

Citation Structure: An Analysis of the Literature Cited in the *Journal of Leadership Education* from 2002 to 2006

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Abstract

The *Journal of Leadership Education (JOLE)* has been a primary outlet of leadership education publishing and research dissemination since 2002. The purpose of this study was to assess the first five years of literature cited in *JOLE*. The study used a quantitative content analysis design. Analyzed in the study were 45 articles with research methodologies published in *JOLE* from 2002 through 2006. Seven hundred eighty-one cited literature works were identified in the journal. The average number of citations per article was approximately 17. The most frequently cited journal sources were from leadership, management, and psychology. Additional cited works are defined. Citation analysis indicates that *JOLE* relies heavily on books, journals, conference proceedings, and other literacy works outside leadership education. *JOLE* does not exhibit compactness, indicating that it reaches past its citation boundaries and into interrelated areas of other disciplines. However, it does exhibit extremely weak self-identity meaning it does little to build upon research previously cited in *JOLE*. Future research in *JOLE* should strive to cite articles from within its journal and determine what drives citations in leadership education.

Introduction

The *Journal of Leadership Education (JOLE)* was developed in 2002 to meet the needs of leadership publishing and research under the umbrella of agricultural education. As the two words leadership education suggest, it does not have a

singular focus, but sits at the nexus of two disciplines – leadership and education (Gallagher, 2002). *JOLE* provides a medium through which individuals from all disciplines engage in leadership discussions. The overlap between theory and practice fuels leadership education and provides valuable applied content for leadership educators. Gallagher notes *JOLE* fills a niche that other leadership journals do not by addressing the challenges leadership educators face. Consequently, recent research identified *JOLE* as a premier journal in agricultural education (Edgar, Edgar, Briers, & Rutherford, 2008b).

According to Huber (2002), the purpose of leadership education varies as much as the disciplines which contribute to its knowledge base. The contexts in which leaders perform shape the competencies needed to achieve effective leadership; thus, impacting leadership educators as they provide opportunities for the transfer of such knowledge and skills to learners. Leadership educators help people to understand what is a leader and to recognize that various aspects such as passion, authenticity, credibility, and ethics are cornerstones of a foundation to bring about change for the greater good (Huber, 2002). Therefore, diversity of disciplines, concepts and contexts within the area of leadership education is a resource for leadership educators.

In 1994, research indicated the explicit need to analyze citation characteristics in agricultural education (Radhakrishna, Eaton, Conroy, & Jackson). The research further noted “a number of researchers in various scientific disciplines have considered citation structure as a good indicator of the nature of scientific activity” (p. 61). Furthermore, quoting additional experts whom indicated analyses of citation structures “characterize a field of study, define its boundaries, and explain how a discipline is interrelated with other fields of study” (p. 61). Citations can be used as an indicator of scholars’ behavior because it reflects an author’s debt to earlier works. The frequency of cited literature can provide a framework of important references and can be a means by which authors anchor their work and relate it to earlier research (Garfield, 1998). Analyzing cited science literature has been important since the 1950s (Garfield, 1998). In 2006, Funkhouser completed a citation analysis of 27 communication journals published during 1990. This research introduced the Journal Impact Rating System which is a measure for use in comparing journals impact on the basis of citations. This rating system can be used to determine the scope and impact of literature on a field of study and to create leverage when attempting to place a scholarly communication journal into the Social Sciences Citation Index (SSCI). It is crucial for leadership education to examine cited works used in its premier journal in an effort to determine how its previous works are supporting current works, how research is supported by other premier journals in agricultural education, and identify *JOLE*’s self-identity and compactness levels.

Miller, Stewart, and West's (2006) research identified the need to review literature and track citations to maintain a clear sense of previous research. As the discipline progresses forward with research, after the development of a *National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010* (Osborne, n.d.) and with a new agenda currently in progress, it is important to understand where leadership education and development is in its citation structure. Are we primarily citing works created in our field or do we rely on other disciplinary areas as literary staples?

