Research Life Cycle: Exploring a New Era of eScholarship that Supports Grey Literature

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Fundamentals of the Research Life Cycle

- Every product has a defined life cycle and a limited life
- Sales and marketing require different passages, and both challenges and opportunities are presented to the distributor or seller
- Each life cycle stage demands attention to marketing, financing, manufacturing, purchasing and other strategies to support it successfully

Main Stages of Product Life Cycle

- Market Development – full of unknowns, uncertainties; trying not to prematurely fold
- Growth – responds to consumer demand/interest, develop brand loyalty over other products, establish pricing
- Maturity – responds to competitive intelligence; requires creative marketing, communication with users or customers
- Decline (saturation) – over capacity is usually the result of this stage but it can be a positive outcome with prices and margins reduced diverting the decline with a more creative force.

Lifecycle Management

http://www.gallegoinfo.com/content/pages/lifecycle-management

http://www.pg.com

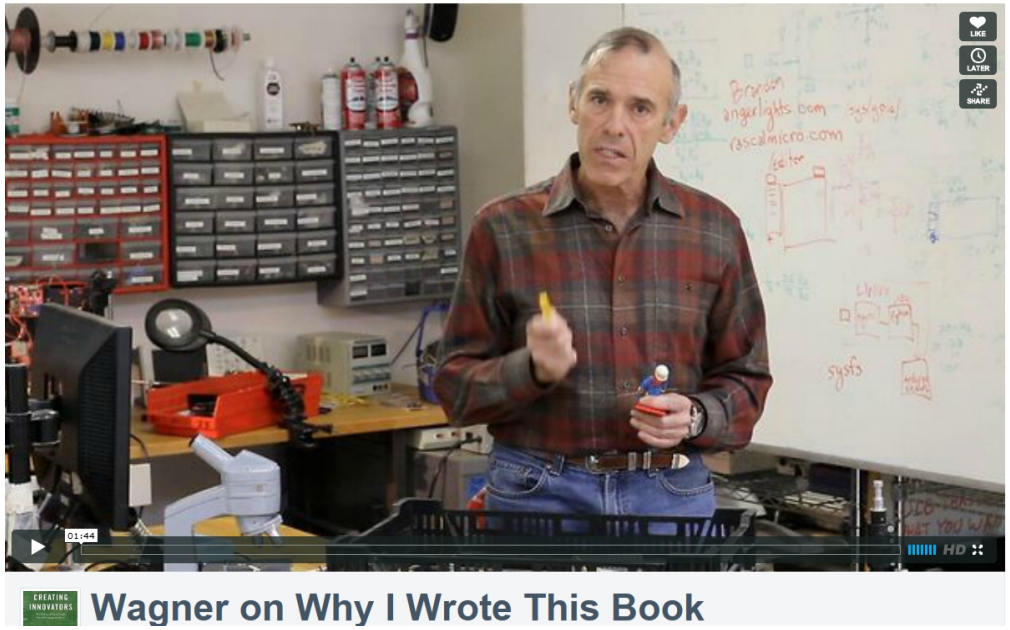

Innovation

Three Types of Innovation

1. Continuous innovation – suggests incremental changes or improvements and is “a common way to satisfy existing customers while grabbing new users.”
2. Dynamically continuous innovation – represents a change in the way we use a product without changing the technology behind the product all that much
3. Discontinuous innovation – requires a significant behavioral change but is not synonymous with disruptive innovation because that causes immediate changes while discontinuous innovation may take significantly longer to influence change.

Creating Innovations by Tony Wagner (2012)

For video trailer:
https://vimeo.com/35403245



Libraries and Innovation

- Demonstrating value
- Rethinking library services
- Reconfiguring library spaces
- Preparing psychologically for the future.

