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Title **Validation arrangements for formally low-qualified staff in geriatric care: The Design-based Research project *KomBiA***

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Abstract Validation arrangements aim to increase the visibility and recognition of non-formal and informal learning. For geriatric care in Germany, such validation arrangements currently do not exist. The workplace learning of formally low-qualified nursing staff is therefore yet to be documented and certified. The Design-based Research project *KomBiA* was initiated in order to solve this practical problem. The interventions, which were developed, tested and evaluated, are based on the CEDEFOP model for the validation of non-formal and informal learning in Europe, which had to be adapted and modified according to the national and sectoral specifics of geriatric care in Germany. The project set-up focused on the development of an innovative solution to the problem that could gain support among all major stakeholders. Hence, the project included actors representing different political and practical interests related to competence validation. The collaborative development of the prototype was tested and evaluated in a two-cycle approach. On this basis, a viable model of validating non-formal and informal learning in the field was designed and corresponding design principles were deduced.

Keywords Design-based Research
validation arrangements
recognition of prior learning
workplace learning
geriatric care

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Validation arrangements for formally low-qualified staff in geriatric care: The Design-based Research project *KomBiA*

Bernd Gössling, Janika Grunau

1.0 Introduction

The European model for the validation of non-formal and informal learning (CEDEFOP, 2015, p. 41 f.) particularly targets those who are in a vulnerable situation. It is argued that 'disadvantaged groups' are likely to benefit from validation arrangements "since validation can increase their participation in lifelong learning and their access to the labour market" (Council of EU, 2012, p. 4). Research shows that older employees with few or no formal qualifications often belong to these vulnerable groups because educational disadvantages may accumulate throughout life (Dannefer, 2003). According to studies, female employees are particularly disadvantaged in this regard (Huber, 2009).

However, the predominantly female low-qualified staff working in geriatric care in Germany cannot benefit from validation arrangements for their prior learning at the workplace and therefore cannot obtain full vocational qualification. This is in contrast to other European countries such as France (Abriac, 2017) and Switzerland (SBFI, 2018) and in contrast to other professional sectors in Germany such as the craft trade and industrial sectors ('Externenprüfung') (Rehbold & Oehme, 2017; Beinke et al., 2011) as well as in the case of academic programmes (KMK, 2008), which may also lead to a full qualification in care. The *KomBiA* project was initiated to adapt and modify the CEDEFOP model to the national and sectoral peculiarities of geriatric care in Germany in order to solve this problem. With this purpose, the process of developing and testing new validation arrangements viable in this context followed a Design-based Research approach (Euler 2014, p. 18) with two cycles of design, evaluation and re-design.

This paper aims to review the research and development work conducted within the *KomBiA* project as a case study for Design-based Research (DBR). The main objective of *KomBiA* was to generate tested validation arrangements that remove barriers for the participation of older employees and at the same time ensure the qualification standards of formal training and education systems, thus allowing to possibly obtain an approved degree that includes the recognition of prior learning at the workplace. Since this requires the support of all relevant stakeholders in the field, cooperation among all project participants was critical (Grunau & Gössling, 2020).

After the problem addressed by *KomBiA* is specified (section 2) and the realisation of the DBR approach is explained (section 3), a detailed

description of the development and refinement of the *KomBiA* prototype follows (section 4). On this basis, the general design principles for validation arrangements are deduced (section 5) and final conclusions (section 6) are drawn.

2.0 Problem specification

In order to facilitate the analysis of the initial situation and the problem specification, we will firstly describe the field of geriatric nursing in Germany with its distinctive characteristics and current challenges. Secondly, we refer to the latest European and national developments of validation and recognition of non-formal and informal learning. Linking the two discussion threads, we thirdly analyse how the validation of prior learning would be a potential solution to face skills shortages by addressing the low-qualified nursing staff in geriatric care as a special target group that might increase their participation in lifelong learning if innovative solutions are provided.

