USING CITATION ANALYSIS TO DEVELOP A STRATEGIC PLAN FOR A CAMPUS-WIDE SCHOLARLY COMMUNICATION INITIATIVE

Scott Lancaster
Transforming Libraries for Graduate Students
Kennesaw State University, March 22, 2018
1. Background Information
2. Early Efforts
3. Citation Analysis Projects
   - Citations in 2015 & 2016 STEM Theses (2017)
   - Citations of ETSU/TAMUC Dissertations & Theses (2017)
Established in 1889
65 miles northeast of Dallas-Fort Worth Metroplex
Enrollment
- 7858 undergraduate
- 4793 graduate
- 12,651 total
Academic Programs

- Four academic colleges, 26 departments,
- 120+ undergraduate degree programs
- 38 master’s degree programs
- 6 doctoral degree programs
Student Breakdown

- Undergraduate: 60%
- Master's: 34%
- Doctoral: 6%
Early Efforts

• December 2013 - Proposal for a Scholarly Communication Initiative
• April 2013 – May 2014 – The Faculty Pub
• June 2014 – Proposal for a Conference Poster Collection
• December 2014 – Scholarship Symposium with CFEI
Citation Analysis

Citation analysis is “the statistical frequency with which particular sources are quoted.”


Questions

1. What are our students citing in their dissertations and theses?
2. Who is citing our students’ dissertations and theses?
3. How can we use this information to improve the scholarship created by our students?

Library Instruction
Collection Development
2013 Dissertations: Overview

<table>
<thead>
<tr>
<th>Doctorates Awarded in 2013</th>
<th>EdD</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Administration</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Higher Education Leadership</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Supervision, Curriculum, and Instruction – Elementary Education</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Educational Psychology</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>English</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

![Pie chart showing distribution of doctorates awarded in 2013]
2013 Dissertations: Online Sources

What percentage of dissertation citations come from online sources that are not library databases?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissertations</td>
<td>100</td>
</tr>
<tr>
<td>Total Citations</td>
<td>9915</td>
</tr>
<tr>
<td>Online Citations</td>
<td>1852</td>
</tr>
<tr>
<td>Percentage</td>
<td>19%</td>
</tr>
</tbody>
</table>
2013 Dissertations: Findings

Missing URLs, shortened URLs, and errors in URLs:

Citing a bookseller website rather than a book:


2013 Dissertations: Findings

Citing an unofficial reprint:


There is no URL, but the citation leads to this URL: http://www.personal.kent.edu/~rmuhamma/Philosophy/RWritings/valuesSceptism.htm. This is a personal webpage with a snippet from a copyrighted work that is available elsewhere.

Incorrectly citing an official reprint:

2013 Dissertations: Findings

WikiS: and other questionable websites:


Inappropriate Authors:


The first citation uses a well known DFW legal firm that focuses on men’s rights in divorce. The second citation uses a counseling firm based in India to define gender stereotypes for a study about working class women in Tennessee.
# 2015 & 2016 STEM Theses

## Citations by Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Number of Theses</th>
<th>Number of Citations</th>
<th>Minimum Number of Citations</th>
<th>Maximum Number of Citations</th>
<th>Mean Number of Citations</th>
<th>Median Number of Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>8</td>
<td>531</td>
<td>18</td>
<td>119</td>
<td>66</td>
<td>52</td>
</tr>
<tr>
<td>Chemistry</td>
<td>11</td>
<td>461</td>
<td>20</td>
<td>82</td>
<td>42</td>
<td>38</td>
</tr>
<tr>
<td>Computer Science</td>
<td>7</td>
<td>158</td>
<td>11</td>
<td>32</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
<td>134</td>
<td>41</td>
<td>48</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Physics</td>
<td>9</td>
<td>329</td>
<td>9</td>
<td>63</td>
<td>37</td>
<td>40</td>
</tr>
</tbody>
</table>

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![Pie chart showing the distribution of thses by discipline](chart.png)
2015 & 2016 STEM Theses