Research libraries in the future…

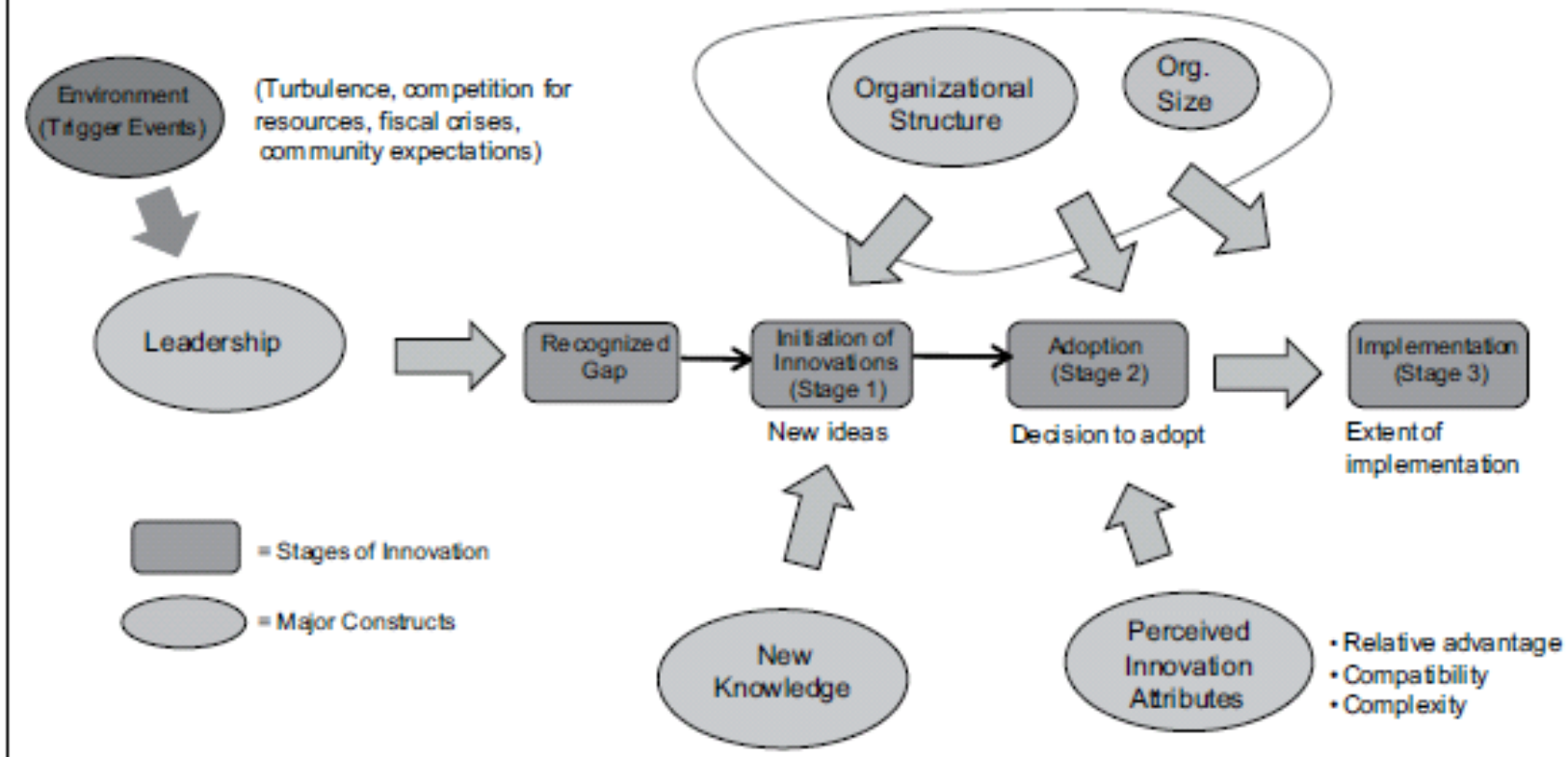
"…are more entrepreneurial organizations, more concerned with innovation, business planning, competition and risk, leveraging assets through new partnerships to create new financial resources."

James Neal, 2011

Innovation Process Model

- Leadership
- New knowledge
- Organizational structure
- Perceived innovation attributes.

FIGURE 1
The Innovation Process Model and Stages of Diffusion



(Adapted from Rogers, Diffusion, 170)

University Library of the future…

"The university library of the future will be sparsely staffed, highly decentralized and have a physical plant consisting of little more than special collections and study areas."

Daniel Greenstein, 2009

Community College Innovation

	Number of Respondents	Percent of Respondents
The development or adoption of new or existing ideas for the purpose of improving policies, programs, practices, or personnel	25	21.3%
The creation of new opportunities that are transformative	25	21.3%
The placing of creative ideas into action	21	17.9%
The application of ideas, with the goal of effecting positive change	20	17.0%
The creation of new programs or practices, or the improvement of old ones	12	10.2%
A creative approach to increasing effectiveness	7	5.9%
Other	5	4.2%
No Response	2	1.7%
Total	**117**	**100%**

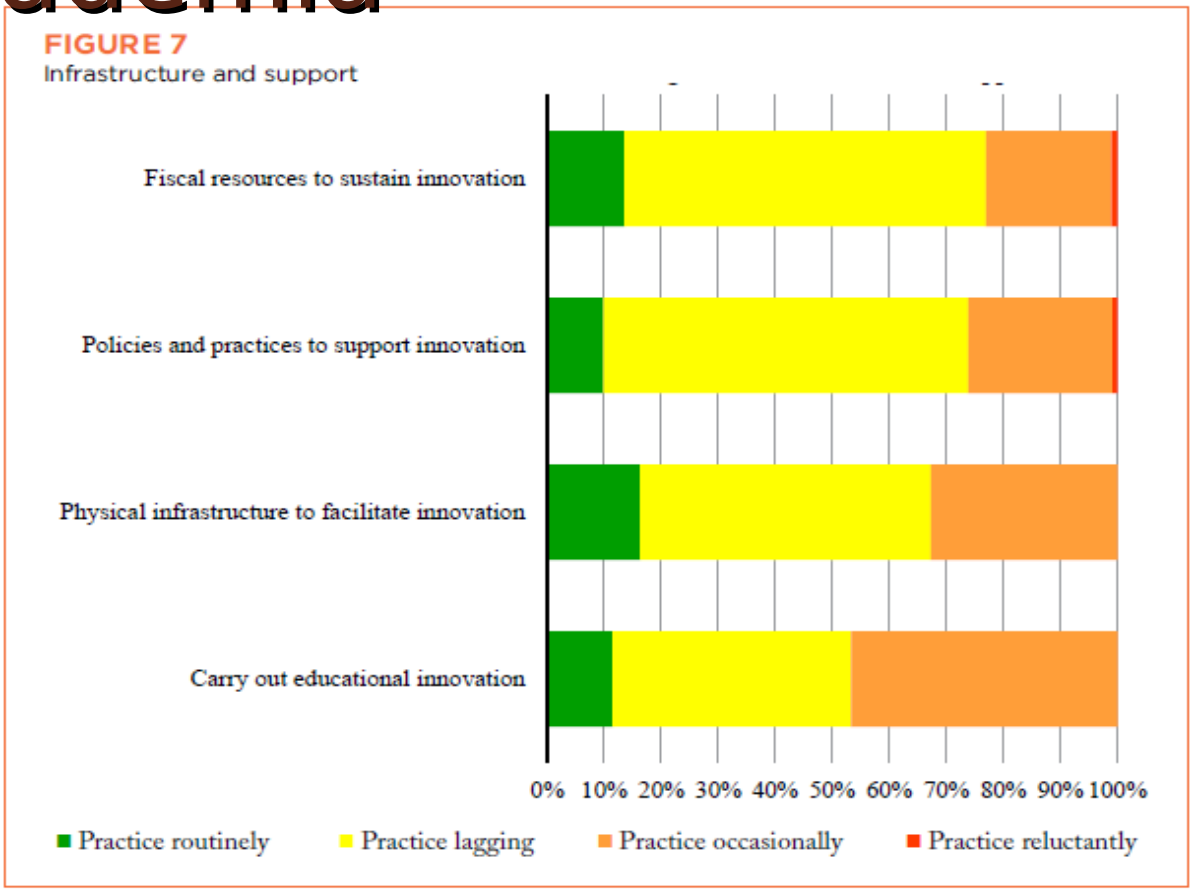
Source: O'Banion, T. & Weidner, L. (2010

