**Systematization of German-language studies for the competence assessment of financial literacy**

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**Summary**

The number of studies on the competence survey in the field of financial literacy has increased significantly in recent years. This is based on the intention to be able to validate relevant knowledge and competency facets as well as to carry out comparative studies. However, it seems that the views differ from financial literacy and related aspects.

The aim of this article is to provide a systematic overview of the concept of German-speaking students in the field of financial literacy. In addition to the content aspects, the focus is on the extent to which the studies under consideration allow requirements for a competence-oriented survey.

**Abstract**

The number of studies on the assessment of financial literacy has increased in recent years. They are based on the intention to validate relevant skills facets as well as to carry out comparative studies. However, it seems that the concept of financial literacy and related aspects differ significantly.

The aim of this paper is to provide a systematic overview of the concept of German studies on financial literacy. In addition to the content aspects the focus is on which extent the studies reviewed consider a competency-based approach.

**1 Introduction**

Looking at the development of the financial services market in recent years, it is clear that the financial landscape in particular has become very dynamic and complex. Financial markets have assumed such levels of instability that they are partly uncontrollable, as was evident not least in the height of the financial crisis of 2007/2008 (see Helbing/Christians 2010; Kohlleppel/Wambach 2013). As a result, citizens must face up to the challenge of finding guidance within these increasingly confusing systems in order to be able to make reflected financial decisions. Accordingly, the provision of appropriate educational opportunities at all stages of life is necessary, as this is the only way to enable informed and enlightened participation (see Seeber 2012, 255).

This finding is reflected in research into general financial education, which is growing worldwide (see Blue et al. 2014). In 2012, for example, a module on financial literacy within the Programme for International Student Assessment (PISA) was carried out on a larger scale at international level (see OECD 2014; Sälzer/Prenzel 2014). In addition to PISA, there are a number of other studies in English-language studies that use different approaches to elevate the construct of financial literacy (see meta-analysis in Schürkmann/Schuhen 2013, 78). However, the majority of these studies are faced with criticism for failing to meet the requirements for a valid assessment of competence (see Lusardi/Mitchell 2011, 3ff.; Greimel-Fuhrmann 2013/2014, 3ff.). In this context, Retzmann/Frühauf (2014, 55) raise the question of "[...] whether an independent test is needed for the measurement of financial compensation [...]" or whether the consideration of financial competence as a component of economic competence is sufficient. Schuhen/Schürkmann (2014, 1) find that the problem of studies is often a lack of differentiation between competences, knowledge or attitudes. Although this criticism of studies on financial literacy seems understandable, it must be noted that not everyone also pursues the claim of a competence-oriented survey. For example, individual studies focus exclusively on behavioural or attitude-related aspects (see overview in Barry/Breuer 2012, 12).

Within the framework of this article, various approaches to the collection of financial literacy in the German-speaking countries are systematized. For this purpose, the current theoretical discourse as well as conceptual considerations for competence modelling are taken into account. The goal

is to make a critical assessment of existing survey tools with regard to their focus on financial literacy.

**2 Financial literacy in Germany**

Unlike in the German-speaking world, the debate on the definition of financial education in English-language literature has long been conducted under the concept of financial literacy (see Gnan et al. 2007, 31; Habschick et al. 2007, 11; 2010, 279). Translated into the German-speaking area, the term financial literacy would have to be used in the discussion, according to a literal translation of the concept of financial literacy. In the field of linguistic seualism, the degree of literacy is often limited to two forms: either someone masters reading and writing or not. A transfer to finance would seem too imprecise even with several levels of literacy, since the technical discussion about the knowledge and skills about which a "financially educated" person is currently in full swing. In addition, critics of the term argue that, like learning the written language, the appropriation of knowledge with regard to financial concepts is objectively comprehensible and an individual must acquire and practice with only certain rules and concepts in order to be able to operate in a society shaped by finances. However, the development of financial services is very dynamic, while the written language is changing very slowly, if at all (see Reifner 2003a, 210/2003b, 2; Bay et al. 2014, 31).