2.1 Field analysis: Skills shortages in geriatric care in Germany

In Germany, there is a serious, emerging lack of skilled workers in the field of geriatric care (Federal Labour Office, 2020, p. 16). For years, tens of thousands of jobs for geriatric nurses have remained vacant (throughout 2019, there were on average 23,500 vacancies in the geriatric care job market, Federal Labour Office 2019, p. 10), while at the same time the demand for skilled labour in this sector is expected to rise significantly in the years to come. The number of qualified nurses needed to meet demand is projected to rise by more than 40 % between 2015 and 2035 (Statistics of IW, 2018, p. 34). Given these statistics, the number of newly qualified geriatric care workers entering the job market is far too low and the contemporary qualification system is insufficient to meet rising demands. In addition, sector-specific problems such as low retention rates (Rauner et al., 2017), high levels of part-time employment (Stagge, 2016, pp. 75 f.), a high sick leave rate (Badura et al., 2018) and an early retirement age (Hasselhorn et al., 2005) further increase demands for newly qualified staff. To meet demand, one employer proposal even involved reducing the quota of qualified staff from 50 % to 40 % in one federal state (e. g. Ministerium für Soziales und Integration Baden-Württemberg, 2015). This piece of legislation is understood to pose a considerable risk for the quality of geriatric care and for the path towards increased professionalization in the geriatric care sector.

Current strategies to tackle skill shortages include efforts focused on increasing the number of (predominantly young) students at nursing schools and recruiting skilled nurses from abroad (Gössling & Schulte-Hemming, 2018, pp. 8 f.). None of these strategies have proved effective enough, yet. Furthermore, but beyond the scope of this case study, additional strategies, which have not been adopted so far, include making work in geriatric care more attractive through better

staffing or by filling vacant positions with offers of better wages or increased social status of the care profession. However, to date it has not been considered to further train the experienced, but formally unskilled or low-skilled older assistants working in geriatric care based on the recognition of their prior learning experience.

2.2 Validation of recognition of non-formal and informal learning

The relevance of lifelong learning is widely acknowledged. Due to global megatrends such as digitalisation, demographic change and global migration, the world of work is currently undergoing dynamic changes (Naisbitt, 1984; Sloane, Twardy & Buschfeld, 2004, pp. 198 ff., Dehnbostel 2007, pp. 232 ff.). As a consequence, individuals are required to adjust continuously to both present and future challenges at work and in private life. The Commission of the European Communities (2000) highlighted in its Memorandum on Lifelong Learning that validation and recognition of prior learning has to be a political issue of highest priority. In addition to "formal learning", the terms "non-formal learning" and "informal learning" were emphasized. According to the European Commission, "non-formal learning" refers to learning "alongside the mainstream systems of education and training and does not typically lead to formalised certificates. Non-formal learning may be provided in the workplace and through the activities of civil society organisations and groups (such as in youth organisations, trade unions and political parties)" (ibid). "Informal learning" describes a "natural accompaniment to everyday life. Unlike formal and non-formal learning, informal learning is not necessarily intentional learning, and so may well not be recognised even by individuals themselves as contributing to their knowledge and skills" (ibid). Individuals who show below-average participation rates in formal VET and other organised forms of lifelong learning would benefit from validation arrangements. This should be accomplished by increasing the individuals' awareness of their actual skills and competences, by creating new career prospects, by making the results of informal and non-formal learning visible and by mapping out specific needs for future learning (CEDEFOP, 2015, pp. 41 f.). To realize these goals, a comprehensive European model of validation was published including numerous guidelines and options available for implementing validation procedures in various contexts. The validation process in the European model comprises the four phases of "Identification", "Documentation", "Assessment" and "Certification" of non-formal and informal learning (Council of the European Union, 2012, p. 3; CEDEFOP, 2015, pp. 14 ff.).

Many countries have adopted the European model and implemented national validation systems. In Germany, however, the validation of prior learning is lagging behind other European countries (Gössling, 2016, p. 135; Gaylor et al., 2015, p. 67; Seidel et al., 2008, p. 9). Only in 2013 the German government set the development and testing of validation systems as a political target within the government's coalition agreement (Bundesregierung, 2013, p. 32). This decision

stemmed from the Council Recommendation for all European Union member states to "have in place, no later than 2018, [...] arrangements for the validation of non-formal and informal learning" (Council of the European Union, 2012). Hence, a strategic and regulative perspective for the validation of prior learning in informal and non-formal contexts has already been commenced.