RECOMMENDATIONS FOR CREATING A CULTURE FOR SCHOLARLY AND SYSTEMATIC INNOVATION IN ENGINEERING EDUCATION: GOING FROM *INNOVATION* TO *INNOVATION WITH IMPACT*

1. Value and expect career-long professional development programs in teaching, learning, and education innovation for engineering faculty and administrators, beginning with pre-career preparation for future faculty.
2. Expand collaborations and partnerships between engineering programs and (a) other disciplinary programs germane to the education of engineers as well as (b) other parts of the educational system that support the pre-professional, professional, and continuing education of engineers.
3. Continue current efforts to make engineering programs more engaging and relevant, and especially expand efforts to make them more welcoming.
4. Increase, leverage, and diversify resources in support of engineering teaching, learning, and educational innovation.
5. Raise awareness of the proven principles and effective practices of teaching, learning, and educational innovation, and raise awareness of the scholarship of engineering education.
6. Conduct periodic self-assessments within our individual institutions to measure progress in implementing policies, practices, and infrastructure in support of scholarly and systematic innovation—innovation with impact—in engineering education.
7. Conduct periodic engineering community-wide self-assessments to measure progress in implementing policies, practices, and infrastructure in support of scholarly and systematic innovation—innovation with impact—in engineering education.

Source: Innovation with impact (2012)

Support for Innovation in Academia



Source: Innovation with impact (2012)

Successes and Challenges - CC

	Number of Respondents	Percent of Respondents
You and/or your team's enthusiasm and perseverance	83	70.9%
The need for the innovation	54	46.1%
An institutional culture that supports and encourages innovation	51	43.5%
Support of college leaders	45	38.4%
Support from colleagues	32	27.3%
One or more champions within the college	27	23.0%
Student interest	21	17.9%
Financial support	19	16.2%
Support from outside the college	18	15.3%
Documented effectiveness of the innovation	17	14.5%
Other	4	3.4%
Opportunities for award or recognition	2	1.7%
Total	117	100%

	Respondents	Respondents
Lack of time	60	51.2%
Logistical and/or technical issues	35	29.9%
Unanticipated problems	28	23.9%
Lack of financial resources or support	25	21.3%
Magnitude of the project exceeded the anticipated effort and resources	25	21.3%
Other	23	19.6%
Difficulties in bringing the innovation to scale	17	14.5%
Lack of support from others within the college	12	10.2%
Lack of support from college leaders	7	5.9%
Difficulties among the individuals working on the project	6	5.1%
Lack of sufficient evidence of the effectiveness of the innovation	5	4.2%
An institutional culture that does not support and encourage innovation	4	3.4%
Withdrawal of support before the project was completed	3	2.5%
Insufficient research and preparation	1	<1%
Lack of award or recognition	0	0.0%
Total	117	100%

Challenges in a 4 Year University

TABLE 1
Top Five Challenges and Opportunities

Challenges

Faculty	Count	Chairs	Count	Deans	Count
Resources	46	**Resources**	36	**Resources**	19
Rewards	37	**Rewards**	29	**Workload**	17
Workload	36	**Workload**	27	**Rewards**	16
Awareness of Innovations	18	Tech. Research Emphasis	13	Innovation Not Valued	12
Assessment of Innovations	18	Changing the Curriculum	12	Resistance to Change	10
		Awareness of Innovations	12		

Opportunities

Faculty	Count	Chairs	Count	Deans	Count
Faculty Development	16	Faculty Commitment	24	**Rewards**	21
Rewards	15	**Faculty Development**	18	Changing the Curriculum	18
Industry & Entrepreneurship	12	Awareness of Innovations	15	Collaborating with Others	15
STEM Centers	10	Innovative Pedagogy	15	**Faculty Development**	14
Resources	7	**Rewards**	12	Instructional Innovations	14
Changing the Curriculum	7				

Recommendation to Foster Innovations in Community Colleges

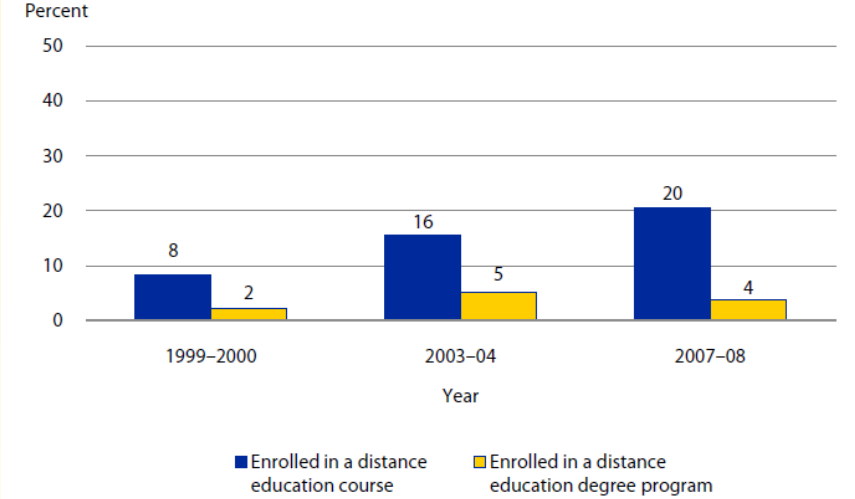
- Demonstrate a need.
- Develop a vision and a plan.
- Put the plan into action.
- Talk with colleagues.
- Build a team.
- Secure administrative support.
- Dedicate the required time and effort.
- Evaluate the innovation's effectiveness.
- Tie the innovation to the college mission, values, and goals.
- Take risks.
- Plan for sustainability of

