

The Cobra Effect in TVET Policy Making: A Macro-Micro-Macro-Level Analysis of Exemplary Cases From Germany

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Abstract

Context: Unlike education policy for general education, technical and vocational education and training (TVET) policy often focuses on societal needs, ignoring the attitudes and subsequent behaviors of learners. As a result, the impact of TVET policies is not what was expected and sometimes even counterproductive. Starting from this, we use macro-micro-macro-level analysis inspired by Coleman's boat theorem to reflect on three exemplary cases of German TVET policy. These TVET policies have in common that they aim to reduce skills shortages in certain occupations.

Approach: Our paper illustrates the value of macro-micro-macro-level analysis when looking at TVET policies and programs. To this end, we look at three exemplary cases. All the cases represent TVET policies and programs aimed at reducing skills shortages, a common issue for most countries in the world. One way of addressing those shortages are TVET policies of which we present here: (1) Increasing the permeability between TVET and higher education, (2) attracting workers for post-qualification and (3) directed career counseling for refugees. Using Coleman's boat theorem, we analyze the cases in terms of whether

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the policy strategies address the skills shortage adequately. We then compare the cases with each other to draw general conclusions regarding the connection of macro- and micro-level within policy making in TVET.

Findings: A common finding among all three case studies is that the investigated policies and programs do not consider possible deviant considerations of actors at the micro-level adequately. Consequently, the actor's behaviors on the micro-level can contradict the intention of the policy.

Conclusion: We conclude that it is essential to take micro-level perspectives into account when developing political strategies for TVET. Therefore, TVET policies and programs should be developed from a more subject-oriented perspective and as a second step include societal needs. Furthermore, TVET policies and programs have to be accomplished by reforms changing work conditions for the better. Only then, there is a chance for convergence of micro-level decisions and macro-level outcomes.

Keywords: Skills Shortage, Technical and Vocational Education and Training, TVET, Technical and Vocational Education and Training Policy, Case Study, Coleman's Boat

1 The Missing Link or the Cobra Effect

The German economist Horst Siebert introduced the so-called cobra effect as an anecdotal illustration of side effects of public policies: Set in India under British rule, the British government introduced a lump sum for every cobra head turned-in as to fight the cobra plague in old Delhi. As result, cobras were bred to benefit from the lump sum. When the policy was withdrawn, all the then bred cobras were set free leading to the highest ever number of cobras in and around Delhi (cf. Siebert, 2001). This rather anecdotal evidence, in its core, illustrates a missing link between the policy and its intentions on the macro-level and the actual behaviors of people on the micro-level. While this phenomenon is not new it has so far not been discussed in technical and vocational education and training (TVET) policy – we will do so by using Coleman's (2000) model of macro-micro-macro-level relations.

As an exemplary case, we analyze recent German TVET policies addressing skills shortages. In particular, the craft and healthcare sectors are concerned with a lack of qualified workers (BMWI, 2021): In crafts, there were 60,000 vacant positions in 2020 – an increase of 50% since 2010 (KOFA, 2021). Regarding nursing, it is assumed that more than 100,000 full-time equivalents will be required to cover the care supply in 2030 (Rothgang et al., 2020; Schwinger et al., 2019). Besides other strategies, also TVET policies and programs were implemented to close those gaps, for example, by (1) increasing the permeability between TVET and higher education (see also Schmees & Grunau, 2020), (2) attracting workers for

post-qualification, or (3) recruiting people via directed career counselling for refugees. Our analysis reveals that the individuals on the micro-level behave differently than assumed. Accordingly, this study finds that the expected effect of reducing skills shortage is not achieved in any of the three case studies.

In the following section, the underlying theory is presented alongside some methodological remarks. Afterwards, the case studies are presented. Finally, we aggregate our findings and suggest an adapted version of Coleman's model that, in our view, is particularly suited for TVET research.

2 Coleman's Boat: Theory and Methodology

Coleman's boat model contributes to explain an effect on the macro-level by a cause on the micro-level. Therefore, it is suitable to deal with a fundamental question of the social sciences: The relationship between society and its agents. The boat model, which Coleman himself calls 'meta theory' implies three propositions. First, in order to explain the cause and effect on the macro-level, the macro-level cause impacts the dispositions of micro-level agents. The second proposition is entirely located on the micro-level and connects the micro-level agent's disposition with their action. Third, the individual micro-level action is reconnected to the macro-level. The proposition here is that the aggregated action of all the agents on the micro-level leads to the macro-level effect (Fig. 1; Coleman, 2000).