Politically and economically, validation arrangements are seen as a strategy to counteract a lack of qualified employees in specific sectors and increase participation in lifelong learning particularly for disadvantaged groups such as older workers with low formal qualification (CEDEFOP, 2015, pp. 19, 41). The rationale for this is twofold: First, vocational skills and competences, which are acquired informally at or near the workplace, become more visible and can be used more intentionally when they are formally certified through validation arrangements. Second, recognizing vocational learning that already took place by awarding partial qualification may motivate those who were lacking formal qualification to resume formal and non-formal training targeting full qualification and/or advanced training.

2.3 Target group: Geriatric nursing staff with low formal qualification and restricted access to lifelong learning

A large percentage of the nursing staff currently consists of formally unskilled or low-qualified nursing assistants in the latter stages of their working lives. For many of them, working in geriatric care is their second or third career. In many cases, the employees came to geriatric nursing due to opportunistic and pragmatic reasons concerning their family and financial situation at that time. Sometimes, they have finished initial VET in a different profession (Gössling & Schulte-Hemming, 2018, pp. 7-9). However, due to the nature of geriatric care work, staff allocation and experience, they have often developed professional skills and competences and regularly perform professional tasks that would legally require a fully qualified registered geriatric nurse (Blass, 2012, p. 432). This group of formally unskilled or low-qualified nursing staff is, in fact, informally qualified on a higher level than their formal degrees attest.

This somehow paradox situation of having nursing staff who are only formally unskilled is problematic for all parties involved. From the point of view of the geriatric care facilities, the group of experienced assistants cannot be included in the group of qualified staff required to meet the legal 50% quota of registered nurses. All tasks that must be done by a registered nurse cannot be documented in the care record if performed by staff lacking full formal qualification. From the point of view of the nursing staff, they lack formal qualification and thus are not paid the same wages as qualified staff, even if they are completing the same tasks. They are also excluded from advanced training in geriatric care, which in many cases requires a formal degree as a registered nurse, hence posing barriers for them to participate in

formal advanced education. From the point of view of the person being cared for, having a nurse with certification means additional quality assurance for the service provided.

These issues could be overcome if those who enter geriatric care later in life went through regular training and assessment just as many of the young school graduates at nursing schools do. However, older employees with no or only limited formal qualifications share a common set of characteristics, which distinguish them from other groups. Among these characteristics are extensive, yet heterogeneous individual prior learning experiences (Schmidt-Hertha & Thalhammer, 2015), sometimes negative experiences with schooling and formal examinations (Fouarge, Schils & de Grip, 2013) as well as restrictions due to their individual living situations (Findsen & Formosa, 2011). These characteristics combined with structural and legal restrictions to access training that suits their needs may serve as one explanation for the generally low participation rate of older employees in formal (further) education (Bilger & Strauß, 2018; Fitzenberger & Mühler, 2011). While the cognitive abilities to learn may differ among age groups, according to cognitive ageing research, healthy employees are essentially unrestricted in their learning capabilities until the age of 65 (Baltes, Lindenberger & Staudinger, 2006). However, studies have shown that formal training is less effective in increasing the relative productivity of older employees compared to younger age groups (Göbel & Zwick, 2009). Taking into consideration their learning capabilities, it is often argued that this limited effectiveness is caused by a conflict between the training scheme and the demands and specifications of older employees (Zwick, 2011). If that is true, the low number of individuals entering nursing school after a transition into geriatric care later in life does not come as a surprise.

Validation arrangements of prior learning that lead to a full vocational qualification are currently non-existent for the target group described above in Germany. It was envisioned as the main goal of the *KomBiA* project to design a prototype of validation arrangements by considering the requirements of all stakeholders involved to ensure that it gains the necessary support that it was previously lacking (Gaylor et al., 2015, pp. 35 ff.). This approach should achieve a dual purpose, namely ensuring the qualification standards of the formal system while at the same time removing barriers for older employees with no or only limited formal qualifications to possibly obtain a recognized degree qualification.