How do I know innovation was successful? (Community College)

	Number of Respondents	Percent of Respondents
Faculty/staff testimonies or anecdotes	69	58.9%
Student testimonies or anecdotes	61	52.1%
Student surveys	48	41.0%
Faculty surveys	28	23.9%
Student interviews or focus groups	28	23.9%
Institutional data (e.g., course completion rates, student retention rates)	28	23.9%
Faculty interviews or focus groups	27	23.0%
Other	20	17.0%
Formal pre- and post-tests	17	14.5%
Administrator and/or staff surveys	16	13.6%
No formal or informal evaluations have been conducted.	12	10.2%
Use of balanced scorecard or other management tools	6	5.1%
Total	**117**	**100%**

Distance Education - Enrollment

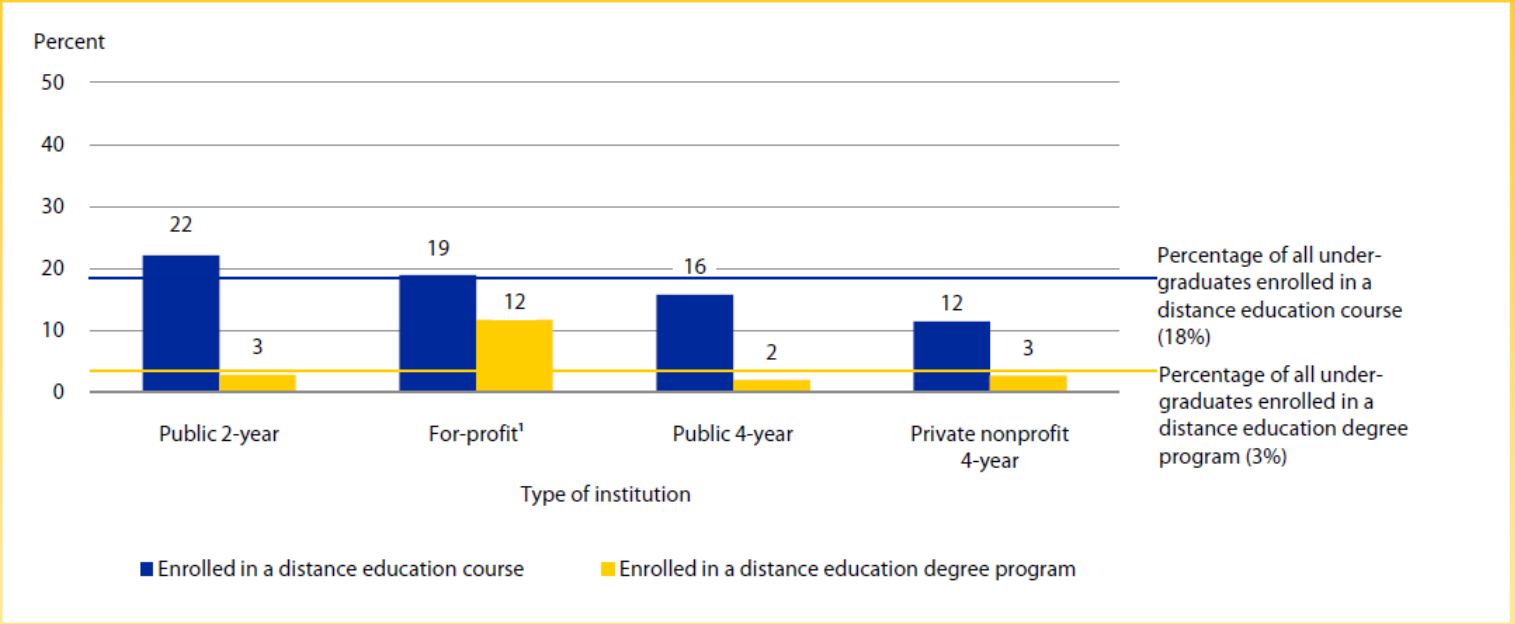
PARTICIPATION
Percentage of undergraduates enrolled in a distance education course or degree program, by year: 1999–2000, 2003–04, and 2007–08



NOTE: In 2007–08 a distance education class was defined as a course taken for credit during the academic year that was not a correspondence course but was primarily delivered using live, interactive audio or videoconferencing, pre-recorded instructional videos, webcasts, CD-ROM or DVD, or computer-based systems delivered over the Internet. A distance education degree program was defined as a program taught entirely through distance education classes. Participation was defined similarly for 1999–2000 and 2003–04 undergraduates. (See complete descriptions of the distance education variables used in the Technical Notes.) Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012154.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000, 2003–04, and 2007–08 National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:04, and NPSAS:08).

