

Editorial: Volume 30 Issue 4

In the Editorial for this issue we are very pleased to have permission to reprint the analysis of AJET, which was recently published in the *Educational Technology* magazine (Hadlock, et. al., 2014). The article is the latest in a series analysing key academic journals in the field of educational technology. The authors chart AJET's development over the decade from 2003 to 2012, highlighting key points in its history. Their analysis includes article types, methodologies, citation and authorship. The findings show the significant expansion in scope and reach of AJET over that formative period, and provide a basis for reflection about our history. The authors conclude that AJET "will continue to be well positioned to establish policy and practice in international education trends" (p.47).

As always this issue of AJET contains a broad range of papers on key areas in research and development facing the international educational technology community. The first paper in this issue by Palmer and Holt presents a repeated, cross-sectional study that was undertaken over a number of years, which investigates staff and students' perceptions of the value and benefits of online learning environments. This paper is followed by two that consider how blogs are used in higher education: Sullivan and Longnecker's paper considers the implementation of blogs in science communication classes and provides clear advice on how blogs can be effectively used; and the study reported in Chen's paper uses a mixed methods approach to investigate how different types of feedback provided by teachers impacts on students' use of blogs. The next two papers tackle the ever-present issue of mobile learning. Roberts and Rees present an illuminating study on how students are using mobile devices in lectures while Joo, Lim and Lim use structural equation modelling in their study to investigate factors that impact on students' intention to use and the actual use of mobile devices for learning. In Alammery, Sheard and Carbone's paper, a concrete guide is provided for educators who are interested in designing blended learning environments but may be more accustomed to face-to-face teaching and learning. The paper from Collins and Knoetze capitalises on a long history of the use of cognitive tools in educational technology research and development; their paper presents a project that uses an expert system shell as a tool for the development of higher order thinking. The final paper in this issue by Lu and Churchill explores an area of growing research interest; the interaction patterns of students in social networking environments that have been used for learning.

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Hadlock, C., Clegg, J., Hickman, G., Huyett, S., Jensen, H., & West, R. (2014). Educational technology research journals: Australasian Journal of Educational Technology 2003-2012. *Educational Technology*, July-August, 42-48.

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An Analysis of the *Australasian Journal of Educational Technology* 2003-2012

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We analyzed all research articles in the *Australasian Journal of Educational Technology* from 2003 to 2012 to determine the types of research methodologies published, major contributing authors, and most frequently referenced keywords, abstract terms, and cited articles. During this decade, the majority of articles published were interpretative studies, followed by inferential and theoretical articles. Later in this decade, as the number of articles published in the journal increased, we observed a decrease in theoretical and descriptive articles. Following this trend, the journal's top-cited articles earlier in the decade were theoretical articles, while more of the top-cited articles in later years used interpretative/qualitative methodologies. The international-focused journal emphasized higher education and learning technologies.

Introduction

The *Australasian Journal of Educational Technology* (*AJET*) is an open access, online-only journal. Topics focus on education design and educational technology, specifically information technology, e-learning, multimedia, and computer-assisted learning. The current focus of the journal is to “promote research and scholarship on the integration of technology in tertiary education, promote effective practice, and inform policy.” The journal also promotes “understanding educational technology in post-school education settings, including higher and further education, lifelong learning, and training” (“Australian Journal of Educational Technology—History,” n.d.)

AJET was established in 1985 as a publication of the Australian Society for Educational Technology (ASET). In 1997, ASET and the Australian Society for Computers in Learning in Tertiary Education (ASCILITE) began jointly publishing *AJET*. ASET dissolved in 2005, leaving ASCILITE as the sole publisher of the journal. Before 2004, *AJET* was published as the *Australian Journal of Educational Technology*. The name was changed in 2004 to the *Australasian Journal of Educational Technology* to reflect the wider reach and scope of the journal. Editors also felt that the new title was more representative of their actual and desired authorship. An *AJET* editorial stated:

The term ‘Australasian’ is regarded by many as being more ‘inclusive’ than ‘Australian,’ with particular reference to authors, readers and colleagues in New Zealand, the South Pacific, Southeast Asia and East Asia. This is important for *AJET*, as we increase our number of authors from the ‘Australasian’ region, especially Singapore, Hong Kong SAR and New Zealand. (Atkinson & McLoughlin, 2004)

In 2007, *AJET* merged with *IJET* (*International Journal of Educational Technology*) and *e-JIST* (*e-Journal of Instructional Science and Technology*). The editorial board also announced the final paper copy of the journal that same year.