Due to this criticism, the term financial literacy is often simply adapted for German language use. Other concepts such as financial literacy, financial knowledge, financial education or financial general education are often not separated from each other and are regularly used interchangeably, which can lead to ambiguity (see Gnan et al. 2007, 31f.; Habschick et al. 2007, 11f.; Kaminski/Friebel 2012, 4; Greimel-Fuhrmann 2013/2014, 48). A first step towards systematization could be a differentiation between the process and the result perspective. This is how Kaminski/Friebel (2012, 40) Financial general education as a

*"[...] the process of developing financial literacy. This is understood as the sum of attitudes, motivations, values, knowledge, skills and skills that enable an individual to orientate himself competently and properly in the financial services market, to enable him to organise his or her own finances, to act accordingly and to focus on the analysis and*

*to contribute to the institutional framework of the financial services sector. In addition to the consumer perspective, general financial education also includes the business perspective and the regulatory dimension in order to allow a multi-perspective examination of finance, financial products and the institutional framework related to it."*

According to this definition, therefore, financial education is, on the one hand, a path whose objective is to develop financial competence. On the other hand, financial general education encompass areas of content in which competences are to be acquired and which thus define learning objectives. Reifner (2003a, 19ff.), who understands financial education as more vocationally specific (e.g. commercial knowledge) and thus affects only part of the population, argues that this term should be used. Habschick et al. (2003, 11) also critically deals with the term "financial general education" and notes that general education is comprehensively defined and cannot be reduced into a sub-area such as the handling of private finances. They see the intention of the term closest to the term "basic financial education". Although the concepts vary in their view, they seem to have the incommon right to establish the framework for a domain-specific education sector.

The Policy Research Institute Social and Enterprise Development Innovations (SEDI) (2004, 5f.) argues that the term "financial literacy" is often too narrow as it is limited to knowledge and self-security aspects. Instead, it is argued for the use of the broader term "financial capability", since it also includes responsible action. Reifner (2011, 13) translates the latter term into German as financial compromise. Other works, on the other hand, have a broader understanding of financial literacy, which also includes explicitly action-related aspects (see Schürkmann/Schuhen 2013).

Hung et al. (2009, 7) see a likelihood of confusion between the terms "financial literacy" and "financial education": While financial literacy focuses on learning progress at a given time (results orientation), financial education recurs on the transfer of knowledge and the enabling of learning progress of financial literacy (process orientation). Figure 1 contains a structuring approach of the terms presented here on the subject area.

*Figure 1: The ratio of terms in the context of financial literacy based on Habschick et al. (2003, 11); Reifner (2003a, 19ff.); Social and Enterprise Development Innovation (SEDI) (2004, 5f.); Reifner (2011, 13); Kaminski/Friebel (2012, 4)*

Studies on the field shown here must be aware of the ambiguity of the term and provide a description of their underlying understanding. In this work, the term financial literacy is deliberately used, as it is often used in connection with learning status surveys (e.g. *PISA, Financial Literacy around the world, The financial literacy of young American adults*).

Learning level surveys are carried out on a specific cut-off date and are therefore clearly results-oriented (although this also provides a limited indication of the quality of financial education measures). It is therefore necessary to have a critical discussion of requirements for such surveys, in which the concept of competence is often used (see Schürkmann/Schuhen 2013) and which is subsequently adapted to the financial literacy area.

**3 Requirements for competence surveys in the field of financial literacy**

**3.1  Content dimensions of financial literacy**

Validity as one of the main quality criteria of empirical tests describes the validity of a measurement and describes the extent to which the test measures what it is intended to measure (see Hartig/Jude 2007, 23). It is therefore important to identify relevant aspects in order to design an instrument for collecting financial literacy. Figure 2 illustrates the structuring approach of core areas of general financial education by Kaminski/Friebel (2012, 41).

*Figure 2: Core areas of general financial education from the perspective of households Source: Kaminski et al. 2008, 36; Kaminski/Friebel 2012, 41)*

The aspects set out include issues that households face in everyday life and form the heart of financial joint education on the basis of literature analyses (see Kaminski et al. 2008, 36; Castles et al. 2011, 23)[[1]](#footnote-1).

Locks et al. (2011) make an additional differentiation by making relationships and intersections (e.g. saving is an aspect of dealing with money and affects the creation of assets) of the four core areas. In addition to the four areas of content outlined above, the Council for Teaching Economic Education (2013) sees "buying behaviour" and "generating income" as essential dimensions in the context of financial literacy.