Distance Education - Institution

TYPE OF INSTITUTION
Percentage of undergraduates enrolled in a distance education course or degree program, by type of institution: 2007–08



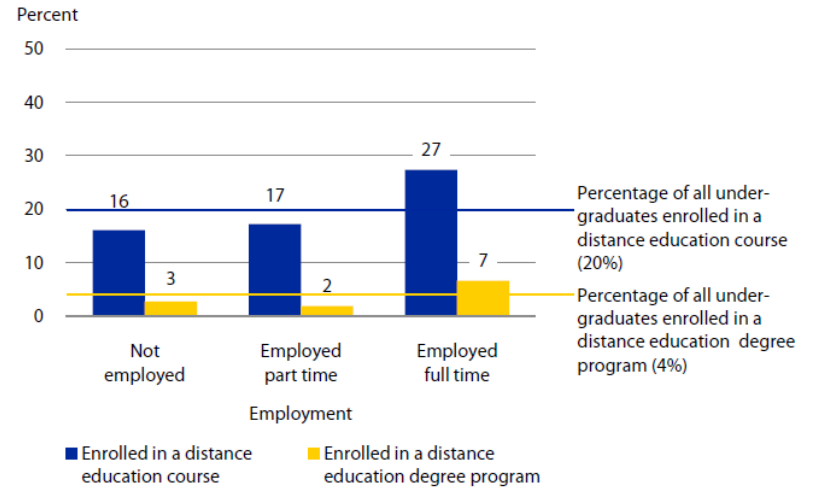
[1] For-profit estimates include less-than-2-year, 2-year, and 4-year for-profit institutions.

NOTE: Results presented in this figure are based on undergraduates who participated in distance education through the institution in which they were sampled (i.e., the National Postsecondary Student Aid Study institution). In 2007–08 a distance education class was defined as a course taken for credit during the academic year that was not a correspondence course but was primarily delivered using live, interactive audio or videoconferencing, pre-recorded instructional videos, webcasts, CD-ROM or DVD, or computer-based systems delivered over the Internet. A distance education degree program was defined as a program taught entirely through distance education classes. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012154.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

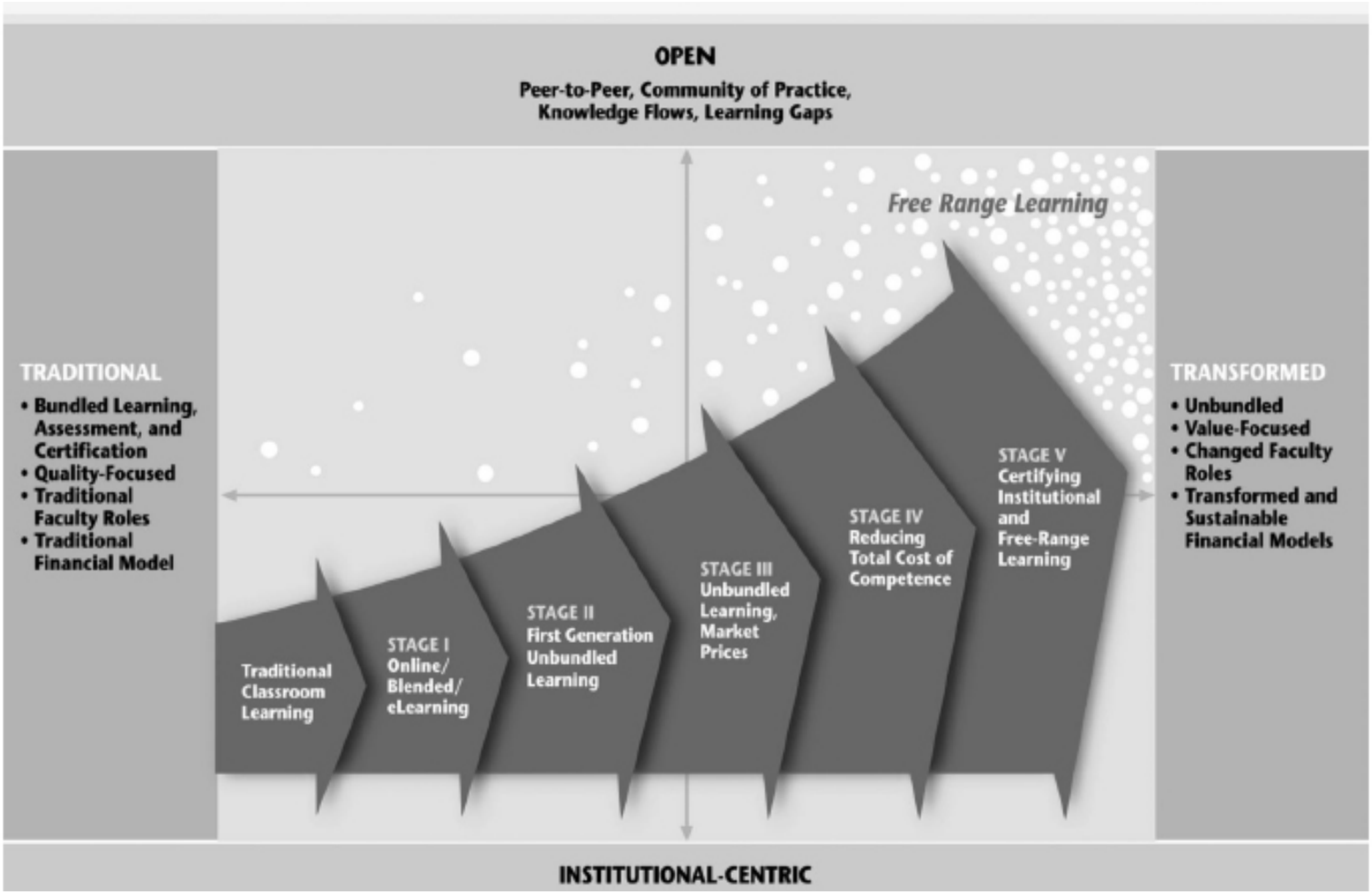
Distance Ed - Employment

WORK OBLIGATIONS
Percentage of undergraduates enrolled in a distance education course or degree program, by work obligations: 2007–08