The journal management changed in 2007, moving from the inaugural editorial board (1998-2006) to a management committee. In 2009, the journal changed oversight again to an international editorial board with an emphasis on leadership in educational technology fields from more than just Australia (“Editorial Board,” n.d.). The editorial board stated the aim of the journal is to help address the underrepresentation of non-Western, nonnative English speakers in the Australasian region (Atkinson & McLoughlin, 2009).

Methods

We reviewed each issue of the journal from 2003-2012, for a total of 470 articles, excluding editorials, commentaries, introductions, and book reviews.

Keywords and Abstracts Analysis

We completed the keyword analysis of *AJET* by using the keywords, or subject terms, found in the ERIC database. We did not include the articles from 2003 because they are not found in the ERIC database. More than 1,100 unique keywords were identified. After we identified all of the keywords, we sorted and alphabetized them and then combined them into meaningful categories. We sorted them a final time before totaling overall percentages. We listed the top 20 combined keywords.

We analyzed the abstracts by finding the most common two-word combinations using an online tool, WriteWords. We eliminated combinations that were not descriptive, such as “of the” or “this paper.” We sorted the abstract phrases in a similar method to the keywords and identified the most common two-word combinations.

Analysis of Article Types and Methodologies

The *Australasian Journal of Educational Technology* publishes articles with different methodologies. We coded each article according to the following six categories, describing article methodologies and types: descriptive, inferential/quantitative, interpretative/qualitative, theoretical, content analysis, and combined methods. Following are the definitions we used to guide our coding:

- *Descriptive*—research primarily relies on survey and questionnaire data collection methods where the statistics are analyzed and reported descriptively.
- *Inferential/Quantitative*—articles employ experimental, quasi-experimental, or correlational types of methodologies that test hypotheses or validate instruments.
- *Interpretative/Qualitative*—studies focus on interpreting data to develop theory and often include interviews and case studies.
- *Content analysis*—articles reduce data into specific pre-determined categories that are reported descriptively.
- *Combined methods*—studies are faithful to the requirements of at least two previously mentioned methods.
- *Theoretical*—articles are not data-based and include models, instructional approaches, and literature reviews.

Our coding categories also reflect current journal submission requirements for data methods (“Editorial Board Policies,” n.d.).

To ensure conformity in analysis, first we analyzed all articles in one journal issue as a group. Then we double-coded 10% of the remaining articles to insure consistency in interrater agreement. We double-coded articles where researchers questioned which methodology was used.

Citation Analysis

We used Google Scholar to analyze article citation trends and to identify which articles published by *AJET* were most cited during the years analyzed. To obtain these results, we searched in Google Scholar for the name of the journal and specified that our search return only results from a single year at a time. This search allowed us to view each of the articles published in a given year by *AJET*, along with the number of citations they received, and then identify those which had received the most citations. We gathered our citation data in November 2013, therefore the data and inferences presented are reflective of citation counts at that time. These articles provide a reference of *AJET* publications that have most influenced and inspired later research.

Authorship Analysis

The *Australasian Journal of Educational Technology* published articles from 1,132 total authors and 927 unique authors during this decade. We analyzed these authors’ contributions, quantifying who published

the most articles in which years, to determine trends in publication. We also examined whether articles were single- or multi-authored.

Findings

Keywords and Abstract Analysis

In our keyword analysis, the high frequency count of the keyword “foreign countries” reflected the international focus of the journal (see Table 1). Keywords indicated that although the journal was founded in Australia, it has successfully expanded its research influence to other countries. Keyword frequency also supported the methodology analysis showing that the interpretative method is most common. Keywords “interview,” “questionnaires,” and “case studies” were all in the top 20 words of the findings and are the primary form of collecting data for interpretative studies. Another top keyword, “student attitudes” is also often reflected in qualitative study results.