In addition to these areas of content attributed to more private households, the importance of a multi-perspective on financial education is emphasised. According to Kaminski/Friebel (2012, 42), the following three of the views of households should be added to:

      companies as providers of financial products and services (procurement, processing and valuation of financial information as well as dealing with advisory and sales situations),

      the state as a producer of institutions and rules (the role of the state and the influences of international financial interdependencies),

      the international financial system (functions and interests of financial service providers)

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Seeber (2012, 254) is also in favour of taking a multi-perspective and notes that financial education includes "[...] In addition to individual (concrete) knowledge of action, systemic knowledge and the ability to make a reflexive judgment on the regulatory framework of financial actions of different actors".

In this context, the concept of Shoes/Schürkmann (2014, 5f.) should also be mentioned, which uses the potential content of such competence on the basis of a categorical approach that includes "debt" and "value creation".

Basically, it should be noted that the determination of the content facets of financial literacy is a normative process, which depends on the perspective of the respective authors or experts in question. It seems, however, that, at least from the point of view of households, there is a consensus on the content of financial literacy. This is based on the questions of the ability to structure the individual life situation and the ability to critically reconstruct institutional economic reality. If necessary, the regional or geographical claim to these aspects, which is dependent on social and economic order, remains to be clarified.

**3.2 Competence orientation**

In addition to the question of which facets of content belong to a financial literacy, a large number of works are devoted to the scientific examination of the concept of competence (see Seeber 2012; Nickolaus et al. 2013; Schürkmann/Shoes 2013; Greimel- Fuhrmann 2013/2014; Shoes/Schürkmann 2014; Kaiser/Kirchner 2015; Retzmann/Seeber 2016). In particular, in the school sector, more competence orientation is needed to ensure that not only pure knowledge is imparted, but that learners are enabled to solve problems (see Klieme/Hartig 2008, 12). Transferring to financial literacy would therefore mean that competence orientation would mean being able and willing to apply the theoretical knowledge of contracts and financial planning to a real-life situation such as the conclusion of a lease.

Although it is clear that even a separate recording of individual facets of competence, such as financial knowledge, can be methodically difficult (see Greimel-Fuhrmann 2013/2014, 52), the use of the concept of competence implies the demand for a multidimensional approach to financial literacy. This requirement is based on theoretical considerations of financial literacy, which are explained below:

According to Schürkmann/Schuhen (2013, 77), the focus must be on the application of *problem solving strategies in variable situations in*addition to pure knowledge reproduction. The necessity of this arises from the constituent characteristics of a competence, such as Weinert (2014, 27). Within the scope of the competence model analysis, it is therefore necessary to determine to what extent solution strategies or solutions are provided in the tasks and whether knowledge is not only queried, but also related to concrete problems.

Furthermore, a competence measurement should always be based on a competence model, where a distinction must be made between *competence structure models*and competence level *models.*At best, they are used simultaneously in a study (see Klieme et al. 2007, 11). *Competence structure models*are based on the assumption that competences, such as financial competence, can in turn be broken down into sub-competences. Within a *competence structure model,*the subordinate sub-competences that constitute the overarching competence are accordingly described and thus represent the internal structure of competence (cf. Klieme et al. 2007, 12f.; Zlatkin-Troitschanskaia 2011, 224; Nickolaus et al. 2013, 41). *Competence models or*taxonomies, on the other hand, are based on scales that describe different levels of competence. In surveys, therefore, the difficulty of tasks must vary and an assignment to competence levels must take place (see Hartig/Klieme 2006, 133f.; Klieme et al. 2007, 11f.; Nickolaus et al. 2013, 42).