Median Age of Cited Literature

- Overall: 13, 20
- Biology: 11, 13
- Chemistry: 11, 16
- Computer Science: 14, 12
- Mathematics: 18, 31
- Physics: 20, 17
2015 & 2016 STEM Theses

Citations by Resource Type and Discipline

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>Biology</th>
<th>Chemistry</th>
<th>Computer Science</th>
<th>Mathematics</th>
<th>Physics</th>
<th>All Disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journals</td>
<td>479</td>
<td>904</td>
<td>423</td>
<td>647</td>
<td>172</td>
<td>1,259</td>
</tr>
<tr>
<td>Books</td>
<td>13</td>
<td>79</td>
<td>26</td>
<td>117</td>
<td>0</td>
<td>130</td>
</tr>
<tr>
<td>World Wide Web</td>
<td>35</td>
<td>71</td>
<td>5</td>
<td>43</td>
<td>4</td>
<td>93</td>
</tr>
<tr>
<td>Conferences</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>32</td>
<td>4</td>
<td>39</td>
</tr>
<tr>
<td>Preprints</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Dissertations &amp; Theses</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>531</td>
<td>461</td>
<td>158</td>
<td>134</td>
<td>329</td>
<td>1613</td>
</tr>
</tbody>
</table>

Bar Chart: Citations by Resource Type

- Journals: 90, 92, 78, 57, 41
- Books: 6, 7, 13, 28
- World Wide Web: 0.2, 3, 3
- Conferences: 0.2, 3, 1
- Preprints: 0.4, 1
- Dissertations & Theses: 0
- Miscellaneous: 1
2015 & 2016 STEM Theses

Favored Formats by Discipline

- **Biology**
  - Journals: 90%
  - World Wide Web: 7%
  - Books: 2%
  - Dissertations & Theses: 2%

- **Chemistry**
  - Journals: 92%
  - Books: 6%
  - World Wide Web: 27%

- **Computer Science**
  - Journals: 41%
  - World Wide Web: 27%
  --Conferences: 20%

- **Mathematics**
  - Journals: 57%
  - Books: 28%
  - Preprints: 7%

- **Physics**
  - Journals: 78%
  - Books: 13%
  - Preprints: 3%
Process of Getting Data

Step One: Identify target theses.

A list of 2015 and 2016 theses was downloaded from ProQuest, from which the STEM titles were identified. Subject categories were standardized and each thesis was assigned a number.
Step Two: Harvest the citations.

Each thesis was downloaded in PDF format and then converted to a Word document. Line breaks within citations were removed in preparation for copying and pasting into a single Excel file.
As the citations from each thesis were inserted, a unique control number, a thesis number and a citation number were added for each. In the extensive editing phase a column was added for year of publication of the cited work, journal abbreviations were standardized, and multiple lists were made for each format.
Bibliometric Study of the Scholarly Impact of ETSU/TAMUC Dissertations

The ProQuest Dissertations and Theses Database was used to extract the data. The database contains a total of 1,856 records for dissertations and theses from East Texas State University dating from 1965 to 1996, and a total of 1,221 records for dissertations and theses from Texas A&M University-Commerce dating from 1996 to 2017, for a grand total of 3,077 records.
Overview: Process

If a dissertation or thesis found in ProQuest Dissertations and Theses database has been cited by other documents in ProQuest databases, Cited by (N) will appear below the citation.
Overview: Cited Dissertations and Theses

Of the 3,077 ETSU/TAMUC dissertations and theses that appear in the ProQuest Dissertations and Theses Database, 451 (15%) are marked as having been cited by other documents in the ProQuest databases.
Of the 3,077 ETSU/TAMUC found in the ProQuest Dissertations and Theses Database, 451 were found to have been cited within another ProQuest document a total of 1,210 times.

Of the 451 cited dissertations and theses, 62 were found to be from ETSU and 389 were found to be from TAMUC.