The abstract analysis reinforced the journal’s focus on distance education, higher education, and interpretative studies (see Table 2). The most cited words in the abstract analysis, “e-learning” and the similar term “online learning,” are consistent with the keyword emphasis on distance learning and the journal’s special issues topics. Seven special issues have been published with six of those being published in 2010 or later. The emphasis of these special issues has been consistent with the focus of the journal—higher education and learning technology in online environments. Teixeira (2013) argued that with topics such as higher education, which scholars claim is a field of study and not a discipline, journals are critical in setting the standard of knowledge and in disseminating research in order to encourage future academic inquiry.

Shih, Feng, and Tsai (2008) reported a similar focus on e-learning topics among educational technology journals during this period. They analyzed 1,027 articles in five journals from 2001-2005 using research topics and citation counts to determine trends. They found that 444 (43%) of these articles related to e-learning. Their results suggested this e-learning trend would result in an increase in new data methods, such as online messages or learner logs (p. 964). Dempsey and Van Eck (2012) also identified e-learning as a critical area in this field as scholars work towards establishing guidelines for the future. The abstract analysis is consistent with *AJET*’s mission to promote effective practice and policy in e-learning.

The abstract and keyword findings also show a semantic and thematic trend towards the journal’s focus of higher education. While higher education topics are of global interest, the Asia-Pacific area has one of the fastest growing higher education markets as a result of recent increased economic expansion (Shin, 2009). The movement of students to study in other countries is also an emerging trend, especially in the Asia-Pacific countries of *AJET*’s core readership, and this correlates with the keyword focus on foreign countries. (Altbach & Knight, 2007).

Analysis of Article Types and Methodologies

From our analysis of research methods in *AJET* articles, we found that interpretative studies were published most often, representing approximately 32% of articles (see Table 3). Inferential studies appeared almost as frequently, with 29% of articles, followed by theoretical studies with 17% of articles. Over the decade studied, interpretative methods were always among the top three methods published in *AJET*, and after 2007, they became the journal’s dominant method (see Table 4). Another noteworthy trend is that percentages for theoretical (non data-based) articles were high for three years and then dropped. Descriptive percentages have also diminished in the last six years. On the journal’s submission page, the editorial board states that they will not accept descriptive articles without a strong empirical base, which may have contributed to the decreasing number of theoretical and descriptive articles published in recent years (“Editorial Board Policies,” n.d.). This shift away from theory and descriptive methods to interpretative and inferential methods could be the journal’s attempt to follow industry trends to go beyond description to provide deeper analysis. A 2000-2008 study of the five major distance education journals showed a movement towards an increase in qualitative research (Zawacki-Richter, Baeker, & Vogt, 2009). With *AJET*’s focus on e-learning, this progressive increase in interpretative articles coincides with other journals’ similar editorial choices.

Table 1. *Subject Keywords in Articles*

ERIC Subject Keywords	Percentage of articles that contain keyword
Total number of articles	438
Foreign Countries	83%
Educational Technology	59%
Electronic Learning	27%
Teaching Methods	27%
Computer Assisted Instruction	25%
Student Attitudes	24%
Technology Integration	24%
Internet	22%
Instructional Effectiveness	19%
Computer Uses in Education	18%
Interviews	18%
Instructional Design	18%
Computer Mediated Communication	17%
College Students	16%
Questionnaires	16%
Higher Education	15%
Teacher Attitudes	15%
Case Studies	14%
Computer Software	13%
Web Sites	13%

* Figures are rounded to the nearest percent

Table 2. *Key Phrases in Article Abstracts*

Phrase	Times listed
e-Learning	102
Higher Education	83
Case Study	65
Pre Service	57
Online Learning	54
Learning Environment	54

Table 3. *Total Research Methodologies Used by Number and Percentage.*

Descriptive	Inferential/ Quantitative	Interpretative/ Qualitative	Theoretical	Content Analysis	Combined Methods	Total
37 (8%)	136 (29%)	149 (32%)	78 (17%)	15 (3%)	55 (12%)	470

* Figures are rounded to the nearest percent

Table 4. Cited Articles by Method and Year.