Furthermore, *task formats*must not be chosen at will. A competence development is not aimed at sluggish knowledge, but at the concrete application and implementation of the acquired knowledge in different situations and for coping with concrete test subjects. Accordingly, test tasks must also be designed in such a way that they do not exclusively require factual knowledge, which is made possible, for example, by open or at least semi-open tasks (cf. Klieme 2004, 13; Schürkmann/Shoes 2013, 77). In this context, Klieme (2004, 13) highlights the use of group tasks and simulations on the computer and proposes that "[...] work samples, short lectures and presentations, group discussions and interviews." However, these methods can only be carried out with an enormous effort for large surveys (Klieme/Hartig 2008, 24). A mixture of multiple-choice and open tasks is recommended, as distortions can be avoided by using different formats (see Klieme/Hartig 2008, 24; OECD 2013, 159). It seems particularly important

not to use closed response formats exclusively to record competences, since it is questionable whether the provision of response options, which requires only the selection of the right answer, would ensure that a similar problem would be tackled in a real situation in which no possible solutions are provided (see Hartig/Jude 2007, 30). However, it is also necessary to highlight the weaknesses of open tasks in this context. Thus, these are combined with a higher effort in terms of development, response and interpretation, so that, in contrast to closed multiple-choice tasks, the objectivity of the output is less clear (Hartig/Jude 2007, 30).

Klieme/Hartig (2008, 25) argue that, in addition to the recording of cognitive dispositions, *additional affective characteristics*should be recorded. In this way, the reliability of the results could be increased by controlling situational circumstances such as the motivation of the respondents.

The previous considerations regarding the requirements to be placed on a competence model in the field of financial literacy are summarized in Figure 3. They form the analytical criteria for the subsequent study of German-language studies on financial literacy.

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*Figure 3: Requirements for competence measurements in the field of financial literacy*

**4 Analysis of German-language studies on competence measurement in the field of financial literacy**

**4.1 Presentation of the studies**

This article includes five studies below, in which free availability is the selection criterion for the test items.[[2]](#footnote-2)

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| --- | --- | --- | --- | --- |
| **Study** | **Author(s)** | **Target construct** | **Items to the target construct\*** | **N** |
| Financial Literacy and Retirement Planning in Germany | Bucher-Koenen/ Lusardi (2011) | Financial literacy | 3 | 1059 |
| Financial illiteracy in Germany | Leinert (2004) | Financial alphabetism | 6 | 2002 |
| Sparda Study - Financial Behaviour in Hesse | Sparda Bank (2011/2012) | Financial behaviour, economic knowledge and financial competence | 28 | 1000 |
| Financial knowledge and financial planning expertise of the Germans | Banking Association/ Society for Consumer Research (2014) | Financial Competence Index | 6 | 502 |
| Financial Literacy in Switzerland | Stäheli et al. (2008) | Financial literacy index (FLI) | 10 | 360 |
| *\* Only considers the number of items to the target construct. Individual studies also show other items that touch on aspects of financial literacy. This is clear from the description of the respective study.* | | | | |

*Table 1: Studies in the context of the analysis*

**4.1.1 Financial Literacy and Retirement Planning in Germany**

The 2011 study by Bucher-Koenen/Lusardi (2011) is based on data from the 2009 study *Savings and Retirement Provision in Germany*conducted by the *Mannheim Center for the Economics of Aging*(see Börsch-Supan et al. 2009, 11; Bucher-Koenen/Lusardi 2011, 566f.). The study covers three blocks of *financial literacy,*which asked households. These are also identical to questions about financial literacy in the *FLat World study,* which was conducted within the *American Health and Retirement Study*2004 (see Bucher-Koenen/Lusardi 2011; Lusardi/Mitchell 2011, 3). All three

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questions in the study touch on the core areas of "handling money" and "wealth building and retirement provision". The first two include arithmetic tasks for interest rate and inflation calculation, and in the last task, knowledge of equity investments is requested. The arithmetic tasks require the estimation or resolution of a life-like situation. The aim of the study is *financial literacy,* to what extent a competence model is based here is not apparent.

**4.1.2 Financial illiteracy in Germany**

The second study considered here is the 2004 study of *financial illiteracy*in Germany carried out by Leinert. This study is based on precautionary surveys carried out by the Bertelsmann Stiftung in 2002 (see Leinert 2004, 24f.; Kaminski/Friebel 2012, 9). It refers to 30- to 50-year-old German persons who were interviewed in a telephone interview. The aim of the analysis is to collect *financial literacy,* which involves applying financial knowledge to problem solving and translates the English term *financial literacy as "most apt"*(Leinert 2004, 30).