A content analysis of the *Journal of Agricultural Education* indicated that the agricultural education discipline appeared to have a strong self-identity that built on other researchers work within the discipline of agricultural education and compactness by citing from a few "core" journals (Radhakrishna, et al., 1994). However, a 1995 study by Radhakrishna indicated agricultural education should expand their focus to include other areas of research interests for professionals in the field. Since 1994, little to no research in the agricultural education discipline has focused on cited works within the field. However, as noted above analyzing cited science literature has been important since the 1950s (Garfield, 1998). Analyzing literature citations can add to the understanding and identification of the literature base of leadership education and development, especially in *JOLE*. Due to the infancy of *JOLE*, no research has focused on literature citations in the journal. Additionally, a review of literature on leadership education and development journals failed to identify citation analyses. Therefore, determining the level of self-identity and compactness represented in literature cited in *JOLE* is needed.

As leadership education continues to expand in knowledge pursuit, development, and examination, it is important to analyze the dimensions and frequencies of citations in its premier journal, *JOLE* (Edgar et al., 2008b). *JOLE* should also be examined to determine the level and depth of literature citations being made to previous *JOLE* articles, to premier journals identified in the agricultural education discipline, and to other journals that support the field such as leadership, management, and psychology. According to Edgar et al., in addition to *JOLE*, premier journals in agricultural education include: the *Journal of Agricultural Education*, the *Journal of International Agricultural and Extension Education*, the *North American Colleges and Teachers of Agriculture Journal*, the *Journal of Extension*, and the *Journal of Applied Communications*. With the development and embracing of the *NRA* it is important for the leadership education field of study to understand how other established premier journals are being utilized within the field. Citation structure has been used to characterize a field of study and explain how a discipline is interrelated to other fields (Narin, Carpenter, & Berlt, 1972).

Conceptual Framework

The future of agricultural and leadership education depends on many variables and application and acquisition of new knowledge via research is extremely important (Dyer, Haase-Wittler, & Washburn, 2003). The conceptual framework of the study was grounded in work by numerous scholars in agricultural education, leadership, and communications. Several researchers have completed various components of journal analyses in agricultural education: familiarity and quality of journals and importance of faculty publishing (Radhakrishna, 1995; Radhakrishna & Jackson, 1993); research theme areas (Buriak & Shinn, 1993; Dyer et al., 2003; Edgar, Boyd, Briers, & Rutherford, 2008a; Edgar et al., 2008b; Miller et al., 2006; Moore, 1991; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990); prolific authors (Edgar et al., 2008a; Harder & Roberts, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992); statistical methods used (Bowen, Rollins, Baggett, & Miller, 1990; Dyer et al., 2003; Edgar et al., 2008a; Mannenbach, McKenna, & Pfau., 1984), and cited literature (Edgar & Edgar, 2009; Moore, 1991; Radhakrishna et al., 1994; Radhakrishna, 1995; Miller et al., 2006). Conceptually this study focused on cited literature. Citationology, the theory and practice of analyzing citations, allows a discipline to determine reference topology (Garfield, 1998).

Purpose and Objectives

The purpose of this study, which was a part of a larger study, was to review research published in the *Journal of Leadership Education* from 2002 to 2006 and examine the historical record of the journal to provide insight into its cited works. The specific objective was to describe and synthesize frequent literature cited in *JOLE* during the five-year period by: (a) premier journal articles (represented by author(s) and year) (premier journals were identified in previous research by Edgar et al., 2008b); (b) books; (c) journals; (d) proceedings, conferences, and meetings; (e) other works (dissertations, extension and university manuscripts, magazines, newspapers, etc); and, (f) Web pages.

Research Methods and Procedures

This study employed a quantitative content analysis design. Content analysis as a research method has existed for decades (Weber, 1990). Content analysis can be used to give researchers insight into problems or hypotheses that can then be tested by more direct methods. Content analysis is a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; Krippendorff, 1980; Weber, 1990).