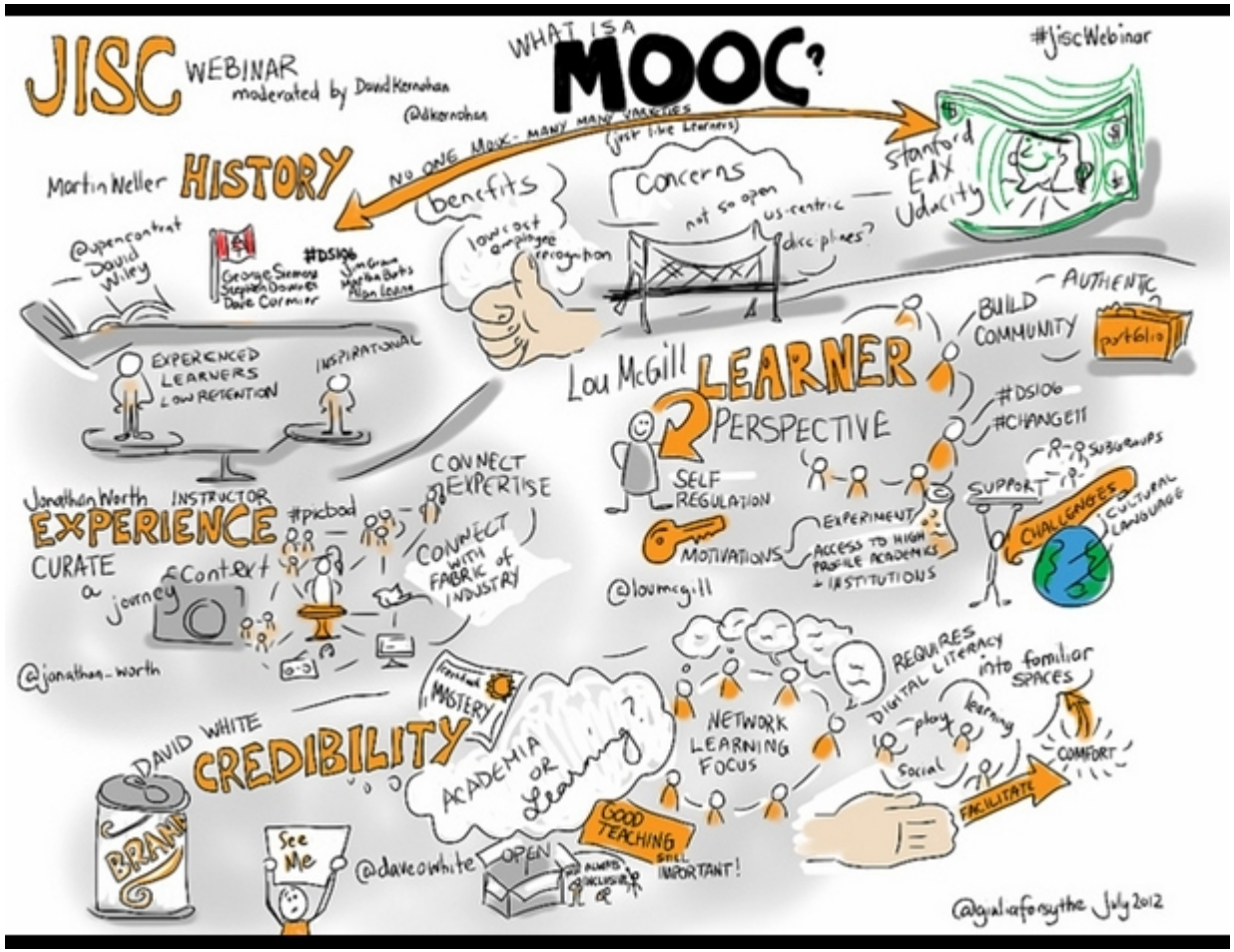
NOTE: Students whose sole employment was through work-study or an assistantship were considered employed. For all employed students, full-time status was defined as working 35 or more hours per week and part-time status was defined as working less than 35 hours per week. In 2007–08 a distance education class was defined as a course taken for credit during the academic year that was not a correspondence course but was primarily delivered using live, interactive audio or videoconferencing, pre-recorded instructional videos, webcasts, CD-ROM or DVD, or computer-based systems delivered over the Internet. A distance education degree program was defined as a program taught entirely through distance education classes. Estimates include students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012154.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Evolution of Distance Education



Source: Norris and Lefrere, 2011

2012: Year of the MOOC



FacultyeCommons.com


MILLENNIALS
A PORTRAIT OF GENERATION NEXT
Confident.
Connected.
Open to Change.

Millennial Effect

- Life cycle effects – becoming more like their parents one they themselves age
- Period effects – affected by major lifetime events, catastrophes and breakthroughs
- Cohort effects – how period events and trends leave specific impressions as youth are still developing core values