Validation arrangements that utilize and activate the sometimes vast vocational learning of low-qualified staff over the years may be able to offer an alternative progression route to a full degree as a certified nurse for those who were previously participating in further vocational education to a low degree. In the field of geriatric care in Germany this would be an innovation providing new opportunities to participate in lifelong learning for some individuals from disadvantaged groups.

3.0 Realisation of the Design-based Research approach in the *KomBiA* project

KomBiA stands for 'validating and recording skills and competences for older employees' (German: ***K**ompetenz**bi**lanzierung für ältere **A**rbeitnehmerinnen und Arbeitnehmer*)'. The project ran from 2015-2018 and was financed by the German Federal Ministry for Education and Research (BMBF). The goal of *KomBiA* was to develop a prototype of a validation arrangement for formally low-qualified nursing staff who have worked more than 4.5 years in geriatric care (full-time equivalent) and developed professional skills and competences at their workplace. The innovative aspect of this validation arrangement is that it establishes an alternative pathway to an equivalent certification as a formally certified geriatric nurse by recognizing what has already been learnt on the job. In order to gain critical support of all relevant groups for this innovation, the project drew on constant stakeholder involvement by engaging them in all phases of the circular DBR process. The project concept also intends future transfer activities hence expanding the use of the newly designed validation model beyond the DBR field where the pilot tests took place.

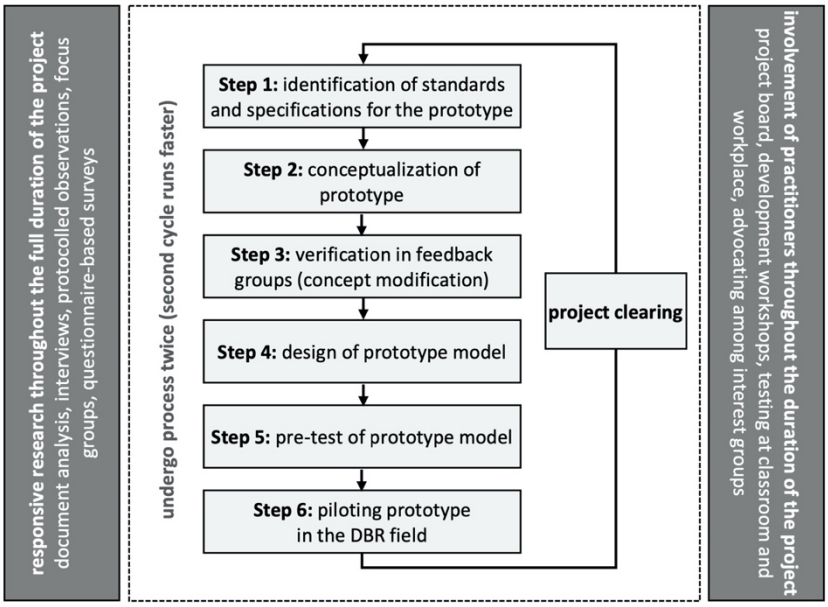

Figure 1: KomBiA project cycles

For this reason, the *KomBiA* project was based on a Design-based Research approach with two cycles of design, evaluation and re-design (Euler 2014, p. 18). The evaluation took place in the form of responsive research drawing on data collected by document analysis, interviews, protocolled observations, focus groups and questionnaire-based surveys (for the working plan, see Figure 1).

The whole project was integrated, meaning that the responsive research and the subsequent evaluation it produced was seen as part of the development work. During the project lifetime, the DBR

researchers met the practitioners regularly to discuss the progress and necessary refinements. This included employer (= geriatric care facilities) representatives, teachers at geriatric nursing schools, trade union representatives and the German Nurses Association (DBfK) as well as motivated and experienced, usually older, low-qualified nursing staff. By contributing their respective perspectives and carrying out their (corporate) functions, it was possible to generate a common understanding of what the objectives and core principles of the validation arrangements should be (for further details on the inherent cooperation practices, Grunau & Gössling, 2020). From the perspective of the DBR researchers, the evaluation measures (document analysis, surveys etc.) were not only targeted at improving the practical quality of the validation arrangement, but also at generating knowledge about this intervention which lead to the development of design principles (section 5).

