Lifting information literacy in Ergonomics

Dr. Göran Hamrin. Logician Lecturer Librarian
KTH Library Director of studies, KTH ECE
Project

- Practitioner-Researcher Project 2016/2017 @KTH School of Education and Communication in the Engineering Sciences
- Project time: 20 % for six months. (=> a small and narrow project topic necessary)
Proverb

“Salame a fette spesse”
Results

Master theses presented at KTH Ergonomics show:

1) An increased use of sources for strengthening statements made in theses, in particular compared to citations used for (only) presenting facts

2) Small signs of an increased use of critical evaluation when citing sources

Additionally, the KTH-theses tend to show an improved academic standard compared to the master theses in Ergonomics presented earlier at Linköping university (LiU).
Examples

C2 fact: ”X holds [ref].”

C1 strengthening a statement: ”X holds, since Y holds according to [ref] and Y implies X.”

C7 critical evaluation, contrasting or conflicting opinion:

“X may hold since [ref] indicates that, but there is not entirely clear if [ref] is applicable also in our case.”

“X holds according to [ref1], but there is also support for not-X, for example in [ref 2].”
Definition

**Integrated (Embedded) instruction** is teaching and learning activities that are situated within the students’ individual subject field, project course, educational program or equivalent. (Hamrin, 2015)
What is the effect of the increase in *integrated (embedded) information literacy instruction* (Hamrin, 2015) supplied by the KTH Library?
Salve

- Investigate the information literacy shown by students
- Convenient to study KTH degree project works (i.e. student theses)
- Need to identify a subset of theses that is both:
  1. Of convenient size
  2. Written by KTH students that have had a significant teaching intervention by the KTH Library
- I have been working with a 15 credit project course in the Ergonomics master program 2009-now
Salve

- Investigate the information literacy shown by students
- Convenient to study KTH degree project works (i.e. student theses)
- Need to identify a subset of theses that is both:
  1. Of convenient size
  2. Written by KTH students that have had a significant teaching intervention by the KTH Library
- I have been working with a 15 credit project course in the Ergonomics master program 2009-now
- **Hence**: A case study of all master theses in Ergonomics presented at KTH 2010-2016
Background

• (1 year) Master program in Ergonomics moved from Linköping to KTH in 2009
• Major curriculum change: Degree project work only 15 credits. Hence: Introduction of 15 credit project course during first semester
• KTH Library involvement in the master program has increased during the years 2009-2015
• Continuous development of learning activities, a collaboration of Ergonomics and Library faculty.
• In particular, the KTH Library acts as a full member of the teaching faculty in the project course (”Two households”)

Pedagogics

Selection of instructional improvements and pedagogical developments in the project course:

• 2009-2012: Increase in hours of library instruction
• 2012- : KTH Library staff functions as examiner
• 2013: Use of a MOOC-style module ("KTHLibraryX")
• 2014: Implemented the "flipped classroom"
• 2015: New course leader appointed, which introduced new seminar themes (on project work, grading criteria and current research at KTH Ergonomics)

(2016 results: Best student approval ratings ever.)
Design

- An *interpretative content analysis* (Hamrin and Hedell, 2013) on the qualitative nature of citations in the KTH Ergonomics master theses
- Categories used in the analysis inherited from B Gunnar Malm (Malm, 2015) analysis of KTH student theses
- Additional data obtained via:
  1. interviews with KTH Ergonomics faculty
  2. results from earlier survey of Swedish technical university library teaching practices (Hamrin, 2016)
  3. comparison with LiU Ergonomics master theses
Population

- KTH DiVA (=local publication database) search: http://bit.ly/2oQy3hQ
- Manual filtering resulted in 27 theses from KTH.
- General DiVA search for (metadata of) theses from Linköping university (LiU). No success!
- Multiple contacts with LiU (Archive, Registrar, and faculty members) to try to retrieve older Ergonomics theses - 2009. No success!
- (Later: Serendipity retrieval of a pseudo-random subset of LiU Ergonomics master theses.)
Data

- Collected in Excel sheet
- 15 Categories to start with, inherited from (Malm, 2015)
- Dynamic categorization process
- Categorization of KTH theses (copies in DiVA) done in February-March 2017
- Theses (printed copies) from LiU retrieved and categorized during two visits to the Ergonomics department library at KTH STH Flemingsberg
Weaknesses
Weaknesses

• Program and student body diverging from KTH norms
Weaknesses

- Program and student body diverging from KTH norms
- Content analysis performed by one person
Weaknesses

- Program and student body diverging from KTH norms
- Content analysis performed by one person
- Questionable start set of categories
Weaknesses

- Program and student body diverging from KTH norms
- Content analysis performed by one person
- Questionable start set of categories
- Limited time span for analysis
Weaknesses

• Program and student body diverging from KTH norms
• Content analysis performed by one person
• Questionable start set of categories
• Limited time span for analysis
• Fuzzy category boundaries
Weaknesses

- Program and student body diverging from KTH norms
- Content analysis performed by one person
- Questionable start set of categories
- Limited time span for analysis
- Fuzzy category boundaries
- Lack of control group
Weaknesses

• Program and student body diverging from KTH norms
• Content analysis performed by one person
• Questionable start set of categories
• Limited time span for analysis
• Fuzzy category boundaries
• Lack of control group
• Small data set
Demo
Future

• Use automated processes (neural networks or similar) with language analyzing tools (indexers, etc) to study a larger set of theses
• Cluster analysis without start categories
• Investigate possible correlation: citation practices with performance grades (from Ladok -- database over Swedish student grades)
• Study candidate theses at KTH

[Library and information science – a definition of positions. Swedish dissertations and master theses in an interpretative content analysis]. Master thesis 2012:7 in Library and information science presented at University college of Borås

References

(Malm, 2015). B. G. Malm: ”Fact or Fiction? – Citation Categories and their Use Cases in Thesis Bibliographies at KTH”. Unpublished paper

(Hamrin, 2016). G. Hamrin: “Comparison of the information literacy teaching at KTH with three other technical universities”. Unpublished paper
Thanks!