Five items only touch the two content areas "Handling money" as well as "Wealth building and retirement provision". Here, too, calculation tasks on interest rate and inflation accounting must be solved and assessments of investment forms must be given, but the tasks do not require solving problems. In addition to these assessments, another item is included in the target construct, which takes into account the number of insurance products that the respondents own. This number is seen as an appropriate indicator of the experience with complex financial products. However, although the conclusion of insurance products suggests raising awareness of risks, it seems at least worthy of discussion to what extent conclusions can be drawn about a reflected handling of financial information or the interests of financial service providers.

**4.1.3 Sparda Study 2011/2012**

This study is published in the series *Financial Behaviour in Hesse*(see Sparda-Bank 2011/2012, 1) and, according to the description, focuses on the economic knowledge and financial competence of young adults between the ages of 19 and 29 in Hesse. The aim is to identify Desiderata in this way for the design of financial education.

The questions raised on financial literacy are subdivided into the following questions:

      Social relations and influences on financial behaviour (6 questions)

      Economic knowledge and financial management (5 questions)

      Financial behaviour (5 questions)

      Financing (4 questions)

      Savings behaviour (2 questions)

      Pension and future (4 questions)

      Final assessment of financial competence (2 questions)

A total of nine questions address the handling of money, two questions relate to life risks (e.g. "What risks in life have you hedged for?"). Four costs include wealth creation and retirement provision (e.g. "What about your savings?"), three include dealing with loans (e.g. "Sometimes you want to finance something. Which [...] How many times have you used them?"). As part of the study, the study also explores sources of information on questions relating to money and finance ("Who do you talk to mainly about financial issues?").

The questions of the blocks outlined above focus on attitudes, motivation and references to finance-related themes -- "Which of the following descriptions in dealing with money is most likely to apply to you?") and thus involve more affective facets, concrete knowledge is not asked.

**4.1.4 Financial knowledge and financial planning expertise of Germans**

This survey of persons aged 18 and over, conducted in 2014, shows a *financial competence index,*which included answers from six questions (see Banking Association/Society for Consumer Research, 2014):

      Interest in the economy

      Self-assessment with regard to stock market knowledge

      Self-assessment of money and financial matters

      Time for financial matters

      Savings behaviour

      Dealing with your own pension

The Competence Index includes the handling of money as well as wealth build-up and retirement provision, some items cannot be assigned to any area (e.g. "How much are you interested in the economy?").

The study also asks for information on economic and financial issues and their personal relevance, but the results are not included in the index. Nor does the index take into account the security requested when dealing with technical terms such as "investment fund" or "legal deposit insurance", where no knowledge but a self-assessment is determined.

**4.1.5 Financial Literacy in Switzerland**

The fifth study considered here was published in 2008 and conducted by the Institute of Banking and Finance at the Zurich University of Applied Sciences Winterthur von Stäheli et al. (2008). Employees of two Swiss companies, the personal network of authors as well as employees and students of the Zurich University of Applied Sciences Winterthur were interviewed. The study included a "Self Evaluation Index" (SEI) and a "Financial Literacy Index" (FLI). While the SEI contains a self-assessment of the personal handling of money (two blocks of questions, each containing four and 13 items), the FLI is formed on the basis of ten knowledge questions. From a comparison of the two indices, the authors conclude that the respondents overestimate their knowledge on average (Stäheli et al. 2008, 48), with such a comparison implicitly postulating that the FLI is a resilient instrument. In addition, the questionnaire contains 17 items for hiring against economic and financial issues.

The key areas in the questionnaire from the perspective of households will be taken into account in the study, e.g. by requesting knowledge of investment forms, mortgages and retirement provision. The role of the state as a standard producer is also addressed – more clearly than in the studies *"Financial Literacy and Retirement Planning in Germany"*and *"Financial Illiteracy in Germany*" – by addressing the importance of an inflation-related reduction in purchasing power for different population groups.

While the FLI is more likely to ask respondents for assessments and knowledge on related topics (e.g. rejecting a direct debit), the SEI tends to contain affective aspects (e.g. "I am anxious in investments and finances"). The cars claim to take into account different levels of difficulty in the concept of tasks (see Stäheli et al. 2008, 27), which shows an indication of a competence level model.

**4.2  Overview of results**

First of all, the studies on the content areas of financial literacy are summarized. It records how many questions are allocated to the respective areas. Some questions come from more than one category, such as the item "Assume that you have recently purchased residential property. How much percent of your income do you think should be spent on maintenance and mortgage interest?" from the study by Stäheli et al. (2008, 72) on both asset building and how to handle loans and money. In this case, the question is assigned to all relevant categories.