4.0 Development and refinement of the validation prototype

The initial conceptualization of the developed validation arrangements was based on the European validation model and the prerequisites of the DBR field (see section 4.1). This chapter focuses on the description of the final prototype that resulted from the refinement which took place during the two evaluation and design cycles (section 4.2).

4.1 Requirements and references

The initial conceptualization of the validation prototype was guided by the structure proposed in the European validation model (CEDEFOP, 2015). According to this model, validation arrangements should enable individuals to obtain certification and recognition of their informal and non-formal learning; hence validation can be seen as a civil right and is always voluntary from the perspective of the individual. Furthermore, the validation process should guarantee the candidates' privacy and rights, be fair, transparent and combined with mechanisms of quality assurance. It is also necessary for all stakeholders involved to support validation in accordance with their authority and responsibilities. The CEDEFOP model is based on the following four phases, which are applicable for the development of national validation systems (ibid., pp. 15 ff.):

- identification,
- documentation,
- assessment and
- certification.

The national equivalents should be based on links to national qualification systems and frameworks. This includes the possibility to certify full qualifications and modules in appropriate instances. The model should link informal and formal learning, and thus the summative validation should be based on standards, similar and/or equivalent to

those used for formal education and training. Therefore, assessment methods, which are objective, valid, reliable, fair, include cognitive levels and are fit for the purpose of this assessment, are required. Tools and methods used for assessing non-formal and informal learning results will therefore often be based on or similar to those used in formal education. However, such tools and methods need to be adapted to the particular needs of the individual. This will usually require a mix of methods. Last but not least, the validation should be conducted by qualified professionals.

These guidelines were applied to the field of geriatric care in Germany in the development of the *KomBiA* model. This occupational field and its respective vocational training are unique in Germany with regard to political, legal and organisational aspects (for further information, see Bals, 1993; Grunau & Bals, 2015, pp. 473 ff.). Three principles appeared as significantly relevant in the development process with the stakeholders. They can be regarded as a substantial common ground for the development of a validation model:

- **Vocational principle:** A distinctive marker of vocational education in Germany is the principle of holistic and standardized vocational profiles ('Berufsprinzip', Deißinger, 1998). This also applies to the field of geriatric nursing. Hence, formal vocational education and training (VET) and the final exam in geriatric nursing serve as validation standards. Therefore, the *KomBiA* accreditation process only leads to full and not partial certification. This is in contrast to the European model, where partial qualifications can be certified as well.
- **Legally binding:** The geriatric care sector is not subject to 'free market forces' in the labour market. It is a state-regulated field. Qualifications are legally binding and a prerequisite to perform specific occupational tasks (cf. Bals, 1993).
- **Professionalisation:** The principle of standardized vocational profiles is linked to the concept of professionalization. However, efforts to increase professionalization are currently focusing above all on academization measures (Friese, 2017) and not on recognition of informal and non-formal learning.

Table 1: Comparison of formal VET programmes and the KomBiA validation model (based on and translated from Gössling & Schulte-Hemming, 2018, p. 14)

	regular VET programme	**shortened VET programme**	***KomBiA* validation model**
type of qualification	regular school-based VET qualification work-based learning guided by the school		recognition of work-based learning, with modular catch-up qualifications if necessary

