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Positioning of Clarification Features in Open Frequency and Open Narrative Questions  
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Positioning of Clarification Features in Open Frequency and Open Narrative Questions

Presented at GOR 2015
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Background

- Open ended questions in self-administered surveys
  - lack of interviewer assistance
  - no predefined response options for orientation

  **Clarification features improve survey responses by conveying additional information**

- Basic problem:
  - Effects of clarification features often suffer from limited attention

  **Attention-enhancing efforts**
Design of clarification features:

1. **Accessibility:**
   - Respondents do not always realize their need for clarification (Kunz & Fuchs, 2012)
   - Respondents are not willing to involve a lot of effort obtaining clarification features (Conrad et al., 2006; Conrad, 2007; Galesic et al., 2008; Peytchev et al., 2010)

**Clarification features should be always visible** (Galesic et al., 2008; Peytchev et al., 2010).
Previous Findings (2/2)

Design of clarification features:

2. **Position:**
   - Before the question  *(Redline, 2013)*
   - After the question  *(Christian & Dillman, 2004; Dillman, 2007; Peytchev et al., 2007)*
   - Clarification feature positions depend on the respective processing stage  *(Kunz & Fuchs, 2012)*
     - Definitions for key terms: before the question
     - Retrieval cues & motivating instructions: before or after the question
     - Formatting instructions: after the question or after the answer box
Research Questions

1. Do clarification features affect survey responses of open narrative and open numeric questions?

2. Does the position of clarification features affect survey responses?

3. Does the effect of the position of clarification features depend on the cognitive stage addressed by the instruction?
**Question Answer Process**

- **Comprehension**
  - Extending definition («Please include...»)
  - Restrictive definition («Please exclude...»)

- **Retrieval**
  - Retrieval Cues («Please also consider the study counselling office, the student council,...»)
  - Motivating Instructions («Please try to remember exactly...»)

- **Judgement**
  - Formatting instructions with open frequency questions («Please provide the answer in the following format hh:mm.»)
  - Formatting instructions with open narrative questions («Please give a very detailed answer.»)

- **Reporting**
  - Increased frequency
  - Reduced frequency
  - Increased frequencies
  - Higher number of characters
  - More correctly formatted answers
  - Higher number of characters
Positioning of Clarification Features

EG1 Please try to remember exactly every situation and the approximately duration, how long each situation continued. Consider this while thinking about your answer.

CG In which situations during the winter semester 2013/14 did you feel very stressed?

EG2 Please try to remember exactly every situation and the approximately duration, how long each situation continued. Consider this while thinking about your answer.

EG3 Please try to remember exactly every situation and the approximately duration, how long each situation continued. Consider this while thinking about your answer.
## Survey Methods

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample:</th>
<th>Field phase:</th>
<th>Topic:</th>
<th>Response Rate</th>
<th>Study Design</th>
<th>No. of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>university applicants (n=5,977)</td>
<td>July/August 2012</td>
<td>Qualification and expectation of university applicants</td>
<td>32%</td>
<td>Between subjects design with random assignment</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>university applicants (n=7,395)</td>
<td>July/August 2013</td>
<td>Satisfaction with the university and the subject of study</td>
<td>40%</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>university freshmen (n=1,696)</td>
<td>Feb/March 2014</td>
<td>Qualification and expectation of university applicants</td>
<td>26%</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>university applicants (n=5,996)</td>
<td>July/August 2014</td>
<td>Qualification and expectation of university applicants</td>
<td>35%</td>
<td></td>
<td>42</td>
</tr>
</tbody>
</table>
## Results

### Stage I: Comprehension

#### Extending Definition – numeric answers

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>School activities</td>
<td>Communication with classmates</td>
<td>School activities</td>
<td>Study activities</td>
</tr>
<tr>
<td></td>
<td>mean (hours)</td>
<td>mean (hours)</td>
<td>mean (hours)</td>
<td>mean (hours)</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>7a/b/c</td>
<td>2a/b/c</td>
<td>24a/b/c</td>
<td>28b/c</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>25*/b/c</td>
<td>11*/b/c</td>
<td>32*/b/c</td>
<td>29c</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>35*/a</td>
<td>18*/a</td>
<td>40*/a</td>
<td>31*</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>32*/a</td>
<td>17*/a</td>
<td>40*/a</td>
<td>32*/a</td>
</tr>
</tbody>
</table>

Notes. */a/b/c p<.05 pairwise post-hoc tests between all experimental conditions
## Results

### Stage I: Comprehension

#### Restrictive Definition – numeric answers

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Friends</td>
<td>Computer and Internet usage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mean (count)</td>
<td>mean (hours)</td>
<td>mean (hours)</td>
<td>mean (hours)</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>7</td>
<td>$16^{a/b/c}$</td>
<td>$17^{a/b/c}$</td>
<td>$384^{a/b/c}$</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>7</td>
<td>$10^{*/b}$</td>
<td>$16^{*/b}$</td>
<td>$236^{*/b}$</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>6</td>
<td>$9^{*/a}$</td>
<td>$15^{*/a/c}$</td>
<td>$191^{*/a}$</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>6</td>
<td>$10^*$</td>
<td>$16^{*/b}$</td>
<td>$220^*$</td>
</tr>
</tbody>
</table>

*Notes. */a/b/c $p<.05$ pairwise post-hoc tests between all experimental conditions*
## Results