Collaborative Communities

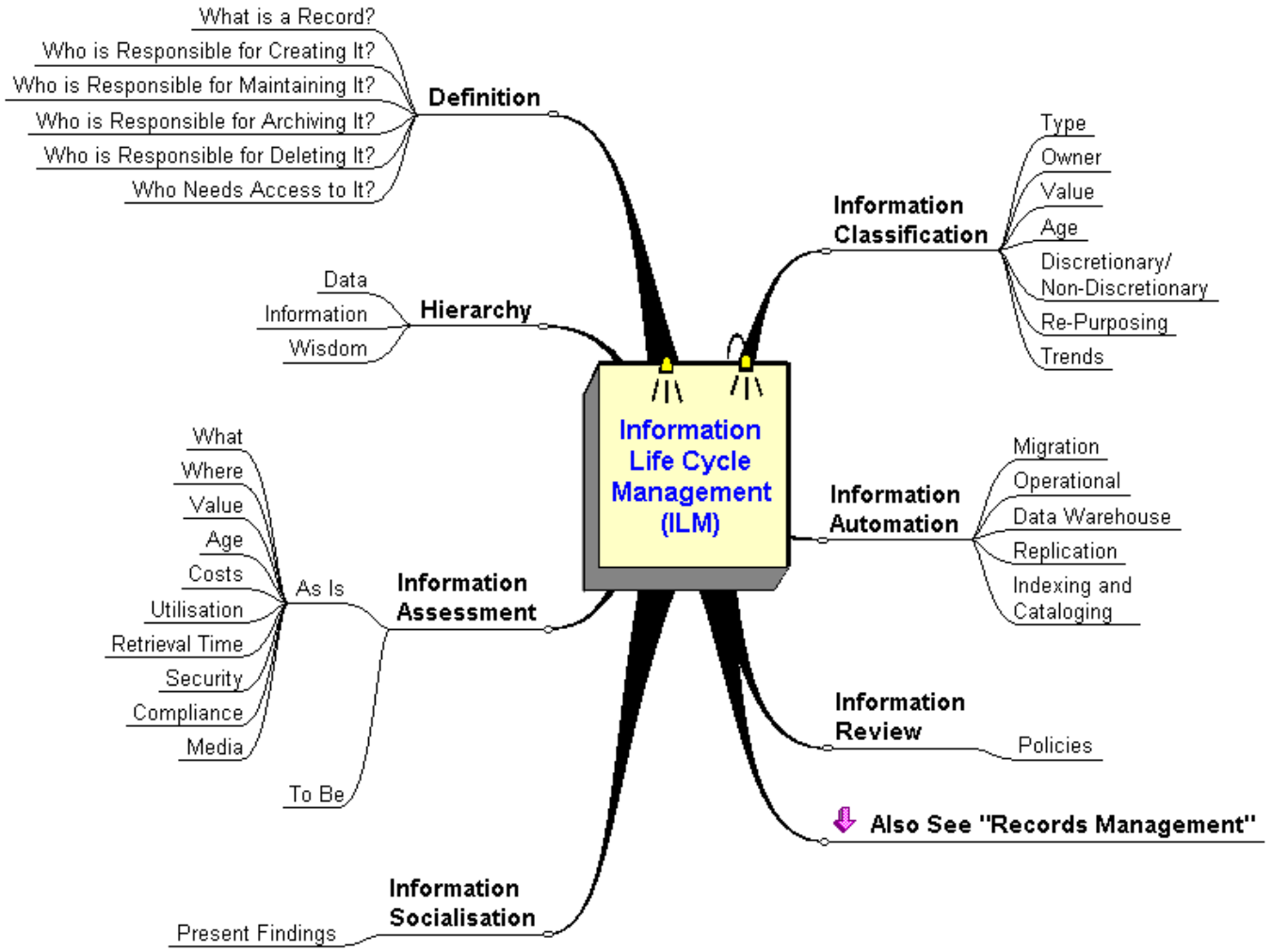
- Understand when community collaboration is appropriate
- Know where community collaboration is more likely to deliver value
- Apply an understanding of your organizations goals and culture
- Craft an organizational vision for community collaboration

Principles of Mass Collaboration

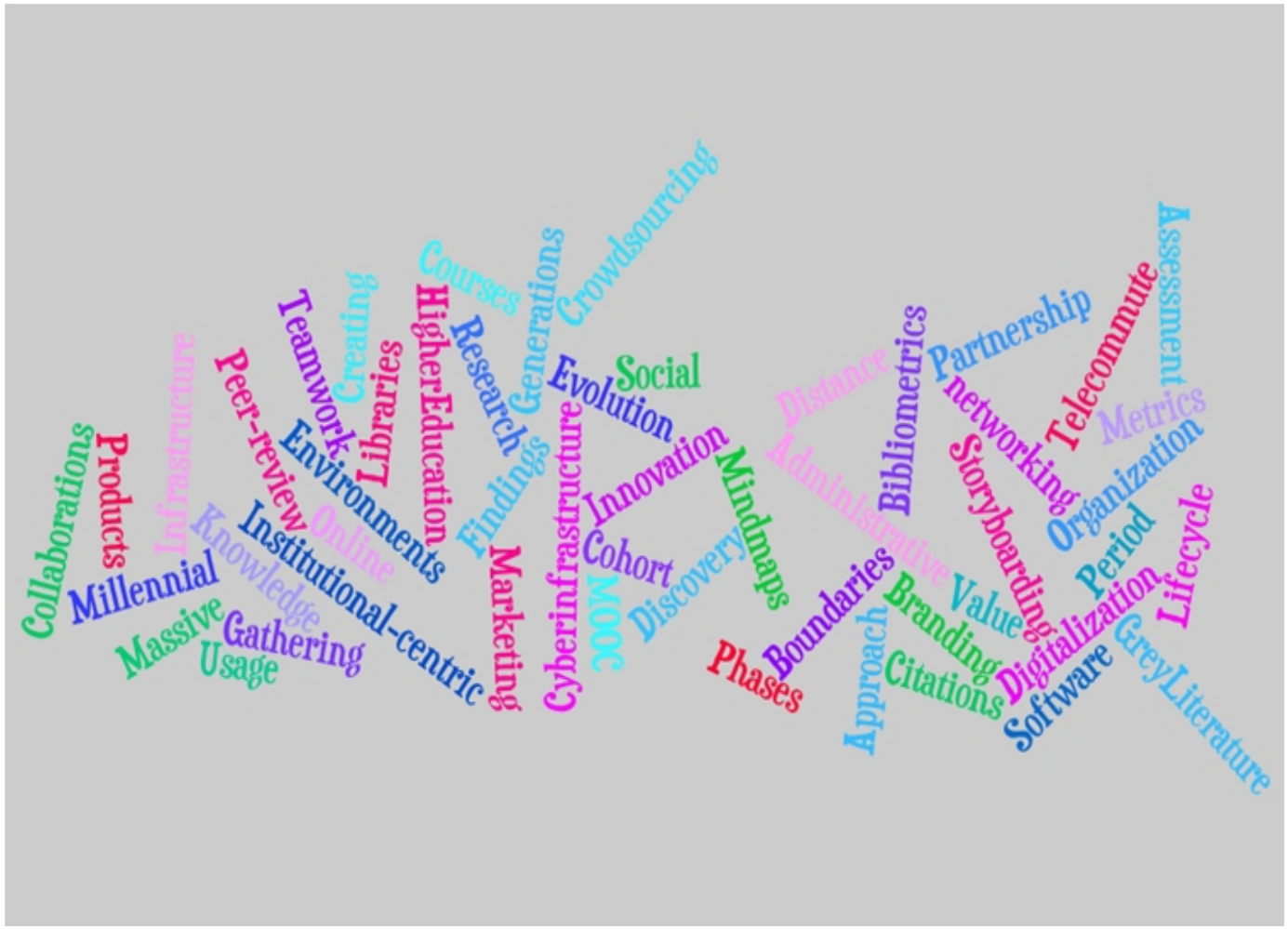
- Participation – encourage contributions from across community and make it safe by discouraging destructive and dysfunctional behaviors and promoting productive ones
- Collective – ensure results by reaching consensus and taking action together
- Transparency – use most accurate and appropriate information; encourage openness and inclusivity
- Independence – encourage and facilitate multiple viewpoints and broader perspectives
- Persistence – keep collaborative content, contributions, feedback and decisions with the social media platform and easily available to community members
- Emergence – concentrate on community results rather than controlling the means of producing those results. Defining terms of engagement may compromise community contributions.

