

Developing a Blended Learning Approach to Foster Information Literacy in German Psychology Education

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Overview

- Conceptual background
- Outline of the project BLInk (“Blended Learning of Information Literacy”)
- Pilot study: Information literacy in German psychology students
- Conclusions

Conceptual background: Information literacy

Definition: “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” (ACRL, 1989)

- Set of individual skills regarded as key competencies within the modern “information society” to
 - enhance higher education,
 - improve workplace effectiveness,
 - ensure the quality of scientific work

Information literacy: Differences between novices and experts

Inefficient strategies of information seeking among (future) scientists with little expertise (“novices”) compared to “experts”:

- limited knowledge of relevant information systems / databases (e.g., Chu & Law, 2008);
- use of narrower, simpler, and less complex repertoire of search strategies (Sihvonen & Vakkari, 2004);
- no appropriate use of thesauri (Sihvonen & Vakkari, 2004);
- less persistent with searches (e.g., Hoelscher & Strube, 2000)

Basic principles of the project BLink

(Funded by the Leibniz-Association, Germany, 2012-2015)

- (1) Domain specificity:** program for students of psychology and related disciplines
- (2) Multimodality:** “blended learning” approach to combine advantages of E-learning and classroom interaction
- (3) Personal involvement:** participants will work on information problems relevant to their ongoing work
- (4) Adaptation to participants’ levels of competencies:**
 - information literacy
 - domain knowledge (Hoelscher & Strube, 2000)

Pilot study – aims and hypotheses

Aims:

(1) construction and psychometric testing of measures of

- information literacy
- domain knowledge (psychology)

(2) description of information search behavior of students (use of scientific databases vs. web search engines)

Hypotheses:

- increase of information literacy as well as psychological knowledge during studies → differences between freshmen and groups of advanced students on all measures

Pilot study

Sample: $N = 64$ German psychology students

- Group 1: first-year students ($n = 22$, $M = 21.77$ years),
- Group 2: advanced students ($n = 21$, $M = 23.90$ years),
- Group 3: PhD students ($n = 21$, $M = 28.48$ years)

Measures:

(a) pilot versions of two paper & pencil tests

- information literacy test
- test of psychological knowledge

(b) information search tasks

Information Literacy Test

First version: $k = 35$ items (multiple-choice with three options) related to Standards 2 and 3 of the ACRL (2000), e.g.:

Which statement is true?

The Journal Impact Factor (JIF) indicates...

- ... how often articles published in this journal have been cited by other authors during a certain period of time*
- ... how many libraries have subscribed to the journal*
- ... the relevance ascribed to this journal by a group of experts*

[related to Standard 3: Evaluating information]

Final version: 2 subscales ($k = 22$):

- “Searching for information” ($k = 14$, Cronbach's alpha = .73)
- “Evaluating information” ($k = 8$, Cronbach's alpha = .73)

Test of Psychological Knowledge

First version: $k = 25$ items (multiple-choice, sentence completion, open-ended format) → knowledge of “psychological core concepts” (e.g., Proctor & Williams, 2006), e.g.

“Please name the three most important quality criteria of psychological tests according to Classical Test Theory.”

Final version: Cronbach’s alpha = .86 ($k = 21$)

Information Search Tasks

Procedure: students do searches at a PC with access to the WWW, including the university library's website and psychological databases (PSYINDEX^{plus}, PsycINFO etc.), and copy their results into an MS Word document