### Stage II: Retrieval

#### Retrieval Cues – numeric and narrative answers

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bodily impairments</td>
<td>Information sources</td>
<td>Information sources</td>
<td>Reasons for studying</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td>mean (count)</td>
<td>mean (count)</td>
<td>mean (count)</td>
<td>mean (count)</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>0.4\textsuperscript{a/b/c}</td>
<td>2.6\textsuperscript{a/b/c}</td>
<td>1.7\textsuperscript{b/c}</td>
<td>1.6\textsuperscript{a/b/c}</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>1.2\textsuperscript{*/b/c}</td>
<td>2.8\textsuperscript{*/b/c}</td>
<td>1.8\textsuperscript{b}</td>
<td>1.9\textsuperscript{*/b}</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>2.2\textsuperscript{*/a}</td>
<td>3.1\textsuperscript{*/a}</td>
<td>2.0\textsuperscript{*/a/c}</td>
<td>2.2\textsuperscript{*/a}</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>2.4\textsuperscript{*/a}</td>
<td>3.0\textsuperscript{*/a}</td>
<td>1.9\textsuperscript{*/b}</td>
<td>2.1\textsuperscript{*}</td>
</tr>
</tbody>
</table>

*Notes. */a/b/c p<.05 pairwise post-hoc tests between all experimental conditions*
# Results

## Stage II: Retrieval

### Motivating Instruction – narrative answers

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reasons for studying mean (characters)</td>
<td>Mean (characters)</td>
<td>Mean (characters)</td>
<td>Mean (characters)</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>128a/b/c</td>
<td>86a/b/c</td>
<td>87a/b/c</td>
<td>106a/b/c</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>150*/b/c</td>
<td>108*/b/c</td>
<td>101*/b/c</td>
<td>127*/b</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>170*/a</td>
<td>155*/a/c</td>
<td>125*/a</td>
<td>132*/a/c</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>166*/a</td>
<td>130*/a/b</td>
<td>116*/a</td>
<td>109*/b</td>
</tr>
</tbody>
</table>

Notes. */a/b/c p<.05 pairwise post-hoc tests between all experimental conditions
## Results
### Stage IV: Formatting

### Formatting Instruction – numeric answers

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extracurricular activities (hh:mm)</td>
<td>Decision to study (MM.YYYY)</td>
<td>Extracurricular activities (hh:mm)</td>
<td>Decision to study (MM.YYYY)</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>0a/b/c</td>
<td>3a/b/c</td>
<td>24a/b/c</td>
<td>0a/b/c</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>32*/b/c</td>
<td>69*/b/c</td>
<td>65*/b/c</td>
<td>27*/b/c</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>55*/a/c</td>
<td>77*/a</td>
<td>81*/a/c</td>
<td>59*/a</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>49*/a/b</td>
<td>77*/a</td>
<td>86*/a/b</td>
<td>52*/a</td>
</tr>
</tbody>
</table>

Notes. */a/b/c p<.05 pairwise post-hoc tests between all experimental conditions
## Results
### Stage IV: Formatting

#### Formatting Instruction – narrative answer

<table>
<thead>
<tr>
<th>Experimental condition</th>
<th>University Applicants 2012</th>
<th>University Applicants 2013</th>
<th>Freshmen 2013/14</th>
<th>University Applicants 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Study expectations (mean (characters))</td>
<td>Experiences of success (mean (characters))</td>
<td>Reasons for studying (mean (characters))</td>
<td>Orientation for freshmen (one keyword) (correctly formatted (%))</td>
</tr>
<tr>
<td>No Definition (CG*)</td>
<td>114&lt;sub&gt;a/b/c&lt;/sub&gt;</td>
<td>113&lt;sub&gt;a/b/c&lt;/sub&gt;</td>
<td>111&lt;sub&gt;a/b/c&lt;/sub&gt;</td>
<td>62&lt;sub&gt;a/b/c&lt;/sub&gt;</td>
</tr>
<tr>
<td>Before Question (EGa)</td>
<td>164&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;b&lt;/sub&gt;</td>
<td>150&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;b&lt;/sub&gt;</td>
<td>184&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;b&lt;/sub&gt;/c</td>
<td>81*</td>
</tr>
<tr>
<td>After Question (EGb)</td>
<td>189&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;a/c&lt;/sub&gt;</td>
<td>186&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;a/c&lt;/sub&gt;</td>
<td>213&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;a/c&lt;/sub&gt;</td>
<td>79*</td>
</tr>
<tr>
<td>After Answer Box (EGc)</td>
<td>176&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;b&lt;/sub&gt;</td>
<td>148&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;b&lt;/sub&gt;</td>
<td>157&lt;sup&gt;*&lt;/sup&gt;/&lt;sub&gt;a/b&lt;/sub&gt;</td>
<td>79*</td>
</tr>
</tbody>
</table>

*Notes. */a/b/c p<.05 pairwise post-hoc tests between all experimental conditions*
Results
Summary (EG1 & EG2)

before the question

- Extending num.: 5/5
- Restrictive num.: 5/5
- Retrieval Cues num.: 2/2
- Retrieval Cues narr.: 3/3
- Motivating narr.: 5/5
- Formatting num.: 5/5
- Formatting narr.: 3/5

after the question

- Extending num.: 4/5
- Restrictive num.: 4/5
- Retrieval Cues num.: 2/2
- Retrieval Cues narr.: 3/3
- Motivating narr.: 5/5
- Formatting num.: 5/5
- Formatting narr.: 5/5
Extending
Restrictive
Retrieval Cues
Formatting

open frequency questions

open narrative questions

strong effect    medium effect    low effect

Retrieval Cues
Motivating
Formatting

after the answer box
Results

Time

Notes. F-Test: control group vs. experimental groups: * p<.05
Conclusion

- Clarification features are considered by respondents regardless of their position.

- Respondents rather incorporate clarification features into the question-answer process if they are placed after the question.
  
  - Clarification features positioned after the question maximize the effectiveness.

- The optimal position does not depend on the cognitive stage of the question-answer process.

- If the position after the response options can be similar effective as the position after the question requires further research.

- Clarification features should not be positioned before the question.
Thank you.