Year	Descriptive	Inferential/ Quantitative	Interpretative/ Qualitative	Theoretical	Content Analysis	Combined	Total Articles
2003	4 (17%)	5 (21%)	7 (29%)	7 (29%)	0 (0%)	1 (4%)	24
2004	2 (10%)	5 (24%)	4 (19%)	7 (33%)	1 (5%)	2 (10%)	21
2005	2 (7%)	6 (20%)	9 (30%)	9 (30%)	2 (7%)	2 (7%)	30
2006	6 (21%)	9 (31%)	6 (21%)	2 (7%)	0 (0%)	6 (21%)	29
2007	7 (23%)	6 (20%)	12 (40%)	4 (13%)	1 (3%)	0 (0%)	30
2008	2 (5%)	11 (26%)	18 (43%)	4 (10%)	3 (7%)	4 (10%)	42
2009	3 (7%)	12 (27%)	15 (33%)	7 (16%)	4 (9%)	4 (9%)	45
2010	4 (5%)	18 (23%)	30 (38%)	12 (15%)	3 (4%)	11 (14%)	78
2011	3 (3%)	38 (44%)	26 (30%)	12 (14%)	1 (1%)	6 (7%)	86
2012	4 (5%)	26 (31%)	22 (26%)	14 (16%)	0 (0%)	19 (22%)	85
Total Articles	37 (8%)	136 (29%)	149 (32%)	78 (17%)	15 (3%)	55 (12%)	470

*Figures are rounded to the nearest percent

Journal expansion and editorial changes have also had a significant effect on the article methodologies published. The 2007 merger expanded the scope of the journal, and we saw an increase in published articles in 2008 (40%) and 2009 (50%), the years following the name change and merger. The 2009 change to an international editorial board also resulted in a 73% increase in articles in 2010 and may have affected the journal's shift to accepting more interpretative articles. By choosing a prolific publishing strategy, *AJET* remained true to its editorial goals of seeking to set policy in its field.

Citation Analysis

We analyzed *AJET*'s most cited articles for this decade, reporting the article that was most frequently cited for each year, except during 2012 when there were three articles tied for the top position, having 12 citations each (see Table 5). Four out of the 10 top cited articles discussed theoretical concepts in the field. This finding suggests a strong need for development of theoretical foundations in the field; however, three of these articles were published in the first three years of the decade; at the end of the decade, the four most cited journal articles used interpretative methods, consistent with journal method trends. The most cited article of the decade, authored by Kennedy, Judd, Churchward, Gray, and Krause (2008), used inferential methods. Also noteworthy is the fact that Herrington, Oliver, and Reeves (2003), who authored the second most highly cited article published by the *AJET* during these years also authored the top-cited article of the *Journal of Computing in Higher Education (JCHE)* during this same decade (Langton, Balci, Manwaring, & West, in press; Reeves, Herrington, & Oliver, 2005).

Authorship Analysis

According to data from the *AJET* website, out of the 595 articles received in 2003-2008, only 175 (29%) were published. The journal's editorial board has also set a benchmark of three months maximum time for the review board in order to facilitate faster publication of "highly context-specific research findings" in response to an ever-changing field. (Atkinson & McLoughlin, 2009). This change in the journal's publication strategy is shown by the sharp increase in articles after 2007.

Of the 470 articles published by *AJET* over the entire decade, 84% were authored by a single author, two authors or three authors, with a quarter of the articles being authored by a single individual. Sixteen percent of the journal's articles had more than three authors. Only five papers during the decade had more than six authors, with one listing 12 authors. Collaborative articles increased sharply in 2012 with more

than half the articles having three or more authors. Overall, the journal trend is for more collaborative work, with a drop in percentage of single-authored articles, especially in 2012.