Social media structures

- Crowdsourcing
  - Business based
- Storyboarding
  - Ethnographic / cultural / community centric
- Mind-mapping
  - Relationship focused
- Wordles
  - Spontaneous & random



http://www.pmcomplete.com/InformationLifecycleManagement.asp



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- Metrics, bibliometrics, altmetrics


Impact
usage
downloads
views
peer-review
expert opinion
citations
alt-metrics
storage
links
bookmarks
conversations

Examples of Impacts

- Impact factor
- H-index
- Times cited (different variations but counts times cited in primarily journal articles)
- i10 Index (articles with 10+ citations)
- Highly cited (usually relates to authors)
- Eigenfactor
- Source Normalized Impact per Paper (SNIP)
- FacultyeCommons.com)
- Google Scholar Citations
- Microsoft Academic Search
- Publish or Perish (PoP
- Altmetric for Scopus (tracks mentions of papers across social media sites, blogs and reference managers)
- Academia.edu
- For research groups & communities
- Cross disciplinary measures

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Recommended Methods edit

Some recommended methods for citation analyses are detailed in the pages of this guide:

- Google Scholar Citations Author Profile (Author Impact)
- H-Index (Author Impact)
- Journal Citation Reports Impact Factor (IF) (Journal Impact)
- Eigenfactor (Journal Impact)
- Web of Science Cited Reference Search & Reports (Article Impact)
- Google Scholar Article Citation Search & Alerts (Article Impact)
- Altmetrics (Article Impact)

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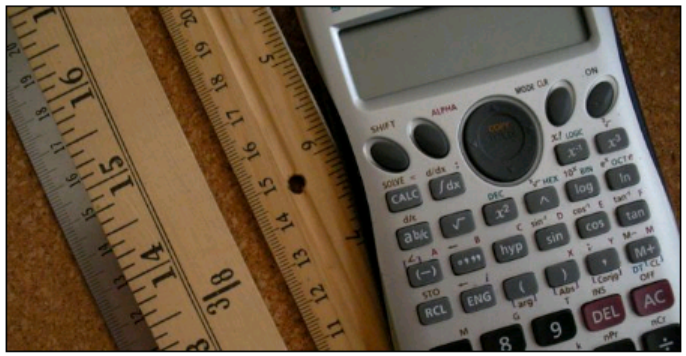
Limitations edit

Limitations of citation metrics:

Research Impact Using Metrics edit



Research impact is a measure of the significance and importance of academic work within a scholarly community.

Bibliometrics are the use of quantitative tools to study publications and other written material.

Citation metrics focus on the statistical patterns and measurements of citations.

Citation analysis can be used as a quantifiable measure of academic output and research impact, which can help inform decisions on publication, promotion, and tenure.

Altmetrics is increasingly becoming an alternative method of measuring the impact of scholarly output.

This guide is designed to help faculty members, graduate students and librarians use and understand the citation analysis tools available to us. At UCI, there is access to some of the major resources used for citation metrics, for example to obtain an Impact Factor (IF) you could consult the following tools -- Web of Science, Journal Citation Reports and Google Scholar. Descriptions of and guides to these tools can be accessed using the above drop-down menu, organized according to need.

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Acknowledgements edit

This Guide was prepared by Laine Thielstrom

Conclusions – all about innovation, research life cycle shifts & value

- Review and establish priorities
- Assess discovery skills systematically
- Identify a compelling innovation challenge that matters
- Practice discovery skills (association, questioning, observing, networking, experimenting, skills)
- Be coached to support development efforts

Grazie!
Thank you for your attention.
Comments / Questions?
Ciao!