Content validity was maintained using previous research as a guide. Research journal articles from 2002 to 2006 in the *Journal of Leadership Education* were

used as the frame for the study. The principal investigator and a peer independently reviewed the material and formed a checklist of information required during the review of each journal article. The researchers compared notes and reconciled differences on their initial checklists via negotiations. Researchers used a consolidated checklist to independently apply coding. The researchers then checked for agreement in coding; if reliability was not acceptable, then the previous steps were repeated. Once reliability had been established, coding was applied on a large-scale basis. The final stage was a periodic quality control check (Weber, 1990). Inter-coder reliability was completed with at least 10% overlap for the reliability test. Final reliability was calculated using a random sample of 5% of the analyzed articles. Reliability was assessed using Spearman's *rho* statistical analysis. Spearman's *rho* is a statistical calculation that takes two rankings and produces a numerical relation from 1 to -1. A score of 1 means that the lists are identical, a -1 means that the lists are reversed, and 0 (zero) score means that there is no relation whatsoever between the two lists. Reliabilities met or exceeded the minimum standard of .70 (Bowen et al., 1990; Tuckman, 1999).

Findings

All articles with research methodologies ($N = 45$) published in *JOLE* from 2002 to 2006 were analyzed for cited literature. A total of 781 cited works were identified. The average number of citations per article was approximately 17. Premier agricultural education journals were tracked for their literature cited in *JOLE*, in terms of author(s) and year of publication. A total of 75 references were made to premier journals in agricultural education. Representing approximately 9.60% of the total cited literature in *JOLE*. There were 31 cited works from previous publications of the *Journal of Agricultural Education (JAE)*. Lindner, Murphy, and Briers (2001) and Seevers and Dormody (1994) were the most frequently referenced *JAE* authors identified in the five-year content analysis of *JOLE*. Their article was cited in more than 9% of the referenced *JAE* articles. Additional frequently referenced *JAE* articles, identified by the author(s) and year of publication, cited 5.6% or more are identified in Table 1.

Table 1
*Frequently Cited Journal of Agricultural Education Authors Referenced in JOLE
2002–2006 (n = 31)*

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	9.7
SeEVERS, B. S. & Dormody, T. J. (1994)	3	9.7
Culp, K., III. (1996)	2	6.5
Dormody, T. J. & SeEVERS, B. S. (1994)	2	6.5
Rutherford, T. A., Townsend, C. D., Briers, G. E., Cummins, R., & Conrad, C. R. (2002)	2	6.5
Thorp, L., Cummins, R., & Townsend, C. (1998)	2	6.5
Wingenbach, G. J. & Kahler, A. A. (1997)	2	6.5

There were 26 citations in *JOLE* to previous research in the *Journal of Extension (JOE)*. Ladewig and Rohs' (2000) *JOE* article was the most frequently referenced. Their article was cited in 11.5% of the referenced *JOE* articles in *JOLE*. Boyd, Herring, and Briers (1992); Patterson (1998); and Rockwell and Kohn (1989) were the second most frequently cited referenced *JOE* authors, the articles were referenced 7.7%. There were seventeen additional references made to *JOE* articles. The articles were cited once in *JOLE*.

In *JOLE* two references were made to the *North American Colleges and Teachers of Agriculture (NACTA) Journal*. The cited articles were referenced once (50%). The authors were Klein (1990) and Rohs and Langone (1998).

From the five-year content analysis of *JOLE*, no references were made to the *Journal of Applied Communications (JAC)* or to the *Journal of International Agricultural and Extension Education (JIAEE)*.

There were 16 references in *JOLE* to previous works in *JOLE*. Hoover and Webster (2004) were the most frequently cited referenced authors. The article was cited in 18.8% of the referenced *JOLE* articles. Graham, Ackermann, and Maxwell (2004); Graham, Sincoff, Baker, and Ackermann (2003); and Huber (2002) were the second most frequently cited *JOLE* authors. These articles were referenced 12.5%. Seven additional references were made to previous *JOLE* articles, each article was cited once.

In *JOLE*, there were 75 citations referencing the six premier agricultural education (AGED) journals as identified by Edgar et al. (2008b). An important component of this research was identifying how *JOLE* was citing other journals within the large umbrella of the agricultural education discipline. The most frequently cited premier AGED journal articles were produced by Hoover and Webster (2004) for their work published in the *JOLE*; Ladewig and Rohs (2000) for work cited from *JOE*; Lindner, Murphy, and Briers (2001) for work cited from *JAE*; and, Seevers and Dormody (1994) for work cited from *JAE*. Of all the referenced work from premier AGED journals, these works were cited 4%. Table 2 contains a list of frequently cited premier AGED journal articles, by author(s) and year, cited 2.7% or more.

