two elements that need to be unpacked further.

Firstly, we positioned altmetrics and metrics as looking out the side windows of the car, that is, that they are current indicators about journals that are best utilised as complementary tools. We arguably could have positioned altmetrics as looking through the windscreen of the car due to their 'futuristic' elements. When the Altmetrics Manifesto was first released, altmetrics were indeed promoted as 'Tomorrow's Filters' because they: effectively utilise the capacity of an ever-expanding range of digital resources in the Information Age, provide almost immediate reactions to scholarship rather than the considerable lag that typifies metrics, and generate important information about scholarship in a broad ecosystem that extends well beyond academia (Priem et al., 2010). It has, however, been over ten years since then and the original Manifesto authors have recently reflected on developments during that time (Derrick et al., 2020). We therefore consider the actual future indicator to be unknown (or known but not yet implemented). In our analogy, then, the view from the windscreen is a bend in the road, with the future path not yet visible.

Secondly, our analogy focuses on looking *outside* the car at various vistas of the H/PE journal landscape, instead of focusing on who sits *within* in the car – academics. Papers focusing on academics within the neoliberal university already exist within the H/PE field (see Enright et al., 2017). This includes Barker's work (2017) who prefaced his article with a summary of neoliberal academics

being ‘ninjas, zombies, and nervous wrecks’; identities which can be applied more specifically to the audit culture we have focused on within our paper. Academics sitting within the car can become ninjas who embrace metricization, perhaps going as far as to ‘game’ the system for their advantage (e.g. creating informal citation circles to routinely acknowledge each other’s research or encouraging authors to cite articles from their journal when they act as editors) (Muller, 2019). They could also become zombies or nervous wrecks, two responses to dealing with imposed performativity, that is, being reduced to a score to be ‘machine readable’ and having to make spectacles of themselves to forge successful careers or even just hold their positions (Sparkes, 2021). There are, as Barker (2017) demonstrates, still opportunities to resist this performativity and maybe even step out of the car to view and engage with the H/PE journal landscape in a different way.

Overall, we hope our paper helps scholars understand how metrics and altmetrics are shaping their professional lives. This knowledge can assist in pushing back against inappropriate use of journal metrics and altmetrics, which could be particularly useful for any H/PE scholars who are systematically disadvantaged in senseless comparisons with colleagues in Kinesiology schools. Further, and finally, it can build scholars’ capacity to defend their careers, their journals, and their fields under the duress of neoliberalism in our institutions.

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ORCID

Murray G. Phillips  <http://orcid.org/0000-0001-5842-8913>

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