type of certificate	VET certificate (formal state certificate as a registered geriatric nurse)		equivalent certificate as the formal qualification
duration of programme	3 years full-time	2 - 2.5 years full-time	approximately 1 year (part-time option)
typical age of participants	< 25 years	statistics not available	typically > 45 years (minimum age of participation: > 25 years)
entry requirements	secondary school certificate after 10 years (*Realschulabschluss*) or equivalent language skills necessary for work in geriatric nursing		
			age > 25 years, work experience > 4.5 years full-time experience in geriatric nursing (or equivalent)
status of participants	student (apprentice)		regular employee (generally part-time)
remuneration	monthly training allowance between €1,000 and €1,200 (for full-time students)		regular remuneration as nursing staff (usually in part-time and at a higher hourly rate as the students)
type of assessment	written, oral and practical examination of 230 minutes		formative assessment accompanying the whole validation process and a summative, competence-based assessment in phase 5 of the validation process taking place at the workplace for 1 to 2 days
process owners of the ascertainment of professional skills and competences	authorized representative of the competent authority/chamber awarding the certificate, usually a head of a school for geriatric nursing together with at least three additional teachers according to § 6 *AltPflAPrV* (German regulation for the training and examination of geriatric nurses)		
	... as members of the examination board		... as members of the validation committee
legal basis	laws regulating the profession of geriatric nursing (*Altenpflegegesetz*) and the regulation for vocational education and examination (*Ausbildungs- und Prüfungsverordnung*)		
			reform clause (*AltPflG*, §4 (6))

In order to adhere to the principle of holistic professional profiles and to prevent deprofessionalization tendencies, the *KomBiA* validation programme can be seen as an alternative pathway towards formal certification. The table above shows legal and institutional aspects of the KomBiA validation arrangement compared to the regular and the shortened VET programme (see Table 1).

4.2 The validation prototype

The analysis of the context and the relation of the *KomBiA* validation arrangements compared to formal vocational training was a first step in the development of a prototype. The second step was to adapt the CEDEFOP model with its four phases as described above to the field of geriatric nursing. The following adaptations were made:

- As Phase 1 and 2, 'information' and 'initial counselling' were added in order to intensify the introduction to the validation arrangement and thereby support potential participants to find entry to the process acknowledging that the target group tends to be reluctant towards formal forms of education and training (see field analysis);
- merger of identification and documentation phase in the CEDEFOP model through a multi-perspective web-based tool (Kompetenz-Check);
- a new phase of organised learning modules in a supplementary model aiming at 'full qualification' and supporting the closure of skills and competence gaps. These modules, however, are not qualification units on their own and cannot be certified separately from the whole qualification.

Following these modifications, the prototype consists of the following 6 phases (Gössling & Schulte-Hemming, 2018, p. 21):

1. **Information:** The employer informs potential candidates about the opportunity to validate and recognize learning results acquired at the workplace. Typically, this would be a direct supervisor or a Human Resource representative, who explains the validation procedures and provides information on the personal and social resources necessary for certification. By addressing potential candidates in this extended information phase, the formally low- or unqualified nursing staff can find entry to learning activities, in which they are typically underrepresented. If interested, the employees who would fulfill the entry requirements receive a guidance counselling voucher in order to proceed to the next phase.
2. **Initial counselling:** *KomBiA* identified the nursing schools as a key player not only for formal education but also for validation procedures. It was therefore decided to train teachers to become guidance counsellors for the validation process. Continuing counselling throughout the whole process is a critical success factor. As many members of the potential target group

associate formal learning with negative memories and feelings, individual support in the form of guidance counselling is meant to attract and motivate potential participants. In this phase, details beyond the employers' initial information are shared. In addition, it is outlined which personal, social and corporate resources are available. At the end of this phase, candidates receive written confirmation of the counselling process. The objective of this phase is to enable the candidate to make a well-informed decision whether or not to continue with the validation process.

3. **Identification and documentation:** Upon entering this phase, the candidates become actual participants. In contrast to the CEDEFOP model, which separates identification and documentation, the *KomBiA* model views both as one step since the separation is seen as something analytical, not practical. In fact, a process of guided documentation helps to identify which learning results are already present. The web-based *KomBiA* tool 'Kompetenz-Check' was developed based on this principle. This tool allows participants and selected others to check a list of tasks in geriatric care and to indicate their professional level. One key feature of the 'Kompetenz-Check' is to combine self-reported data (e.g. through a CV and/or a portfolio of (non-)formal certificates and job references) with external reports from the participant's direct superior and optionally from a colleague. The process of identification and documentation of learning through the 'Kompetenz-Check' is supported by a teacher from the nursing school. At the end of this phase and based on the professional skills and competences documented in the tool, the counsellor will use a counselling session to recommend either a) to directly continue with step 5: Assessment, b) to continue with step 4: Modular qualification in order to fill in skill gaps or c) to exit the *KomBiA* validation process and possibly join a regular VET programme at the school if this approach is more suitable due to a lack of non-formal and informal learning.
4. **Modular qualification:** Following the counsellor's recommendation and the decision of the participant to remedy skills and competence gaps, the employer cooperates with school teachers to set up an individual development plan. According to the individual needs, school-based learning, e-learning modules or work-based learning activities are usually combined to form a tailored programme. The learning is supervised and evaluated on a regular basis. Finally, a *KomBiA* 'Kompetenz-Check' is conducted. If this tool confirms that the qualification gaps have been overcome, the employee continues with phase 5: Assessment.
5. **Assessment:** The valid assessment of professional skills and competences in geriatric care takes place where those are needed: at the workplace. It includes the demonstration of care planning, performance of care services including nursing