Table 2
 Frequently Cited Premier AGED Journal Authors Referenced in JOLE from
 2002–2006 (n = 75)

Journal Author(s) and Year of Publication	Premier Journal	f	P
Hoover, T. S. & Webster, N. (2004)	<i>JOLE</i>	3	4.0
Ladewig, H. & Rohs, F. R. (2000)	<i>JOE</i>	3	4.0
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	3	4.0
SeEVERS, B. S. & Dormody, T. J. (1994)	<i>JAE</i>	3	4.0
Boyd, B. L., Herring, D. R., & Briers, G. E. (1992)	<i>JOE</i>	2	2.7
Culp, K., III. (1996)	<i>JAE</i>	2	2.7
Dormody, T. J. & SeEVERS, B. S. (1994)	<i>JAE</i>	2	2.7
Graham, T. S., Ackermann, J. C., & Maxwell, K. K. (2004)	<i>JOLE</i>	2	2.7
Graham, T. S., Sincoff, M. Z., Baker, B., & Ackermann, J. C. (2003)	<i>JOLE</i>	2	2.7
Huber, N. S. (2002)	<i>JOLE</i>	2	2.7
Patterson, T. J. (1998)	<i>JOE</i>	2	2.7
Rockwell, K. & Kohn, H. (1989)	<i>JOE</i>	2	2.7
Rutherford, T. A., Townsend, C. D., Briers, G. E., Cummins, R., & Conrad, C. R. (2002)	<i>JAE</i>	2	2.7
Thorp, L., Cummins, R., & Townsend, C. (1998)	<i>JAE</i>	2	2.7
Wingenbach, G. J. & Kahler, A. A. (1997)	<i>JAE</i>	2	2.7

The five-year analysis of *JOLE* identified 348 cited books. Books with multiple edition and publication dates are noted in the following table. The most frequently cited book was Bass' (1990) *Bass and Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications*, which was cited in 2.30% of the total book references. Additional frequently cited books identified 1.15% or more, in *JOLE* from 2002-2006, are identified in Table 3.

Table 3

Frequently Cited Books Referenced in JOLE from 2002–2006 (n = 348)

Book	<i>f</i>	<i>P</i>
Bass, B. M. (1990). <i>Bass & Stogdill's Handbook of leadership: Theory, research, & managerial applications</i> (3rd ed.). New York: The Free Press.	8	2.30
Kouzes, J. M., & Posner, B. Z. (2002; 1997; 1995) <i>The leadership challenge: How to get extraordinary things done in organization</i> (3rd ed; 2nd ed.; 1st ed.). San Francisco: Jossey-Bass Publishers.	7	2.01
Burns, J. M. (1978). <i>Leadership</i> . New York: Harper & Row.	5	1.44
Komives, S. R, Lucas, N., & McMahon, T. R. (1998). <i>Exploring Leadership: For college students who want to make a difference</i> . San Francisco: Jossey-Bass Publishers.	4	1.15
Rost, J. C. (1992; 1991, 1990). <i>Leadership in the 21st century</i> . New York: Praeger.	4	1.15
Yukl, G. A. (2001; 1994; 1989). <i>Leadership in organizations</i> . Englewood Cliffs, NJ: Prentice Hall.	4	1.15

JOLE cited 220 additional journals, other than those identified as premier AGED journals. The most frequently cited journals were from leadership, management, and psychology sources. *Journal of Leadership Studies* was the most frequently cited journal of all journal citations in *JOLE*. This journal was referenced 10.9%. A list of frequently cited journals identified 1.81% or more (excluding the premier AGED journals) are identified in Table 4.

