

Informal learning via using webpages and its potential for developing financial literacy

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Background and aim

Relevance of FL:

21st century skill (Trilling, & Fadel, 2009; Lusardi, 2015)

Influences individual as well as societal financial well-being, specifically financial inclusion, and consumer protection (Atkinson, & Messy, 2013, p. 9)

Important element of economic and financial stability, both for the individual and the economy (Lusardi, 2015, p. 639)

FL regarding mortgages

- 1 Calculation of free monthly income (e.g. Hölting, Opoczynski, & Leutke, 2012, p. 46 ff.)
- 2 Spending choice (OECD, 2013, p. 148) between renting and buying (Keller, 2013, p. 32)
- 3 Calculation of the affordable purchase price (e.g. Hölting, Opoczynski, & Leutke, 2012, p. 56; Keller, 2013, p. 19)
- 4 Calculation of the loan, interest, term of fixed interest, amount of annuity, term of the loan (e.g. Hölting, Opoczynski, & Leutke 2012, p. 74 ff.; Keller, 2013, p. 61 ff.)

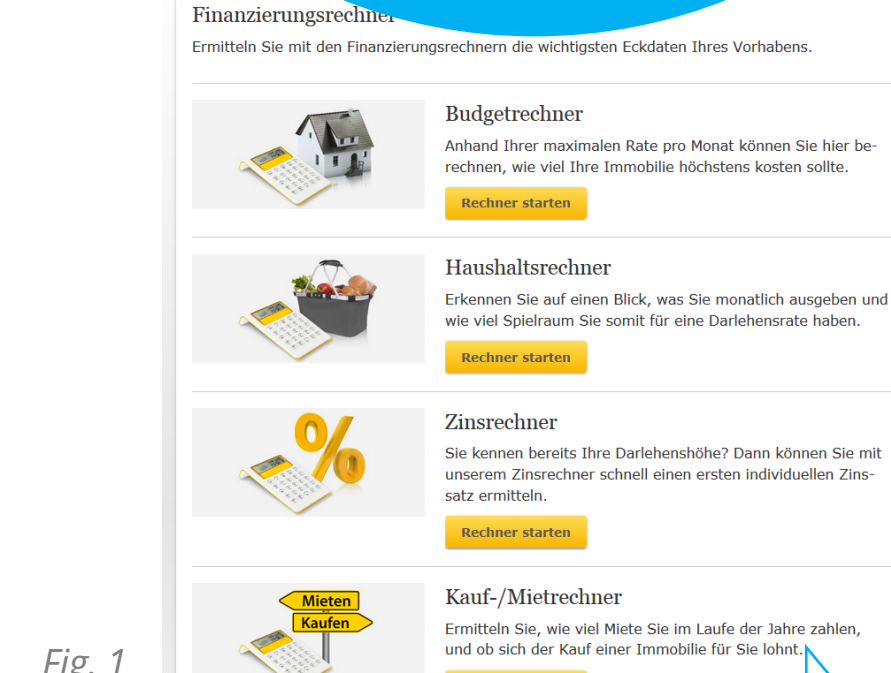


Fig. 1

Online information provided by banks, financial intermediaries, and financial service providers as basis for **informal learning**

- FL "... is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to **apply such knowledge** and understanding in order to make effective decisions ..." (OECD, 2013, p. 144).

- FL is assumed to be **highly informally developed** (Macha, Neubauer, Rehm, & Schuhen, 2011)

Informal learning (IL):

- IL as "any activity involving the pursuit of understanding, knowledge or skill which occurs without the presence of externally imposed curricular criteria" (Livingstone, 2001, p. 4)
- Not particularly organised, planned or structured in terms of objectives or time, and it is not formally recognised (Werquin, 2010, p. 22)
- Often takes place without the assistance of an instructor to support the learning process (Darnik, Proiske, Narciss, & Kördle, 2013, p. 431)
- Webpages provide on-demand access (Dennen, & Wang, 2002, p. 443)

Aims:

Analysing whether people are able to develop FL by means of online information about mortgages in an IL-setting using the Internet.

Evidence whether learning informally from the Internet can contribute to the development of FL.

Methods

Research questions:

I. Does informal learning using webpages support the development of FL about mortgage loans?

II. Do certain factors, specifically prior knowledge, prior financial experience and interest in the topic influence the development of financial FL about mortgage loans?

Sample

	n	M Age	n Apprenticeship	%
EG	23 (17f, 6m)	21.8	8	17.8
CG	22 (16f, 4m, 2d)	22.5	4	8.9
Total	45 (33f, 10m, 2d)	22.2	12	26.7

