Validity and accuracy of self-assessments about information searching skills in information literacy assessment

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Clarification of terms

Information Literacy (IL): Set of skills required to search for (scholarly) information (books, articles, etc.) in order to satisfy an information need

Assessment of IL:

**Achievement tests:** Multiple choice, often isolated declarative knowledge (exception: PIKE-Test)

**Information search tasks:** Information search about a given topic, results are evaluated, highest validity, procedural knowledge

**Self-assessments:** Student self-ratings on their subjective performance (self-efficacy), questionable validity

Rosman et al.: Validity of information literacy self-assessments
Self-assessments have diverse benefits. They ...

• expand the range of the assessment,
• shed light on the motivational reasons of success and failure,
• allow learners to identify individual strengths and weaknesses, and
• promote ‘meta-cognitive competencies such as self-reflection and self-evaluation’ (Dochy, Segers, & Sluijsmans, 1999, p. 332).

BUT ...

‘... self-report and ability scales only modestly correlate because people are notoriously bad at assessing their own capacities’ 

(Brackett & Mayer, 2003, p. 1155)
Research Question

Under which circumstances do self-assessments explain incremental variance over achievement tests in information search task performance?

Rationale:
Information literacy test and information search task completion provide *intrinsic feedback* about individual skills (Ackerman & Wolman, 2007; Rosman, Mayer, & Krampen, 2014)
Hypotheses

1) Self-assessments that take place after the administration of IL-related tasks (literature searches or standardized tests):
   - will correlate with ‘objective’ measures
   - explain incremental variance over standardized tests

2) This shift towards a more realistic skill appraisal is attributable to performance on the objective measures.
Study Participants

- $N = 81$ psychology students from a German university
- Mean age: $M = 22.33$ years ($SD = 2.99$)
- 91% female and 9% male
- 67% undergraduates and 33% in master’s degree program
Study Design

Phase 1: Self-Assessment

- Information literacy self-efficacy: SES-IB-16 (Behm, in press)

Phase 2: IL-related tests and tasks (“objective measures”)

- Information search tasks (Leichner et al., 2014); two scoring rubrics
- Information literacy achievement test: PIKE-P (Rosman, Mayer, & Krampen, in press); scenario-based multiple-choice test

Phase 3: Self-Assessment

- Re-administration of the SES-IB-16
<table>
<thead>
<tr>
<th>Scale</th>
<th>$M$</th>
<th>$SD$</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SES-IB-16 – T1</td>
<td>3.36</td>
<td>0.50</td>
<td>(.87)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2 SES-IB-16 – T2</td>
<td>3.17</td>
<td>0.53</td>
<td>.67**</td>
<td>(.87)</td>
<td></td>
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<tr>
<td>3 SES-IB-16 – T2T1 (Residualized gain)</td>
<td>-0.19</td>
<td>0.42</td>
<td>-.00</td>
<td>.74***</td>
<td>(.60)</td>
<td></td>
<td></td>
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<tr>
<td>4 PIKE-P</td>
<td>53.06</td>
<td>9.82</td>
<td>.02</td>
<td>.15+</td>
<td>.18+</td>
<td>(.72)</td>
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</tr>
<tr>
<td>5 Information search tasks – Outcome score</td>
<td>6.53</td>
<td>2.15</td>
<td>-.09</td>
<td>.13</td>
<td>.26**</td>
<td>.62***</td>
<td>(.59)</td>
<td></td>
</tr>
<tr>
<td>6 Information search tasks – Process score</td>
<td>6.34</td>
<td>2.16</td>
<td>.08</td>
<td>.30**</td>
<td>.34**</td>
<td>.64***</td>
<td>.66***</td>
<td>(.75)</td>
</tr>
</tbody>
</table>

Note. $N = 81$; SES-IB-16_T1 = Information literacy self-efficacy at the first measurement point; SES-IB-16_T2 = Information literacy self-efficacy at the second measurement point; PIKE-P = Procedural Information-Seeking Knowledge Test for Psychology Students; $M =$ mean; $SD =$ standard deviation; values in bold on the diagonal = Cronbach’s Alpha; $^+ p < .10$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$. 
<table>
<thead>
<tr>
<th>Block</th>
<th>Information search tasks: Outcome rubric</th>
<th>Information search tasks: Process rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$R^2$</td>
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<tr>
<td>Block 1</td>
<td>.39***</td>
<td></td>
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<tr>
<td>PIKE-P</td>
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<tr>
<td>Block 2</td>
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<tr>
<td>PIKE-P</td>
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</tr>
<tr>
<td>SES-IB-16_T2</td>
<td>.04</td>
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</tr>
</tbody>
</table>

Note. $N = 81$; Method: Enter; PIKE-P = Procedural Information Literacy Knowledge test for psychology students; SES-IB-16_T2 = Information literacy self-efficacy at the second measurement point; $\beta$ = standardized regression weight; $R^2$ = total variance explained; $\Delta R^2$ = change in $R^2$ from block 1 to block 2. * $p < .05$; *** $p < .001$. 
Conclusions and Implications

Include objective and subjective measures of information literacy in assessment batteries

Test order plays a crucial role: Self-Assessment measures should be administered after objective tests.

Low to moderate correlations of self-assessments with objective measures → Self-assessments should not be used as a sole measure for information literacy!
Thank you for your attention!
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