Table 4

Frequently Cited Journals Referenced in JOLE from 2002–2006 (n = 220)

Other Journal	<i>f</i>	<i>P</i>
Journal of Leadership Studies	24	10.90
Journal of Applied Psychology	10	4.55
Academy of Management Review	8	3.64
Leadership & Organization Development Journal	8	3.64
Leadership Quarterly	8	3.64
Academy of Management Journal	7	3.18
Journal of Applied Social Psychology	7	3.18
Organizational Dynamics	7	3.18

The Journal of Leadership Studies	7	3.18
Academy of Management Learning & Education	6	2.72
Organizational Behavior and Human Performance	6	2.72

Table 4 (continued)

Other Journal	<i>f</i>	<i>P</i>
Psychological Bulletin	5	2.27
American Psychologist	4	1.81
Harvard Business Review	4	1.81
Academy of Management Executive	4	1.81
Journal of Management	4	1.81
Journal of Management Education	4	1.81

JOLE cited proceedings, conferences, or meetings 18 times. The most frequently referenced proceeding, conference, or meeting was the *Speech Communication Association Conference*. The conference proceeding was referenced 16.7%. In *JOLE*, four proceedings, conferences, or meetings were identified as the second most frequently cited proceedings. The proceedings were the *Annual Meeting of the American Psychological Association*, the *Association of Leadership Educators*, the *International Leadership Association*, and the *National Agricultural Education Research Conference*, each referenced 11.1%. The additional seven referenced proceedings, conferences, or meetings in *JOLE* were cited once.

The five-year analysis of *JOLE* identified other works cited 73 times. The most frequently cited works were university manuscripts referenced 19.2%. Additional other works cited 5.5% or more in *JOLE* from 2002-2006 are identified in Table 5.

Table 5
Frequently Cited Other Works Referenced in JOLE from 2002–2006 (n = 73)

Other Work	<i>f</i>	<i>P</i>
University Manuscript	14	19.2
Unpublished Doctoral Dissertation	12	16.4
Magazines	8	11.0
Online 4-H and FFA Information	8	11.0
Unpublished M.S. Thesis	6	8.2

Annual or Final Reports	4	5.5
ERIC Documents	4	5.5
Personal Communication	4	5.5
Unpublished Manuscripts or Reports	4	5.5

There were 47 references to Web pages. The most frequently cited Web pages in *JOLE* from 2002 to 2006 were to .org sites (21 citations, 44.7%). References to .com sites were the second most frequently cited *JOLE* Web page citations (11 citations, 23.4%). The third most frequently cited Web pages were to .edu sites (10 citations, 21.3%). References to .gov sites were the fourth most frequently cited Web pages in *JOLE* (3 citations, 6.4%). Two references were made to .us sites (2 citations, 4.3%).

Conclusions, Discussion and Implications

“Journal analysis can provide a means of assessing key factors that usually indicate the research and publishing characteristics of a profession” (Radhakrishna et al., 1994, p. 64). This study was an attempt to identify the characteristics of literature cited in the *JOLE*. As stated by Miller et al. (2006), there is a need to track citations and review literature to gain a clear sense of the disciplines research agenda. This study showed an in-depth look into a premier research outlet for agricultural leadership and education in terms of literature cited during a five-year period. Radhakrishna et al. (1994) and Garfield (1998) indicated that by identifying a discipline’s cited literature base a framework could be developed to characterize the field of study, define its boundaries and explain how a discipline is interrelated with other fields of study. This study was an attempt to identify the cited literature base in *JOLE* and determine its self-identity and compactness.

All articles with research methodologies ($N = 45$) published in the *JOLE* from 2002 to 2006 were analyzed for cited literature. A total of 781 cited works were identified. The average number of citations per article was approximately 17. In articles published in *JOLE* from 2002 through 2006, it is evident that the discipline pulls from an expansive pool of research works. This study identified 9.6% of the total literature cited was from works published in identified premier agricultural education journals (Edgar et al., 2008b). However, journals such as *JIAEE*, *NACTA* and *JAC* were extremely under represented or not cited in the literature. Of the 75 literature citations to premier agricultural education journals, *JOLE* represented 21.3% of the total citations. This study concludes that *JOLE* exhibits weak self-identity, meaning it does little to build upon research previously cited in *JOLE*. Further, it does not exhibit compactness, indicating that

it reaches past its citation boundaries and into interrelated areas of other disciplines.