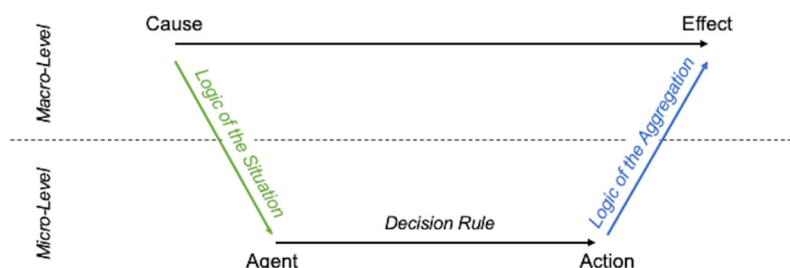


Figure 1: The Macro-Micro-Macro Analysis According to Coleman's Boat (adapted from Coleman, 2000)

As a meta-analysis, the three propositions within the boat model must be further enriched by action theories (Coleman, 2000). However, the boat model can also clarify the necessary steps that must be valid so that a given assumption is true. Coleman himself used the boat model to reflect upon Weber's claim that Calvinism was responsible for the emergence of capitalism (Coleman, 2000). In his further thoughts on the boat model, Ylikoski (2016) suggests using it

as a heuristic in order to point out crucial elements, articulating the structural assumptions of explanations or accounting for the explanatory tasks of social sciences. Therefore, in our paper, Coleman's boat functions as a tool for critically assessing implicit assumptions made by policy actors in Germany regarding the reduction of skill shortage. The model serves as a tool to examine if causal connections on the macro-level in TVET policymaking can be substantiated through our analysis, which incorporates the micro-level. As for the case of TVET, it is worth mentioning that Coleman himself applied the boat model to a TVET policy aiming to reduce black youth unemployment in the United States (Coleman, 1987, 2000).

Our case studies are based on three previously published qualitative research studies, (1) on academic orientation (Grunau, 2017), (2) further qualification in the care sector (Grunau & Sachse, 2020), and (3) the integration of refugees into the job market (Migura & Schmees, 2023; for a more comprehensive analysis, see Wehking, 2020). For the paper, we conducted a secondary analysis of these studies by re-interpreting the studies according to the methodology of the boat model. The analyses are based on qualitative data from the authors' reference projects and therefore exploratory in nature. All three cases are based on interview surveys with biographical-narrative components. In addition to narratives and reflections on the past and present, future developments were also anticipated. As for the analyses, the three propositions were spelled out for each case. For the macro-level assumptions about the causality between TVET reforms and their assumed impact to be true, all three propositions must prove to be accurate. The three propositions are then subject to a critical examination by questioning the homogeneity of the group of agents, which are subsequently divided into empirically based types. To generate the types for each case, we used the original studies and in addition supporting literature. The analyses of these types of agents are then used to question the given policy's expected macro-level effect. Therefore, agents' mindsets and goals are discussed, with a given policy's projected outcome compared to our analysis.

3 Case Studies

This section presents three case studies according to the same structure: After presenting background information, we develop a conception of each case's actors on the micro-level. Finally, we present findings that indicate a discrepancy between the expected effect of the TVET program or policy and the outcome according to our analysis.

3.1 Permeability Between Vocational and Higher Education¹

In 2014, Julian Nida-Rümelin warned against an 'academization mania' in Germany. This conclusion was based on an analysis that, on the one hand, emphasized the economic necessity of a functioning TVET system and, on the other hand, rationalized a decision for TVET: Instead of choosing the congested academic path, it would be advisable for adolescents and young adults to opt for TVET, also from a financial point of view (Nida-Rümelin, 2014). Despite these and other warnings, the attractiveness of higher education persists (Autorengruppe Bildungsberichterstattung, 2018). Developments in Germany can thus be observed globally as part of a phenomenon referred to as 'massification of higher education' (Altbach, 2017, p. 1) or 'universalization of higher education' (Trow, 2007). Even if the absolute number of students remains identical (for demographic reasons), there is much to suggest that the ratio of students in higher education will continue to rise in Germany (Euler, 2017).

