Bridging the Evidence Gap: Level Of Knowledge Use Survey - LOKUS as a Validated Instrument

Joseph P. Lane

Center on Knowledge Translation for Technology Transfer

http://sphhp.buffalo.edu/cat/kt4tt.html

School of Public Health & Health Professions

University at Buffalo (SUNY)

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What's this session about?

It's about *[Bridging the Gap]* in evidence about the uptake and use of new knowledge in practice.

- It's about a new tool for collecting evidence of knowledge use from *non-academic* Stakeholders.
- Demonstrating evidence of knowledge use is increasingly important to government sponsored programs (e.g. EU Framework cycles).
- Individuals rapidly assess the relevance of new knowledge to their own lives, and distinguish passive awareness from active uptake.

Sponsors demand evidence of project utility beyond scholarly citations.

- *How does one reach and extract data on knowledge use from non-traditional Stakeholder audiences?*
  - Clinicians & Care Providers;
  - Consumers & Family Members;
  - Manufacturers & Suppliers of devices and services;
  - Information Brokers (e.g., Educators, Employers);
  - Government Policy Makers & Implementers.

Evidence of Knowledge Use?

- Scholarly record of publication and citation is *not* relevant to other Stakeholder groups.
- No existing instruments assess levels of autonomous knowledge use in society.
- Stakeholders are defined differently for any specific knowledge topic area.

Nobrega, A, JP Lane, JL Flagg, MM Lockett, C Oddo, JA Leahy, DJ Usiak (2016)Assessing the Roles of National Organizations in Research-based Knowledge Creation, Engagement and Translation: Comparative Results Across Three Assistive Technology Application Areas, Assistive Technology Outcomes and Benefits, Winter, 9, 1, 54-97.

Background

General Context:

- Knowledge Translation (KT) (CIHR, 2009; Sudsawad, 2007).
- Knowledge (Evidence) → Practice → Impact on beneficiaries

Specific Context:

- Technology-based Research - Sub-optimal level of demonstrated impact from R&D investment by government agencies and programs.

Our Mission & Approach:

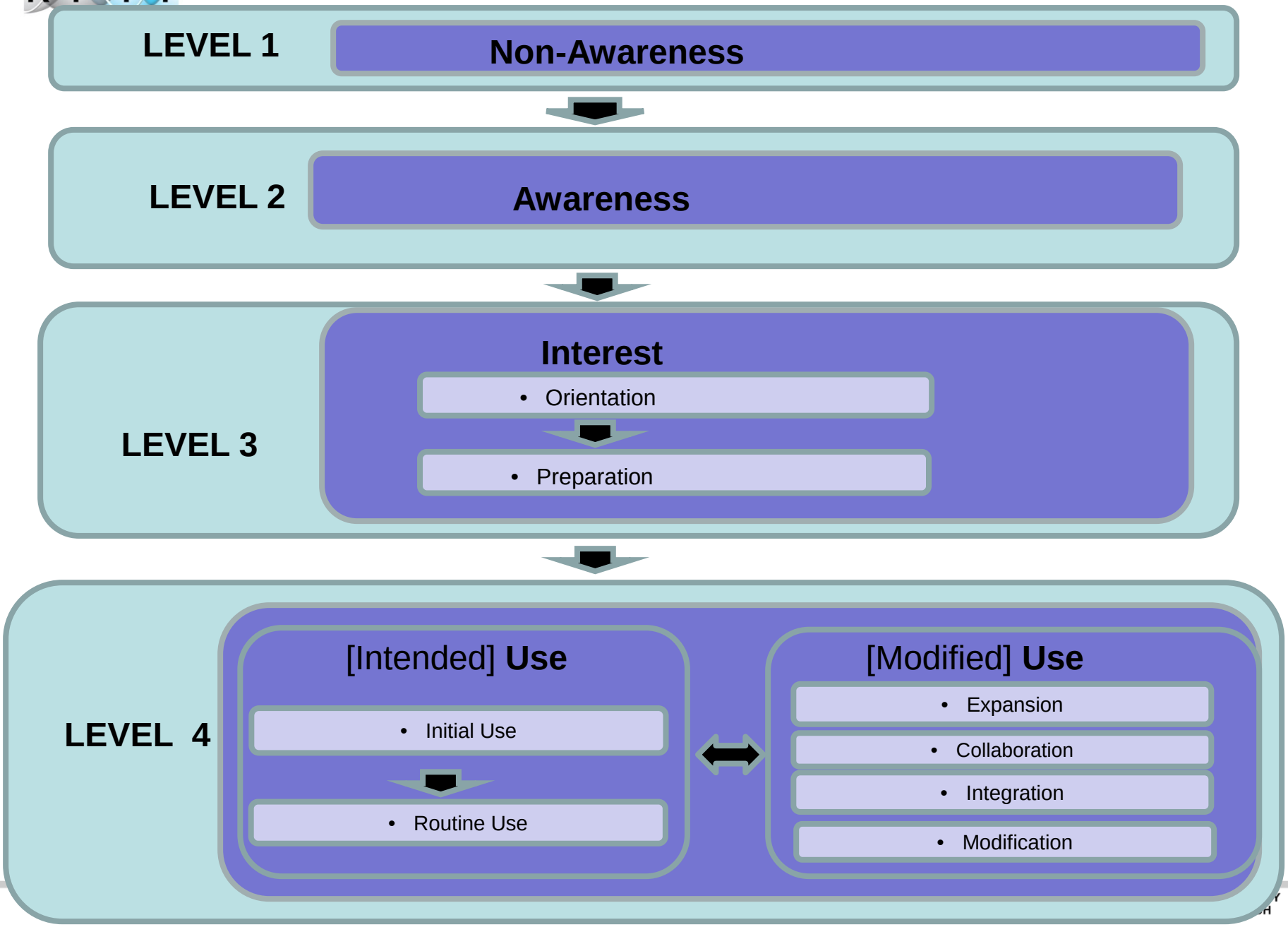
- Funded to create new Models, Methods & Metrics.
- Planned 3 RCT's to compare three Knowledge communication strategies.

