Learning analytics research in Australasia: A bibliometric analysis

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Abstract

Learning analytics (LA) strategically uses educational process data to enhance understanding and improve teaching and learning outcomes. It involves the measurement, collection, analysis, and reporting of data about learners and their contexts to optimise learning processes and environments (Siemens & Long, 2022). LA supports goals such as developing lifelong learning skills, providing personalised feedback, enhancing critical thinking and collaboration, promoting self-reflection, and evaluating pedagogical innovations. The increasing number of scientific studies on LA highlights its growing importance. Bibliometric methods, which evaluate, interpret, and summarise these publications, provide valuable insights into the effectiveness and progress of LA research, including research efficiency, citation rankings, and collaboration patterns among authors, institutions, or countries.

This study employs both descriptive and bibliometric analyses, including visualisation of similarities (VOS), to assess the state of LA research and its bibliometric indicators over time. Focusing on Australasia, including Australia, New Zealand, and adjacent islands, it analyses academic literature through citation analysis, co-authorship patterns, and keyword trends. By mapping relationships and influences within the field, it identifies emerging topics and tracks the evolution of research themes. The comprehensive overview provided by analysing publication connections guides future research and prevents redundant studies, fostering original contributions. Key questions addressed include article distribution by publication year and citation numbers, publication trends, prominent publication titles (journals/conferences), frequently cited publications, leading researchers, and contributing institutions.

Publications on LA in the Web of Science Core Collection database were examined for all years up to mid-June 2024. Information from 663 articles was systematically reviewed and analysed, spanning various document types, such as articles, proceeding papers, review articles, and early access publications. These documents are indexed across databases, including SSCI, CPCI-S, ESCI, CPCI-SSH, SCI-EXPANDED, and A&HCI. The inclusion criteria ensured that only works published in English and related to keywords such as "learning analytics", "educational data mining", and other learner or learning-related analytical terms (e.g., learner experience/behaviour, learning process) were considered.

The findings illuminate the academic contributions from top institutions and journals/conferences and outline the evolution and impact of LA within the Australasian region. This study provides insights into the scholarly landscape, offering a clear view of how LA practices are integrated and evolving in response to regional educational needs. It maps the development and influence of LA research over time, guiding future research directions and fostering original contributions.

Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. EDUCAUSE Review, 46(5), 30-32.