ProQuest introduced cited reference searching in 2007 for scholarly journals and in 2008 for dissertations and theses. Thus the majority of citations skew toward more recent years.
## Top Cited Dissertations

Table is updated to reflect additional citations since the June 2017 collection of data.

<table>
<thead>
<tr>
<th>Cited By</th>
<th>Title</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>Servant-leadership and job satisfaction: A correlational study in Texas Education Agency Region X public schools</td>
<td>2004</td>
</tr>
<tr>
<td>23</td>
<td>Black/White Biracial identity development: A grounded theory study</td>
<td>2000</td>
</tr>
<tr>
<td>24</td>
<td>Non-academic behavioral indicators of student impairment in CACREP-accredited Master's-level counseling programs</td>
<td>2000</td>
</tr>
<tr>
<td>18</td>
<td>A meta-analysis of outcomes from the use of calculators in mathematics education</td>
<td>1996</td>
</tr>
<tr>
<td>18</td>
<td>An analysis of the relationship of high school principals’ perceived instructional leadership management behaviors to school size and to student achievement</td>
<td>2006</td>
</tr>
<tr>
<td>16</td>
<td>A comparison of distance learning and traditional learning environments</td>
<td>2001</td>
</tr>
<tr>
<td>15</td>
<td>The performance of home-schooled students in community colleges</td>
<td>1998</td>
</tr>
<tr>
<td>15</td>
<td>Young adults’ attitudes toward marriage and fear of intimacy in relation to gender, religiosity, and conflict in the family of origin</td>
<td>2000</td>
</tr>
<tr>
<td>15</td>
<td>Fundraising programs in community colleges: Factors that contribute to effectiveness</td>
<td>2003</td>
</tr>
<tr>
<td>15</td>
<td>Peer-assisted learning: The effects of cooperative learning and cross-age peer-tutoring on writing skills of students with learning disabilities</td>
<td>1992</td>
</tr>
<tr>
<td>15</td>
<td>The effects of training on ethical decision making skills as a function of moral development and context in master-level counseling students</td>
<td>2004</td>
</tr>
<tr>
<td>14</td>
<td>Predictors of success on the National Council Licensing Examination computerized exam (CAT -NCLEX-RN) in associate degree nursing programs: A logistic regression analysis</td>
<td>2005</td>
</tr>
<tr>
<td>12</td>
<td>Barriers, critical events, and support systems affecting Chicanas in their pursuit of an academic doctorate</td>
<td>1988</td>
</tr>
<tr>
<td>12</td>
<td>Facilitating print awareness and literacy development with familiar children's songs</td>
<td>1994</td>
</tr>
<tr>
<td>12</td>
<td>The impact of early, regular, and late registration on students at three Texas colleges</td>
<td>1996</td>
</tr>
<tr>
<td>12</td>
<td>An application of structural equation modeling techniques in the prediction of statistics anxiety among college students</td>
<td>2001</td>
</tr>
<tr>
<td>11</td>
<td>The relationship between student performance and the leadership behavior of superintendents in Texas public school districts</td>
<td>2002</td>
</tr>
<tr>
<td>11</td>
<td>Perceived barriers to completion of the academic doctorate: A Delphi study</td>
<td>2005</td>
</tr>
<tr>
<td>10</td>
<td>Analyzing the impact of a data analysis process to improve instruction using a collaborative model</td>
<td>2006</td>
</tr>
<tr>
<td>10</td>
<td>The proportionate costs of Title I supplemental educational services: Effect of time in treatment on student achievement</td>
<td>2014</td>
</tr>
</tbody>
</table>
Top Cited Dissertation:

Servant-leadership and job satisfaction: A correlational study in Texas Education Agency Region X public schools
Cited by (62)

62 citations in ProQuest:
• 57 dissertations
• 3 journals
• 2 books

17 citations in ResearchGate:
• 6 dissertations
• 9 journals
• 2 books
Top Cited Dissertation:

Servant-leadership and job satisfaction: A correlational study in Texas Educational Agency Region X public schools.
LD Miears - 2004 - e-library.ru