In previous research *JAE* was identified as the premier journal in agricultural education. Within cited literature in *JOLE*, *JOLE* was referenced about half (21.3%) as much as *JAE* (41.3%). *JOE* was also referenced more frequently (34.7%) than *JOLE*. Does this have implications for the leadership education profession? It does imply that *JOLE* authors rely most heavily on *JAE* and *JOE* before *JOLE* for literary works when we are looking specifically are identified premier journals. Although it was previously identified as the second most premiere journal in the agricultural education discipline (Edgar et al., 2008b), *JIAEE* and *JAC* research was not referenced in cited literature in *JOLE*. Because of *JIAEE*'s and *JAC*'s standing, should we as leadership education research authors strive to cite from these sources and publish articles in these venues? Similarly, *NACTA* was minimally cited in articles published in *JOLE*. It is further concluded that research published from these journals are not used with emphasis or, perhaps, thought. When looking at premier AGED journal citations, there were not predominate works identified. This may be due to relatively few faculty members producing research in multiple contextual areas associated with leadership education.

Books citations were dominated by various leadership aspects with all six of the most frequently cited books focusing on leadership. Conversely, there is a tremendous amount of variety in cited books within *JOLE*. This variety is an indication that there are multiple books being cited on a single construct of knowledge. The majority of cited books were from the 1990s or earlier and this may be affecting the literature relevance of leadership education.

Other journals not identified as premier in agricultural education that were referenced in research published in *JOLE* focused heavily on various leadership aspects. The *Journal of Leadership Studies* was referenced in almost 11% of the total journals being cited. Five of the 17 most frequently cited journals focused on leadership. Six of the 17 most frequently cited journals focused on management. Three of the 17 most frequently cited journals focused on psychology. These journal's foci indicate research authors of *JOLE* are using multiple leadership, management, and psychology journals to build on knowledge constructs. Not a surprise to most since leadership education can be seen as a sister discipline to leadership and management.

In contrast, citations referring to conference proceedings or meetings are relatively diverse. With the most frequently cited conference being the *Speech Communication Association Conference* (16.7%). Similarly, university

manuscripts (19.2%) and unpublished doctoral dissertations (16.4%) were the most referenced other works identified in *JOLE*. It is unclear whether the university manuscripts and doctoral dissertations are being published later as research articles. There were 47 citations to Web pages. The discipline relies heavily on citations from non-profit (.org) (44.7%) pages. How these Web pages are being used has not been determined; however, it is encouraging to note that the most frequently referenced sites were utilizing extensions associated with trustworthy information. However, the second most frequently referenced Web pages were from for-profit (.com) (23.4%) pages. This may be affecting the credibility of leadership education research.

Literature citations characterize a field of study. Furthermore, they define a discipline's limits and clarify the interrelatedness with other fields of study (Radhakrishna et al., 1994). *JOLE* exhibits an expansive cited literature (citationology) reach focusing on multiple disciplinary areas and fields of studies. It also exhibits connectedness to some of the identified premier journals in agricultural education. Because of the nature of leadership education, it is often necessary for researchers to expand into multiple research outlets, in an effort to find the best suitable outlet for their diverse works. This necessity to publish in other venues may be helping to eliminate compactness in leadership education research literature (specifically in *JOLE*). It can be assumed, due to the lack of compactness, that leadership education is offering discovery in other fields of study. However, the non-compactness of the citation structure in *JOLE* reveals limited published works from within itself and creates weak self-identity. Expanding the quantity of research articles produced annually in *JOLE*, and encouraging leadership educators to cite from previous articles in *JOLE* could help with this issue.

Recommendations

Based on the findings of this study recommendations include:

- Further research should be completed to better determine how various cited books influence leadership education. It would also be important to determine if cited books are seminal or out-of-date works.
- It may prove valuable to determine if conference proceedings, university manuscripts, and doctoral dissertations progress to permanent literature.
- Additional research should be completed to determine if this (premier) journal is being cited in other fields of study.
- This study should be replicated at a ten year cycle to assess progress the *Journal of Leadership Education's* progress.

- Additional research should focus on determining what drives citations in leadership education. Is it primarily *who* citers know (social structure) or *what* they know (intellectual structure)?

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Author Biographies

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