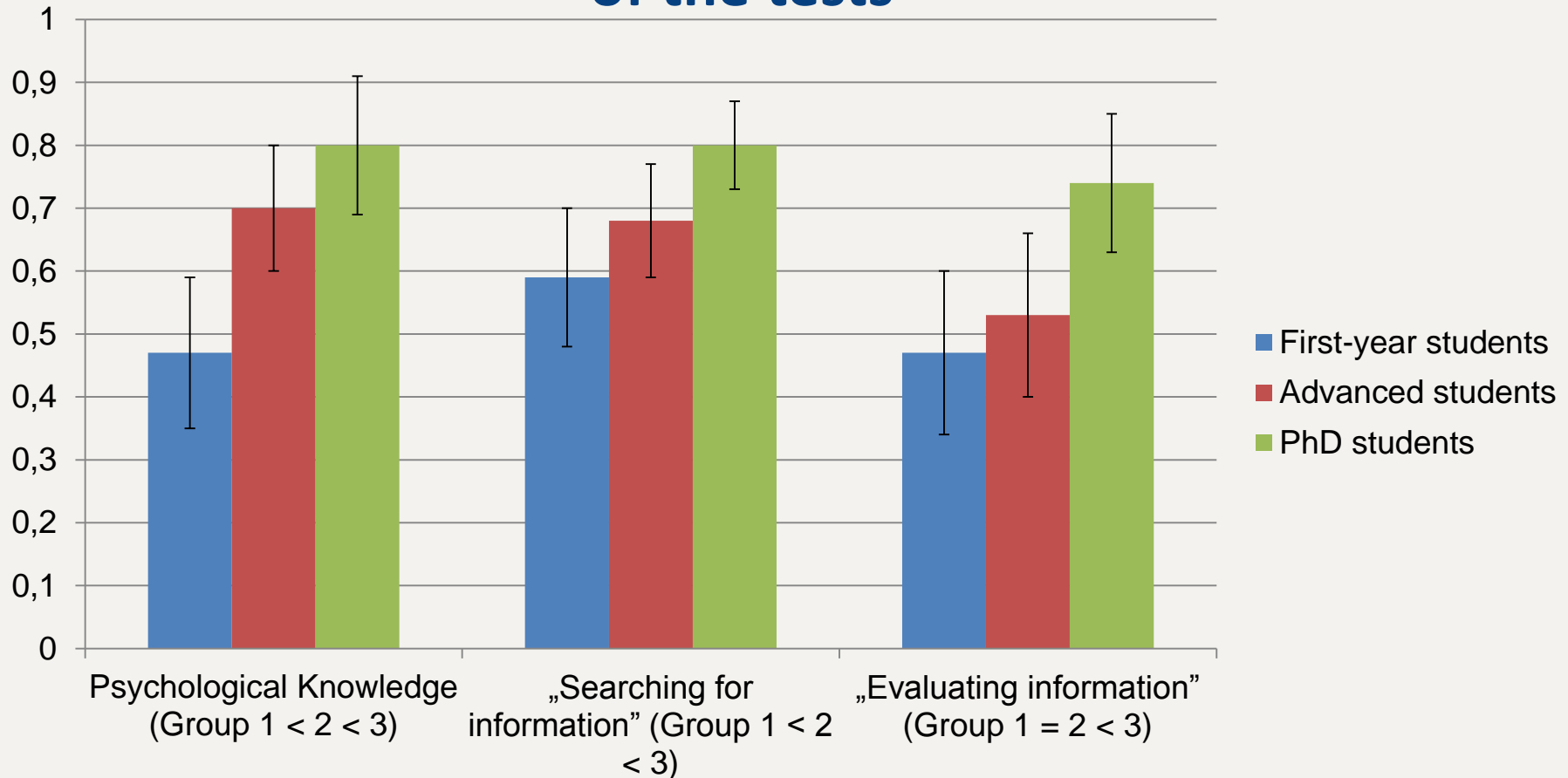
Tasks: $k = 3$ scientific information search tasks, framed as part of the preparation of a scientific presentation about assessment centers, e.g.

“Find three meta-analyses on the predictive validity of assessment centers.”