Material (intervention EG): loan calculator Commerzbank

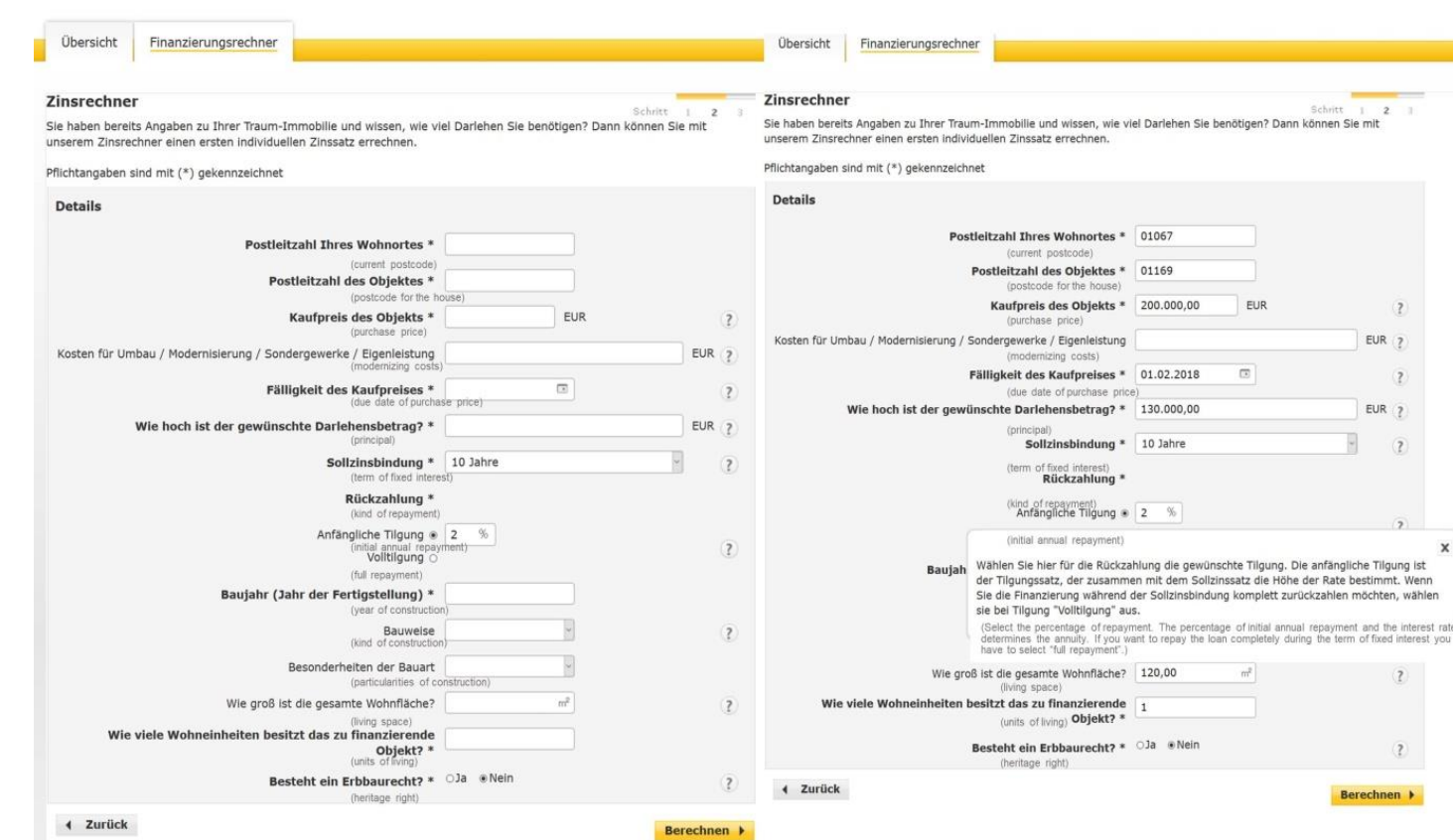


Fig. 2

Results

Self-assessment **questionnaire** data about financial knowledge and experience confirmed three factors:

CFA, $n = 203$, uls, CFI 1.000, Tucker-Lewis 1.009, RMSEA 0.000

- 1) Experience with investments and financing,
- 2) Financial knowledge, and
- 3) Interest in home ownership (motivational factor).

Scores for the pre-test and post-test

	CG, n = 22				EG, n = 23			
	M	SD	Min	Max	M	SD	Min	Max
Pre-test	3.00	1.45	0	6	3.43	1.27	1	6
Post-test total	11.18	3.74	3	17	12.70	4.78	4	21
Post-test comprehension	8.32	2.64	2	13	8.87	3.14	3	14
Post-test transfer	2.86	1.78	0	7	3.83	1.85	1	8

reachable max. scores: pre-test: 7; post-test: 21; post-test comprehension: 15; post-test transfer: 6

- Groups did not differ significantly ($n = 45$, t-Tests) total score post-test: $t = -1.180$, $df = 43$, $p = .245$, $d_{Cohen} = 0.355$, $(1-\beta) = .31$ comprehension score: $t = -0.636$, $df = 43$, $p = .528$, $d_{Cohen} = 0.190$, $(1-\beta) = .15$ transfer score: $t = -1.777$, $df = 43$, $p = .083$, $d_{Cohen} = 0.535$, $(1-\beta) = .51$
- ANCOVAs (post-test scores, group, factors): post-test scores are significantly influenced only by prior knowledge (total score post-test $F(1,39) = 5.907$, $p = .02$, $\eta^2 = .132$, $(1-\beta) = .72$, comprehension $F(1,39) = 5.502$, $p = .024$, $\eta^2 = .124$, $(1-\beta) = .69$; transfer $F(1,39) = 9.334$, $p = .004$, $\eta^2 = .193$, $(1-\beta) = .89$)
- Post-test total score significantly differed dependent on high or low financial knowledge reported (Median-Split, $F(1,41) = 5.340$, $p = .026$, $\eta^2 = .115$, $(1-\beta) = .66$)

Discussion

- Calculators on bank webpages as everyday-life learning environment did not sufficiently enable potential customers' development of financial literacy
- Knowledge gain mostly explained by prior knowledge about investments and financing
- To contribute to the development of FL via webpages efforts supporting IL are necessary
- IL could be fostered by implementing support on the webpage for selecting, organising and integrating (SOI) information with prior knowledge
- Higher-order thinking processes have to be stimulated (Mayer, 2009; Darnik et al., 2013)
- Hints for fostering SOI and higher-order thinking processes could be found—beside others—in multimedia principles, e.g. the pre-training principle or the multimedia principle (Mayer, 2017)

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Figures:

Fig. 1: calculators offered by websites of Commerzbank
Fig. 2: loan calculator Commerzbank (as used for the study in 2017)
(Acknowledgement: websites underlie frequent modifications)