In our authorship analysis (see Tables 6 and 7), 1,132 total authors were listed, with 972 unique names as authors for 470 articles. Of those authors, 780 published only once and 109 published twice. Only 38 authors published three or more times, most in later editions of the journal. Elizabeth Murphy is listed seven times, six of them as first author, but spread over five years. Chin-Chung Tsai published six times, five of them in 2012. More articles were published in 2011 and 2012 than in previous years, leading to an increase of authors with more than one article published in those years.

Table 5. *Most Cited Articles by Year.*

Year	Citations	Authors	Paper
2003	426	Herrington, Oliver, & Reeves	Patterns of engagement in authentic online learning environments
2004	178	Wilson & Stacey	Online interaction impacts on learning: Teaching the teachers to teach online
2005	228	Goodyear	Educational design and networked learning: Patterns, pattern languages and design practice
2006	66	Barnett	Implementation of personal response units in very large lecture classes: Student perceptions
2007	115	Oliver & Goerke	Australian undergraduates' use and ownership of emerging technologies: Implications and opportunities for creating engaging learning experiences for the Net Generation
2008	520	Kennedy, Judd, Churchward, Gray, & Krause	First year students' experiences with technology: Are they really digital natives?
2009	111	McGarr	A review of podcasting in higher education: Its influence on the traditional lecture
2010	103	McLoughlin & Lee	Personalized and self-regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software
2011	32	Shih	Can Web 2.0 technology assist college students in learning English writing? Integrating Facebook and peer assessment with blended learning
2012	12	a. Kinash, Brand, & Mathew b. Irwin, Ball, Desbrow, & Leveritt c. Rambe	a. Challenging mobile learning discourse through research: Student perceptions of Blackboard Mobile Learn and iPads b. Students' perceptions of using Facebook as an interactive learning resource at university c. Critical discourse analysis of collaborative engagement in Facebook postings

*Analysis was conducted in November 2013

Table 6. *Number of Authors per Year.*

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL
Number of articles published	24	21	30	29	30	42	45	78	86	85	470
Number of authors	53	40	80	54	66	92	116	177	210	244	1132

Table 7. Authorship by Year.

Year	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Six Authors	Seven Authors	Eight Authors	Ten Authors	Twelve Authors	Total articles	% more than three authors	% single author
2003	8	9	4	1	1	1					24	29%	33%
2004	9	7	3	2							21	24%	43%
2005	7	10	8	2	1	1			1		30	43%	23%
2006	13	8	7	1							29	28%	45%
2007	4	20	4		2						30	20%	13%
2008	12	16	11	1	1	1					42	33%	29%
2009	13	15	6	8	1		1			1	45	38%	29%
2010	25	28	13	6	3	3					78	32%	32%
2011	19	33	22	5	5	1		1			86	40%	22%
2012	13	26	22	13	7	3		1			85	54%	15%
Total	123	172	100	39	21	10	1	2	1	1	470		
Percent	26%	37%	21%	8%	4%	2%	0.2%	0.4%	0.2%	0.2%			

*Figures are rounded to the nearest percent

AJET states in their editorial of 2009 that part of the aim of the journal is to help mold careers of novice reviewers and researchers by giving them formative feedback (Atkinson & McLoughlin, 2009). This is reflected in the diversity of authors. Most of these authors are only published once by *AJET* during the decade we examined.

Conclusion

The years 2003-2012 included transformation and historic progress for the *Australasian Journal of Educational Technology* in both name and mission. The impact of *AJET* was extended throughout the New Zealand, South Pacific, Southeast Asia, and East Asia areas to promote the publication of "highly context-specific research findings" on a global scale (Atkinson & McLoughlin, 2009). With our analysis of the publications of *AJET*, we have highlighted the paper's influence on the academic community over this period. Our analysis revealed that interpretative, inferential, and theoretical articles made up the majority of the journal's publications during these years and were well represented amongst the top cited articles, although the percentage of theoretical articles published has been dropping. With their expanded reach, the *Australasian Journal of Educational Technology* will continue to be well positioned to establish policy and practice in international education trends.

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