Against this background, the attractiveness of TVET is subject of discussion among politicians and scientists, and possibilities for increasing its attractiveness are central within these discussions. Examples of this attention include the 'Year of Vocational Education and Training' as a public event, the restructuring of training due to new requirements, as well as the increase in training allowances. Furthermore, the upgrading of TVET through increased access to higher education is discussed in the context of increasing attractiveness (e.g., BIBB, 2014).

It is implicitly assumed that formally 'upgrading' TVET qualifications by granting higher education access options increases the attractiveness of TVET for teenagers and young adults, as such a shift would open up for more opportunities in the future. As consequence, more teenagers and young adults would pursue a TVET qualification, which would in turn increase the number of apprentices and subsequently the number of professionals in each field. This supposedly causal relationship can be illustrated with the help of a macro-micro-macro relationship, which aims to explain a macro-level relationship through the behaviors of individual agents at the micro-level (Fig. 2).

¹ This case study was published before in German for a short journal article (Schmees & Grunau, 2020). For this paper, the case has been extended and translated.

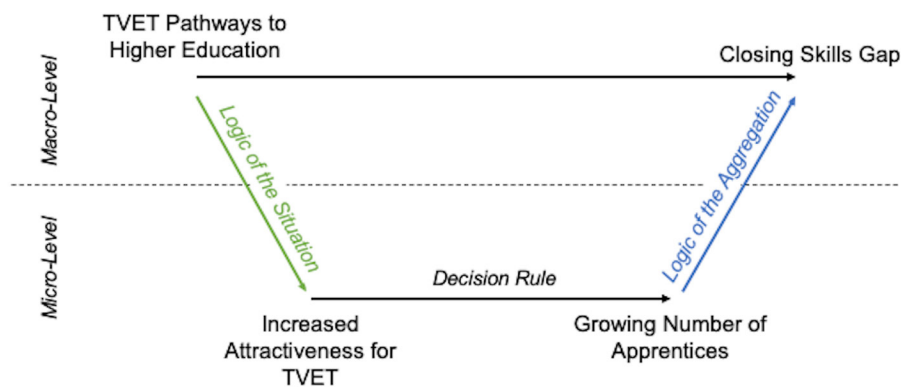


Figure 2: Assumed Consequences of a Formal Upgrading of TVET Qualifications (based on Coleman, 2000; also used in Schmees & Grunau, 2020)

In line with the original analysis, we argue for a differentiated consideration, both with regard to the so-called context hypothesis (according to which a formal upgrading of TVET qualifications would lead to an increase in attractiveness at the agents' level) and with regard to the so-called aggregation rule (according to which a decision in favor of training due to its permeability would lead to more skilled workers to cover the demand). This assumption will be tested in the next section.

Typification: Three Types of Academically Oriented Apprentices

In order to differentiate the agents, we rely on the results of a study in which advanced students were asked about their educational paths and decisions in narrative interviews (Grunau, 2017). All the interviewees had completed a TVET qualification before taking up their studies. The source material comprises $N = 15$ interviews, which were reanalyzed for this paper. Regarding the question of whether the permeability between TVET and academic education contributes to increasing the attractiveness of TVET, two types of students could be reconstructed as highlighted in previous studies: An academically oriented type and a vocationally oriented type (see also Grunau, 2017). In addition, there is a third type, who represent a mixture of the earlier two types (Schmeiser, 2003).

The first type (Type I) shows a fundamentally academic orientation that originates in family and school socialization. The students come from academic or academically oriented family homes and usually acquire higher education entrance qualification on a linear path. The goal of pursuing an academic career is already determined before starting TVET. For this type of students, TVET fulfils the function of a pre- or interim program, for example to bridge semesters, waiting for a degree course to begin. Retrospectively, TVET is nevertheless usually seen as valuable, for example regarding practical experience and for the 'soft' fallback

option that an apprenticeship might offer. For students in this type, TVET initially serves a specific biographical purpose but adds no formal added value with regard to taking up a degree program which is the desired destination. Remaining in the trained occupation is, at best, an emergency option. In this case, the permeability between TVET and academic education does not in reality contribute to making TVET more attractive.

For students in the second type (Type II), the educational-biographical orientation is more vocational-pragmatic. Here too, family and school socialization processes play a central role: The students usually come from non-academic but educationally ambitious families. Typically, they first complete TVET after graduating from secondary school. Only during their training or professional lives does the option of studying arise – more or less related to their specific situations. The access options via TVET to academic education become relevant in this case, but they are not a policy tool for increasing attractiveness: They did not choose TVET because it entails the option to study, but because it initially appeared to be the only viable path within their perceived horizons of possibility. Only later did the option of pursuing an academic career become realistic.