diagnosis, and a reflection of these actions referring to professional standards. The oral reflection also draws on learning outcomes which have become apparent in Phases 3 and 4. The whole assessment is conducted according to the same standards as the formal state certification as a registered geriatric nurse at the end of school-based training. However, the assessors are trained not to conduct an examination that focuses on school knowledge, but rather a competence-based assessment. Therefore, an assessment board consisting of representatives from the school, the employer and the authority/chamber responsible for awarding the certificate is established. In case the assessment board rejects the candidate's application for an equivalency certificate, the phase may be repeated.

6. **Certification:** If the participant's' skills and competences prove to be equivalent to the standard of the formal state examination, the authority issues a certificate allowing the participant to bear the professional title of a registered geriatric nurse.

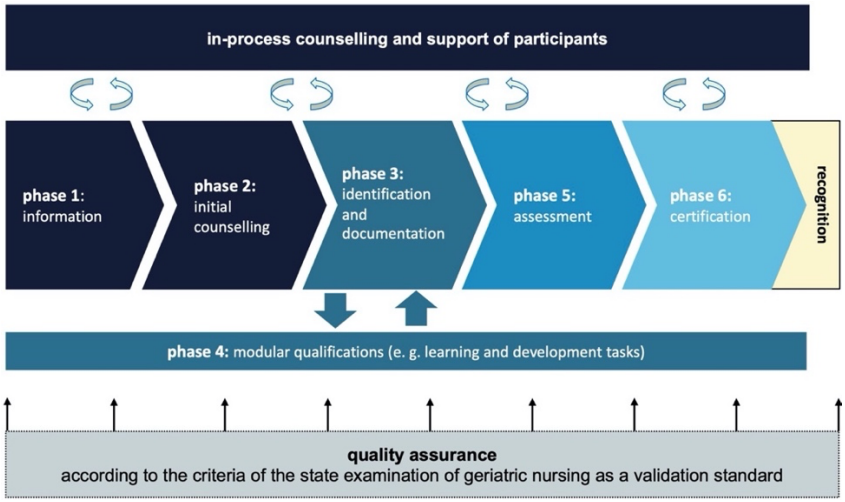

Figure 2: KomBiA validation model for geriatric care (based on and translated from Gössling & Schulte-Hemming, 2018, p. 20)

Recognition is not a phase in itself, because recognition cannot be 'produced' by a validation arrangement but is rather intended as an effect of the process. Recognition is something that the (former) participants receive when their certified competences are accepted and put to use by gatekeepers in the job market and the educational system. That means that it is intended for participants who have finished the validation process to have the opportunity to work and be paid in the role of registered nurses and furthermore gain access to advanced vocational training.

In accordance with the CEDEFOP approach, the *KomBiA* model is based on the principle that the individual is at the centre of the process (CEDEFOP, 2015, pp. 19 ff.). This means that the validation serves to empower individuals by making their knowledge, skills and abilities visible and, when applicable, enabling individuals to acquire formal

qualifications. It can be seen as a tool to improve the situation of individuals at risk of becoming disadvantaged: older nursing staff in geriatric care with low formal qualification, while at the same time possibly contributing to tackle skills and staff shortages.