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|  | | Financial Literacy and  Retirement Planning in Germany | Financial illiteracy in Germany | Sparda Study 2011/2012 - Financial Behaviour in Hesse | Financial knowledge and financial planning expertise of the Germans | Financial Literacy in Switzerland |
| Core areas from the perspective of households according to Kaminski et al. (2008, 36ff.) | Dealing with money | 2 | 1 | 9 | 1 | 3 |
| Dealing with life risks | - | 1 | 2 | - | 1 |
| Wealth building and retirement provision | 1 | 4 | 4 | 2 | 6 |
| Dealing with loans/loans | - | - | 3 | - | 2 |
| Extended target/content areas according to Kaminski and Friebel (2012, 40) | Procurement, processing and valuation of financial information as well as dealing with consulting and sales situations | - | - | 1 | -\* | -\* |
| Role of the state and the influence of international financial interdependencies | -\*\* | -\*\* | - | - | 1 |
| Functions and interests of financial service providers | - | - | - | - | - |
| *\* However, the topic of information sources on economic topics outside the indices established in the studies*  *\*\* The studies contain a calculation task for "inflation", where the term is explained in the test itself* | | | | | | |

*Table 2: Consideration of content areas of financial literacy*

If one first looks at the core areas of financial education, it is clear that within the listed studies on financial general education particular emphasis is placed on the areas of "handling money" as well as "wealth building and pension provision", they are addressed in all studies. In particular, arithmetic tasks are used to record the handling of money, and an assessment of different forms of investment is often requested with regard to asset formation.

The areas "Handling life risks" and "Handling loans/loans" are more widely included and are represented in only two studies. Questions relating to the perception of potential risks or the financing of real estate. The *Sparda study*, which is the only one covering all core areas from the point of view of private household data, should be highlighted.

The study of the extended content areas shows that these are only small. Although three studies deal with procurement for financial information, two of them do not involve this area in determining their target structure. Due to the fact that no index or similar is determined within the *Sparda study,*the question of information sources is automatically entered into the target construct.

The area of "the role of the state" can only be seen *in financial literacy in Switzerland.*Two other studies include a calculation of inflation without inquiring about inflation itself. More detailed questions concerning macroeconomic phenomena such as governance, the role of central banks and international financial interdependencies are not to be found in any of the studies. The functions and interests of financial service providers are also not included in the studies. The latter may also be due to the fact that this category is not conceived as independent, but as a partial concept, e.g. a reflected handling of money or a reflected pension provision, and thus implicitly incorporated into the study concept.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | Financial Literacy and Retirement Planning in Germany | Financial illiteracy in Germany | Sparda Study 2011/2012 - Financial Behaviour in Hesse | Financial knowledge and financial planning expertise  of the Germans | Financial Literacy in Switzerland |
| Requirements for a measurement of competence, oriented to Schürkmann/Shoes (2013, 78) | Problem solving | | Yes | No | No | No | Yes |
| Competence model | Competence structure (sub-competences) | No | No | No | No | No |
| Skills levels (taxonomy) | No | No | No | No | Yes |
| Various, even open, task formats | | No | No | No | No | No |
| Variable situations | | No | No | No | No | No |
| Affective features | | No | No | Yes | Yes | No |
| see Klieme/ Hartig (2008, 25) | Separate detection of cognitive/affective characteristics | | No | No | No | No | No |

*Table 3: Consideration of competence aspects in studies*

In principle, the criteria used in this analysis for a compensatory recording of financial literacy are met to a limited extent. Two studies address the application of specialist experts required by Schürkmann/Schuhen (2013, 77) by confronting respondents with life-threatening problems. The use of variable situations, which could be expressed, for example, by taking on different roles (consumers, private companies, etc.), cannot be found in any student. This is certainly due to the fact that the tasks used in the studies contain very few concrete situations overall, so a variation of situations seems difficult.