Results. The internal reliability of the research instrument using the Cronbach’s Alpha was .98 indicating that it is highly probable that differences in responses were due to differences in individual respondents opinions rather than hard to interpret or vague questions. The Pearson correlation statistic revealed that a strong positive correlation, r = .723 (p < .01, two tailed), exists between servant-leadership and job satisfaction, which means that respondents who perceived a ...
Citation Frequency, 1967-2017

Number of Citations


Citation count for each year:
- 1970: 1
- 1975: 0
- 1980: 0
- 1985: 1
- 1990: 7
- 1995: 14
- 2000: 11
- 2005: 49
- 2010: 56
- 2015: 30

The graph shows the number of citations over the years from 1967 to 2017.
### Disciplines of Cited Dissertations/Theses

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Dissertations and Theses Cited</th>
<th>Total Number of Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>332</td>
<td>932</td>
</tr>
<tr>
<td>Counseling</td>
<td>55</td>
<td>174</td>
</tr>
<tr>
<td>Psychology</td>
<td>32</td>
<td>66</td>
</tr>
<tr>
<td>Literature and Languages</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Health, Kinesiology, and Sports Studies</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Biological and Environmental Sciences</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Art</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>History</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sociology and Criminal Justice</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Theater</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>451</strong></td>
<td><strong>1210</strong></td>
</tr>
</tbody>
</table>
Who is Citing ETSU/TAMUC Dissertations and Theses?
Citing Documents by Format

Of the 1,210 documents that were found to have cited ETSU/TAMUC dissertations or theses:

1. 992 (82%) are from dissertations or theses written at other academic institutions
2. 177 (15%) are from academic journals
3. 41 (3%) are from books and other academic monographs.
# Top Citing Universities

<table>
<thead>
<tr>
<th>Count</th>
<th>Citation Title/University</th>
<th>Type</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>Texas A&amp;M University-Commerce</td>
<td>public</td>
<td>Commerce</td>
<td>TX</td>
</tr>
<tr>
<td>69</td>
<td>Capella University</td>
<td>for-profit</td>
<td>Minneapolis</td>
<td>MN</td>
</tr>
<tr>
<td>46</td>
<td>Walden University</td>
<td>for-profit</td>
<td>Minneapolis</td>
<td>MN</td>
</tr>
<tr>
<td>26</td>
<td>University of Phoenix</td>
<td>for-profit</td>
<td>Phoenix</td>
<td>AZ</td>
</tr>
<tr>
<td>21</td>
<td>Northcentral University</td>
<td>for-profit</td>
<td>San Diego</td>
<td>CA</td>
</tr>
<tr>
<td>20</td>
<td>Dallas Baptist University</td>
<td>private</td>
<td>Dallas</td>
<td>TX</td>
</tr>
<tr>
<td>14</td>
<td>Regent University</td>
<td>private</td>
<td>Virginia Beach</td>
<td>VA</td>
</tr>
<tr>
<td>12</td>
<td>Columbia University</td>
<td>private</td>
<td>New York</td>
<td>NY</td>
</tr>
<tr>
<td>12</td>
<td>Texas A&amp;M University-Kingsville</td>
<td>public</td>
<td>Kingsville</td>
<td>TX</td>
</tr>
<tr>
<td>11</td>
<td>Grand Canyon University</td>
<td>for-profit</td>
<td>Phoenix</td>
<td>AZ</td>
</tr>
<tr>
<td>11</td>
<td>George Washington University</td>
<td>private</td>
<td>Washington</td>
<td>DC</td>
</tr>
<tr>
<td>11</td>
<td>Tarleton State University</td>
<td>public</td>
<td>Stephenville</td>
<td>TX</td>
</tr>
<tr>
<td>11</td>
<td>University of Arkansas</td>
<td>public</td>
<td>Fayetteville</td>
<td>AR</td>
</tr>
<tr>
<td>10</td>
<td>Boston University</td>
<td>private</td>
<td>Boston</td>
<td>MA</td>
</tr>
<tr>
<td>10</td>
<td>Liberty University</td>
<td>private</td>
<td>Lynchburg</td>
<td>VA</td>
</tr>
<tr>
<td>10</td>
<td>Old Dominion University</td>
<td>public</td>
<td>Norfolk</td>
<td>VA</td>
</tr>
<tr>
<td>10</td>
<td>Stephen F. Austin State University</td>
<td>public</td>
<td>Nacogdoches</td>
<td>TX</td>
</tr>
</tbody>
</table>
Academic Journals Citing ETSU/TAMUC Dissertations and Theses
1 Citation

