Web Search Literacy
Overview on Skill Acquisition

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1 Skill Acquisition in Online-Tutorial Group

Skill	Test 1	Test 2	Test 3
Indexing			
bad_content	40.0%	73.33%	76.0%
cost	30.0%	83.33%	88.0%
crawler	66.67%	100.0%	96.0%
fields	53.33%	60.0%	52.0%
new_documents	33.33%	60.0%	72.0%
old_content	40.0%	90.0%	84.0%
register	73.33%	76.67%	68.0%
reindex	63.33%	76.67%	56.0%
reindex_interval	56.67%	80.0%	80.0%
veracity_assessment	70.0%	90.0%	96.0%
web	80.0%	90.0%	96.0%
Searchability			
availability	40.0%	76.67%	84.0%
index_exclusion	60.0%	60.0%	80.0%
nolink	40.0%	66.67%	76.0%
only_index	46.67%	86.67%	88.0%
supported_documents	23.33%	96.67%	96.0%
Web Search			
content	83.33%	90.0%	80.0%
fields	10.0%	76.67%	80.0%
logical_and	40.0%	23.33%	24.0%
logical_not	40.0%	100.0%	100.0%
logical_or	53.33%	100.0%	96.0%
match_media_documents	46.67%	66.67%	76.0%
phrase	6.67%	70.0%	48.0%
qualitative_search	46.67%	93.33%	84.0%
quantitative_search	93.33%	96.67%	92.0%
restriction	60.0%	70.0%	84.0%
terms	23.33%	53.33%	56.0%

Skill	Test 1	Test 2	Test 3
Linguistic Functions			
case	86.67%	100.0%	96.0%
punctuation	63.33%	83.33%	88.0%
spelling	80.0%	86.67%	72.0%
stemming	53.33%	93.33%	80.0%
stop_words	3.33%	56.67%	48.0%
Ranking			
features	83.33%	93.33%	96.0%
personalized	93.33%	93.33%	100.0%
personalized_different_users	76.67%	93.33%	76.0%
personalized_history	100.0%	100.0%	100.0%
personalized_language	96.67%	93.33%	88.0%
personalized_location	46.67%	100.0%	100.0%
personalized_same_user	70.0%	93.33%	84.0%
term_frequency	26.67%	70.0%	64.0%
term_ordering	3.33%	63.33%	44.0%
Search Tactics			
bibble	13.33%	33.33%	48.0%
filter	10.0%	36.67%	32.0%
hubspoke	73.33%	80.0%	20.0%
phrase	30.0%	76.67%	72.0%
select	66.67%	96.67%	80.0%
sub	0.0%	46.67%	32.0%
suggestion	30.0%	80.0%	8.0%
type	100.0%	100.0%	96.0%

Skill	Test 1	Test 2	Test 3
Query Language			
and	6.67%	70.0%	64.0%
define	0.0%	43.33%	48.0%
filetype	3.33%	63.33%	32.0%
grouping	50.0%	83.33%	80.0%
intitle	0.0%	56.67%	40.0%
number_range	0.0%	26.67%	32.0%
operator_not	20.0%	76.67%	88.0%
operator_not_short	26.67%	83.33%	88.0%
or	10.0%	83.33%	52.0%
or_short	13.33%	90.0%	92.0%
phrase	30.0%	76.67%	72.0%
site	3.33%	66.67%	48.0%
syntax_operators	36.67%	76.67%	84.0%

Table 1: Overview on skill acquisition for the tutorial group. Percentage values represent the proportion of students who were found to have a particular skill in a particular knowledge test acquired. Skill prefixes are omitted due to space limitation.

2 Skill Acquisition in Gamification Group

Skill	Test 1	Test 2	Test 3
Indexing			
bad_content	53.57%	82.14%	80.0%
cost	50.0%	89.29%	84.0%
crawler	67.86%	96.43%	100.0%
fields	50.0%	71.43%	60.0%
new_documents	46.43%	67.86%	64.0%
old_content	50.0%	89.29%	92.0%
register	53.57%	85.71%	80.0%
reindex	67.86%	89.29%	68.0%
reindex_interval	89.29%	92.86%	88.0%
veracity_assessment	75.0%	89.29%	96.0%
web	75.0%	92.86%	92.0%
Searchability			
availability	50.0%	75.0%	76.0%
index_exclusion	67.86%	64.29%	56.0%
nolink	53.57%	85.71%	76.0%
only_index	35.71%	92.86%	84.0%
supported_documents	46.43%	96.43%	96.0%
Web Search			
content	75.0%	82.14%	88.0%
fields	7.14%	89.29%	84.0%
logical_and	32.14%	25.0%	28.0%
logical_not	57.14%	100.0%	100.0%
logical_or	50.0%	100.0%	96.0%
match_media_documents	60.71%	64.29%	52.0%
phrase	28.57%	64.29%	68.0%
qualitative_search	32.14%	75.0%	64.0%
quantitative_search	89.29%	92.86%	88.0%
restriction	78.57%	82.14%	80.0%
terms	10.71%	64.29%	56.0%

Skill	Test 1	Test 2	Test 3
Linguistic Functions			
case	75.0%	89.29%	88.0%
punctuation	67.86%	82.14%	68.0%
spelling	85.71%	89.29%	96.0%
stemming	57.14%	96.43%	96.0%
stop_words	3.57%	46.43%	44.0%
Ranking			
features	82.14%	100.0%	92.0%
personalized	100.0%	96.43%	100.0%
personalized_different_users	78.57%	89.29%	96.0%
personalized_history	96.43%	100.0%	100.0%
personalized_language	92.86%	89.29%	88.0%
personalized_location	50.0%	100.0%	96.0%
personalized_same_user	78.57%	82.14%	84.0%
term_frequency	14.29%	67.86%	68.0%
term_ordering	25.0%	53.57%	60.0%
Search Tactics			
bibble	10.71%	35.71%	48.0%
filter	25.0%	35.71%	44.0%
hubspoke	32.14%	71.43%	48.0%
phrase	57.14%	85.71%	76.0%
select	64.29%	92.86%	92.0%
sub	7.14%	57.14%	40.0%
suggestion	57.14%	82.14%	40.0%
type	96.43%	96.43%	100.0%

Skill	Test 1	Test 2	Test 3
Query Language			
and	10.71%	71.43%	56.0%
define	3.57%	64.29%	64.0%
filetype	3.57%	82.14%	48.0%
grouping	57.14%	89.29%	96.0%
intitle	0.0%	46.43%	52.0%
number_range	0.0%	35.71%	36.0%
operator_not	21.43%	89.29%	76.0%
operator_not_short	35.71%	89.29%	92.0%
or	21.43%	89.29%	76.0%
or_short	7.14%	96.43%	92.0%
phrase	57.14%	85.71%	76.0%
site	3.57%	71.43%	64.0%
syntax_operators	46.43%	78.57%	100.0%

Table 2: Overview on skill acquisition for the gamification group. Percentage values represent the proportion of students who were found to have a particular skill in a particular knowledge test acquired. Skill prefixes are omitted due to space limitation.