5.0 Design principles

The responsive design of the project has led to several rounds of refinements, pre-tests, re-designs and subsequently to a new validation model (prototype). New and more concrete design principles have thus evolved in accordance:

- In the formalized context of a regulated profession, any validation process aiming at formal recognition must be based on the same assessment standard as the formal qualification (in this case: state certification as a registered geriatric care nurse).
- The tools and methods applied in the assessment phase do not have to be equal to the assessment tools used in the formal examination. However, tools and methods must be viewed as credible by the stakeholders of the formal system when ascertaining individuals' prior learning.
- In a field preferring strong vocational profiles, care routines are supposed to be dealt with holistically. This leads to a distinction between work allocated to formally low-qualified nursing staff and work allocated to fully qualified geriatric nurses and thus a rejection of modules certifying skills and competences between the level of fully and low-skilled staff. However, this distinction within the qualification system is not fully reflected in the organisation of the actual work practices, where the borders blur between working tasks requiring a registered nurse and tasks that can be performed by a formally un- or low-qualified nursing staff.
- The distinguished vocational profile of fully qualified geriatric nurses requires the implementation of a phase with modular qualifications which are not to be certified on their own, but must meet individual learning gaps within the full profile. This phase is a further extension of the initial CEDEFOP model.
- Stakeholders must be activated; in particular employers must play a significantly more important role in validation processes than in school-based formal training for geriatric nursing because they raise awareness for this model among the (potential) target group of formally low-skilled and unskilled nursing staff members and support their participation in the validation process on the job, near the job and off the job.
- A web-based tool ('Kompetenz-Check') is able to reveal skills and competences for which no evidence is available because these learning results were acquired outside the formal educational system. The task-based approach that was piloted

proved to be useful for both self-reports by the participants and external reports by care supervisors and others.

- In training workshops, teachers experienced in formal examinations are able to develop a tool mix based on portfolios, self- and external reports on skills and competences, content analysis of care records, simulation exercises and reflexive discussions, waiving paper and pencil tests to credibly ascertain the professional learning of those participating in the validation process in a new way.

These design principles lead to the development of an improved prototype and can also be seen as a contribution to both the lifelong learning and to the DBR discussion.

6.0 Conclusions

The review of the DBR project *KomBiA* showed how the generic CEDEFOP model for the validation of prior learning can be adapted to the field of geriatric care in Germany. In this field, validation arrangements are an innovation. For the adaptation, the model had to be essentially restructured. Hence, the circular design and evaluation process led to a new model which was tested as a prototype. Refinements of the original design were based on results gained through responsive research. Fruitful formative evaluation could in particular be drawn from focus group discussions and interviews with teachers, employers and participants as well as observations of conversations and assessments with low-qualified nursing staff. Thereby the multiple perspectives of the practitioners and their insights into professional learning and validation arrangements could be integrated into the development activities. Due to lacking recognition of the validation results, a profound summative evaluation could not yet be conducted. Additionally, the prototype's transferability and further acceptance could not be tested within the framework of the *KomBiA* project. Consequently, the identification of further development work and raising awareness in the field are therefore among the central results achieved. Awareness was also raised among health care authorities, which led to the initiation and funding of the follow-up project *VALINDA*[1] which can count on formal recognition of the validation certificates. Within the *Valinda* project, the validation model will be tested at several geriatric care facilities in collaboration with teachers from geriatric nursing schools. Even though *KomBiA* concludes with work in progress, its results are useful for multiple purposes. Researchers benefit from insights into an implementation example of a DBR project in a challenging environment. The general design principles may also contribute to the generation of knowledge about the realisation of new validation arrangements. Practitioners as well as employers (potentially attracting new qualified staff), teachers (taking a new educational role in validation processes) and formally low-qualified nursing staff (gaining recognition for workplace learning and attractive opportunities for further professional education) all benefit from the project's outcome.

[1] VALINDA stands for „validation arrangements and post-qualification in geriatric care in North Rhine-Westphalia" (German: **Va**-**li**dierungsverfahren und **N**ach-qualifizierung in **d**er **A**ltenpflege in Nordrhein-Westfalen). A general description of the new project can be found on https://www.valinda.de (12.10.2020).

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