Stone, VI, *et al* (2015). Effectively communicating knowledge to AT stakeholders: Three RCT case studies. *Assistive Technology Outcomes & Benefits*, 9, 1.
http://atia.org/i4a/pages/index.cfm?pageID=4646

LOKUS Instrument

- *Problem:* No validated instrument to remotely measure Knowledge Use.
- *Solution: Level of Knowledge Use Survey (LOKUS) to:*
  - identify the level of use (and the corresponding categories)
  - of new knowledge generated by technology-based R&D
  - attained by non-traditional stakeholders.
- *Psychometric study completed.*
  - Reliability:
    - ✓ Test-Retest - Excellent for both levels and categories.
    - ✓ Alternate Assessment method - Web vs. Paper yielded equivalent results.
  - Responsiveness to change:
    - ✓ Ability to detect changes in knowledge use over time – Registered change and non-change.
  - Examination of Developmental nature of levels and categories:
    - ✓ Verified for lower levels of use where changed occurred but not yet for higher levels.

LOKUS Use Levels



LOKUS Utility

- ✓ LOKUS is a valid and reliable instrument to remotely track level and change in level of knowledge use across various stakeholder groups.
- ✓ LOKUS showed strong response to change in level of knowledge use between baseline, test and re-test ($0.001 < p < 0.002$; $n = 215$).
- ✓ LOKUS can be customized to present queries on any topic material and can be tailored to the terms used by any Stakeholder group.
- ✓ Paper version or web-based version supported by *Vovici* software.
- ✓ National organizations can help identify and contact Stakeholder group members, and they are interested in partnering with scholars.
- ✓ Verifying ability to track movement to Level 4 may require studies based on new knowledge with higher assimilation potential (e.g., CPR training).

Stone, V.I., Nobrega, A.R., Lane, J.P., Tomita, M.R., Usiak, D.J., Lockett, M.M., Development of a measure of knowledge use by stakeholders in rehabilitation technology, Sage Open Medicine, 2014, 2, 1-19.

LOKUS Materials

- LOKUS is fully documented in SAGE Open Medicine article:

  Stone, V.I., Nobrega, A.R., Lane, J.P., Tomita, M.R., Usiak, D.J., Lockett, M.M., Development of a measure of knowledge use by stakeholders in rehabilitation technology, Sage Open Medicine, 2014, 2, 1-19.

- LOKUS(blank form) is freely available in pdf and web-based versions:

  LOKUS Instrument (pdf)http://kt4tt.buffalo.edu/publications/ResourceMaterials/The_LOKUS-PDFrevly.pdf

  LOKUS Instrument (Vovici on-line version) https://vovici.com/wsb.dll/s/8727g54d92

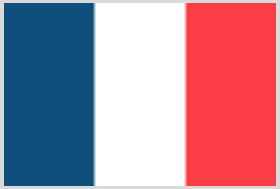
- All LOKUS project materials and LOKUS instrument are freely available for download and use.

  http://sphhp.buffalo.edu/cat/kt4tt/projects/past-projects/kt4tt-2008-2013/research-projects.html






- Issues in Science, Technology & Innovation Policies.
- Three States of Knowledge – Origins, Relationships & Transitions.
- Comprehensive Model of Technological Innovation.
- Tools for Effective Knowledge Translation.
- Tools for Successful Technology Transfer.
- Tools for Achieving Invention Commercialization.
- Market Research Resources.



Knowledge Translation
KT4TT
Technology Transfer

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