The studies do not contain any indications as to the extent to which considerations are being made on competence modelling. One reason for this may be the fact that not every study claims to carry out a holistic assessment of competences. Thus, each study has a different name of the underlying target construct (see Table 1). Nevertheless, a large part of the authors refer to the concept of competence in the description of the objective, but without specifying it. It follows that the underlying understanding of the characteristics that a person must have in order to be considered financially educated remains unclear. Such a discussion would be all the more important since the studies often formulate desiderates after an expansion of financial education measures, such as the increased thematicization of corresponding topics in schools.

In the studies, with a few exceptions, the multiple-choice format is used almost consistently, even for computational tasks. In addition to the collection of financial knowledge, they are also used for questions on affective aspects. More rarely, Likert scales are also used (e.g. *financial knowledge and financial planning competence of The Germans*and Financial *Literacy in Switzerland).* In the absence of significant interpretability, multiple-choice tasks are an adequate means for the determination of facts. In some cases, however, the answer options are not clearly delimitable from each other, for example, in *financial literacy in Switzerland,*when asked about high-risk products, the answer options such as "instalment payments" and "consumer credit". A clearer demarcation would be important here, since a consumer loan can in turn include an instalment payment. While the authors themselves classify a consumer credit as a risky one in their analysis, 36.7% of the respondents classify this product as high-risk (see Stäheli et al. 2008, 37). It would be interesting to compare the association of authors and respondents to this product in order to explain the differences. This example shows the boundaries of the multiple-choice format.

It is worth noting that two of the five studies examined contain affective characteristics *(Sparda study as well as financial knowledge*and *financial planning competence of the Germans).* However, these two studies are composed exclusively of affective components, although the respective title suggests that it is a matter of recording economic knowledge or financial competence. This also shows that no separation between affective and cognitive aspects is made within the target construct of the studies considered.

**5 Conclusion and outlook**

The systematization shows that the studies under consideration are based in part on similar, but also different approaches. While some explicitly name the term "financial literacy," others focus on financial behavior, financial literacy, and financial literacy as the target construct. The aim of the studies is to provide an overview of existing knowledge in the financial field. In the examination of the questions used, on the other hand, similarities become apparent: for example, the basic areas of the content "handling money" and "wealth building and pension provision" are included in all studies, while the other areas are rarely represented. In terms of content, therefore, there seems to be a rather homogeneous conception of what constitutes the target construct in terms of content (despite the different designation).

Although the concept of competence is used in almost all studies to characterise the target values, it is difficult to find any indication of which aspects are considered characteristic of the existence of such competence. Some surveys explicitly take into account the affective components required in the competence discussion, one of the studies also includes conceptual considerations on competence levels. Finally, it can be inferred from the items used that a large part of what the technical discussion considers appropriate in the context of competence measurements is taken into account to a small extent. This can lead to individual results having a conditional claim to validity, which does not have to pose a problem at first. However, when it comes to identifying and formulating desiderate learning progress and needs in e.g. pupils, such as desiderate, corresponding statements must be resilient. However, it is also undisputed that a whole-reason approach to competence assessment involves a high amount of resources (especially with regard to the variation of task formats), which is why the use of effort-reducing survey techniques is a relevant field of research.

A holistic, valid and resilient statement on the expression of competences in the field of financial literacy requires a critical discussion. In this context, reference should be made to recent work by, for example, Aprea/Wuttke (2016, 402), which provides a compensatory approach to modelling the decision-making process, implementation and control in the context of financial matters.

In addition to the German-language approaches shown here, the adaptivity of international studies may also have to be discussed. Characteristics of a financial literacy and the

design of relevant educational programmes tends to feed each other (in contrast to other areas such as natural sciences) from the respective economic and social environment of a country. Nevertheless, with regard to areas of content and competence from studies in other countries, for example, large intersections can be established (see Social and Enterprise Development Innovations (SEDI), 2004; Council for teaching Economic Education, 2013).

The task of economic education remains to clarify which aspects constitute the area of financial literacy and to what extent competence-oriented surveys are useful and possible.

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1. Castles et al. (2011, 23) use the term “financial education”, the reference to the content presented (Kaminski et al. 2008, 36) is based on the term “financial general education”. [↑](#footnote-ref-1)
2. Other current approaches in the German-speaking countries include the works of Aprea/Wuttke (2016), Erner et al. (2016), Schuhen/Schürkmann (2016), which were not freely available at the time of the release of this article [↑](#footnote-ref-2)