Academic Medicine (2009)
Addiction (2009)
Adoption Quarterly (2013)
Advances in Health Sciences Education (2015)
American Journal of Family Therapy (2008)
Annals of Psychotherapy & Integrative Health (2011)
Archives of Guidance & Counseling (2011)
Asia Pacific Education Review (2011)
Bilig (2012)
British Journal of Educational Psychology (2007)
Business Education & Accreditation (2014)
Competition Forum (2009)
Computers in Human Behavior (2015)
Contemporary Family Therapy (2014)
Counseling Outcome Research & Evaluation (2012)
Criminal Justice & Behavior (2005)
Distance Learning (2011)
Education & Training in Autism & Developmental Disabilities (2010)
Educational Psychology (2006)
Educational Psychology Review (2005)
Emotional & Behavioral Difficulties (2009)
Equity & Excellence in Education (2011)
European Journal of Social Psychology (1973)
Exceptional Children (2014)
Familienpsychologie (2012)
Global Journal of Health Science (2013)
Intelligence (2010)
International Journal for Technology in Mathematics Education (2007)
International Journal of Bilingual Education & Bilingualism (2005)
International Journal of Information Dissemination & Technology (2014)
Iranian Journal of Psychiatry (2011)
Irish Journal of Psychology (2013)
Journal of Advanced Academics (2011)
Journal of Career Assessment (2011)
Journal of College Teaching & Learning (2010)
Journal of Counselor Preparation & Supervision (2013)
Journal of Family Therapy (2012)
Journal of Marriage & the Family (2017)
Journal of Mental Health Counseling (2016)
Journal of Negro Education (2014)
L’Encéphale (2006)
Mental Health, Religion & Culture (2012)
Metacognition & Learning (2009)
Military Psychology (2010)
Personality & Individual Differences (2006)
Personnel Psychology (2006)
Psychological Injury & Law (2008)
Psychological Record (2007)
Psychological Reports (2015)
Psychology & Aging (2014)
Psychology & Education (2003)
Psychology in the Schools (2011)
Psychology Teaching Review (2016)
Quality & Quantity (2011)
Quarterly Review of Distance Education (2010)
Race & Social Problems (2014)
Reading & Writing (2012)
Reading Horizons (2015)
Reading Teacher (2003)
Remedial & Special Education (2009)
Scholarship of Teaching & Learning in Psychology (2017)
Small Group Behavior (1979)
Social Science & Medicine (1982)
Sociological Spectrum (2014)
Southeastern Naturalist (2014)
Training & Education in Professional Psychology (2016)
Urban Education (2008)
ETSU/TAMUC dissertations and theses were cited a total of 177 times by 130 academic journals.

Frequency of Citations of ETSU/TAMUC Dissertations and Theses in Academic Journals

- 5 Citations: 1 Journal
- 4 Citations: 2 Journals
- 3 Citations: 7 Journals
- 2 Citations: 23 Journals
- 1 Citation: 97 Journals

- E.B. Robinson (ElEd 1978) cited in 2013
Books Citing
ETSU/TAMUC Dissertations/Theses

Disciplines of the Cited ETSU/TAMUC Dissertations/Theses
Secondary & Higher Education: 3
Psychology & Special Education: 7
Elementary Education: 3
Educational Leadership: 1
Counseling: 15
Educational Administration: 12