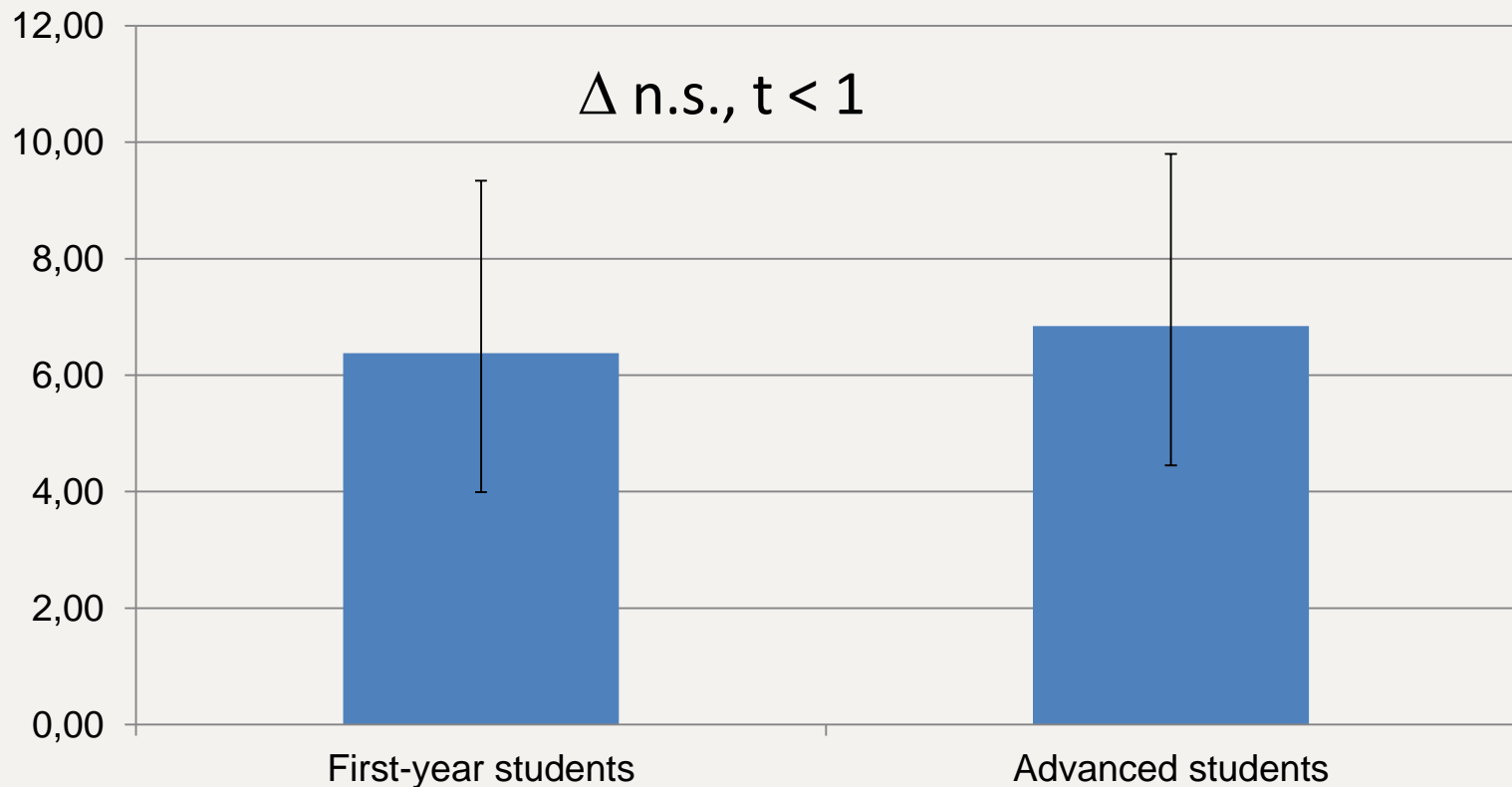
Dependent variables:

- quality of search results → scored by experts (0-15 points)
- type of information sources used (web search engines: Google, Google Scholar vs. scientific databases: PSYINDEX, PsycINFO) → log files

Results 1: Group means and standard deviations of the tests



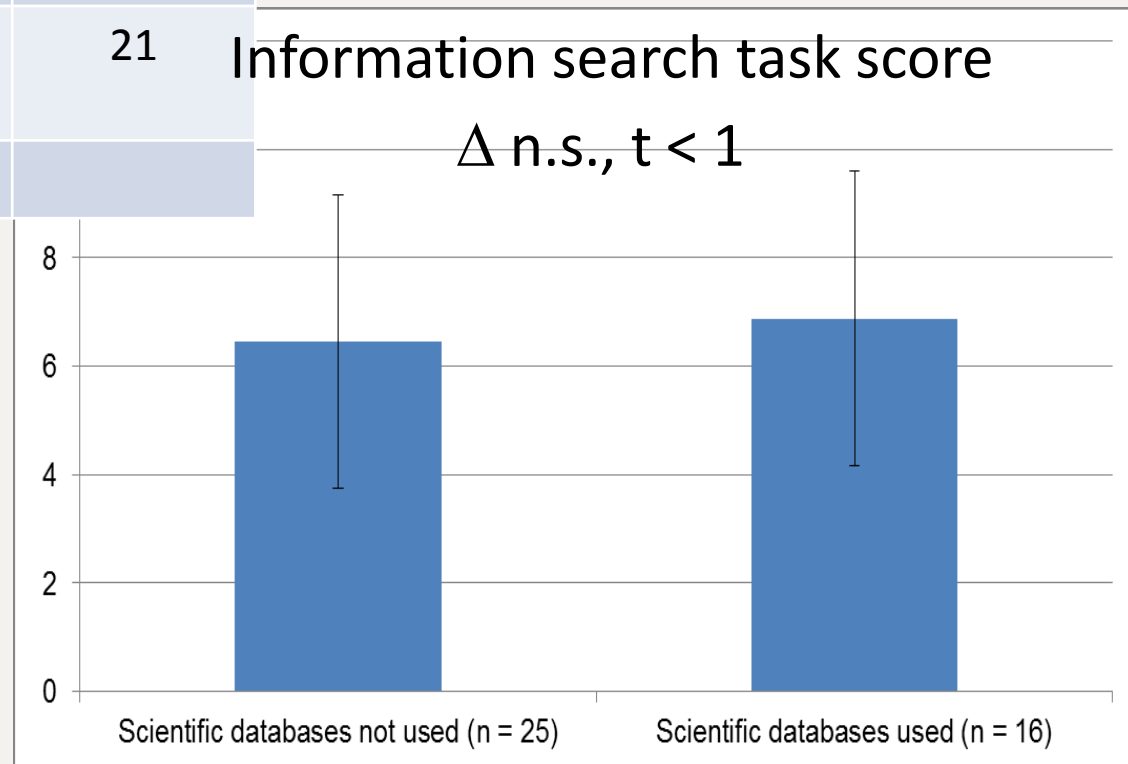
Results 2: Group means and standard deviations of the information search task score



Information search behavior

	No use of databases	Use of databases	<i>n</i>
First-year students	16	5	21
Advanced students	10	11	21
<i>n</i>	26	16	

($\chi^2 = 3.64$, *df* 1, *p* = .06)



Summary and conclusions 1

- (1) Construction and psychometric testing of measures of information literacy and domain knowledge
- Reliability: moderate to high internal consistency
 - Validity: ability to differentiate between groups with different levels of expertise

Summary and conclusions 2

(2) Description of information search behavior of students

- advanced students have not only gained knowledge about searching and evaluating information, but also use scientific databases more often than first year students
 - yet, they are not able to perform more effective searches
 - even use of scientific databases does not lead to more effective searches
→ inefficient use of databases (e.g., thesaurus, classification of methodology; see Sihvonen & Vakkari, 2004)?
- need for instruction about the proper use of scientific databases among German psychology students

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