For these two typical students with TVET, both those with a basic academic orientation and those with a basic vocational-pragmatic orientation, the option of transitioning to higher education plays no or only a subordinate role in promoting the attractiveness of TVET. But things are different for students in the third category (Type III): These are students who are socialized academically, but whose educational paths lead to TVET, for example by attending a secondary school and then pursuing TVET. This type is characterized by a sense of educational relative deprivation in their respective families – Schmeiser (2003) speaks in this context of 'wayward' sons and daughters. To compensate for this sense of decline, the options between TVET and academic education can increase the attractiveness of TVET, as this opens up perspectives of returning to the family's originally intended path, which can then be fulfilled in a second attempt.

Even if the typification (Tab. 1 for an overview) may not cover every specific individual case, the following tendency can be shown: The option to transition between TVET and academic education only increases the attractiveness of TVET for a minority, at best. In our analysis of this case, this minority comprises Type III, students for whom an academic career was a prospect from the outset, but for whom TVET is initially more realizable due to their performance in school. Even if TVET entitles vocationally and pragmatically oriented students (Type II) to pursue higher education, the potential to transition between TVET and academic education does not have the effect of increasing the attractiveness of choosing TVET in the first place.

Table 1: Typification of Case 1 (based on Schmees & Grunau, 2020)

	Type I	Type II	Type III
Mindset (<i>Modus Operandi</i>)	academic	vocational- pragmatic	mixed
Permeability Needed	no	yes	yes
Rising Attractiveness for Entering TVET	no	no	yes
Macro-Level Effect	maximum short-term skills gain	none, long-term skills loss	none

Consequences: Continuing Skills Shortage

After the context hypothesis (according to which a formal upgrading of TVET qualifications would lead to a general increase in attractiveness) was subjected to a differentiated analysis, the aggregation rule (according to which a resulting decision in favor of training would lead to more vocationally qualified skilled workers) can be falsified.

Each of the three types could relate to permeability in different ways, none of which appear particularly beneficial for closing the skills gap. For students in Type I, for example, permeability would initially increase the number of trainees, but without increasing the number of vocationally qualified skilled workers in the medium to long run. Training would play a role primarily in terms of educational biographies and could not be fully utilized economically. For students in Type II, fundamentally vocationally oriented skilled workers could make use of the access options to higher education. This leads to a reduction in professionally qualified skilled workers who contribute to meeting the demand for skilled workers. Finally, for students in Type III, permeability would also not serve to meet the demand for skilled workers, since the 'return' to academic education aimed for from the beginning would thus appear feasible within the framework of the (increased) access options to higher education.

In sum, permeability at least increases the potential for the migration of vocationally qualified skilled workers toward academic careers. It is, then, expressly not a way to increase the number of skilled workers. Thus, the connection from the micro to the macro-level is clearly a misconception.

3.2 Validation and Recognition for Low-Qualified Nursing Assistants

Validation arrangements are born from the hope of increasing the visibility and recognition of informal learning. For the healthcare sector (and especially for geriatric nursing), validation arrangements are regarded as contributions to address the increasing skills shortage. In short, through validation arrangements, uncertificated workers' 'hidden' competencies can be made visible and usable for the labor market. In the projects *Kompetenzbilanzierung für ältere Arbeitnehmerinnen und Arbeitnehmer* (skills assessment for older employees; KomBiA) and *Validierungsverfahren und Nachqualifizierung in der Altenpflege* (validation procedures

and post-qualification in geriatric care; Valinda), a validation and recognition arrangement were developed and implemented (Gössling & Grunau, 2020).

With regard to validation arrangements, the hypothetical causal relation on the macro-level consists of the fact that validation and recognition program lead to more registered nurses and thus respond to and correct the skills shortage. Consequently, the agents – low-qualification nursing assistants – participate in the program and are recognized as fully registered nurses afterwards (Fig. 3). Within the project Valinda, which implements the KomBiA validation program in three different regions in North Rhine-Westphalia, the logic of the situation and the logic of aggregation occurred as expected: 48 out of 53 low-qualified nursing assistants were successfully recognized as registered geriatric nurses in the first attempt, the others in the second attempt.

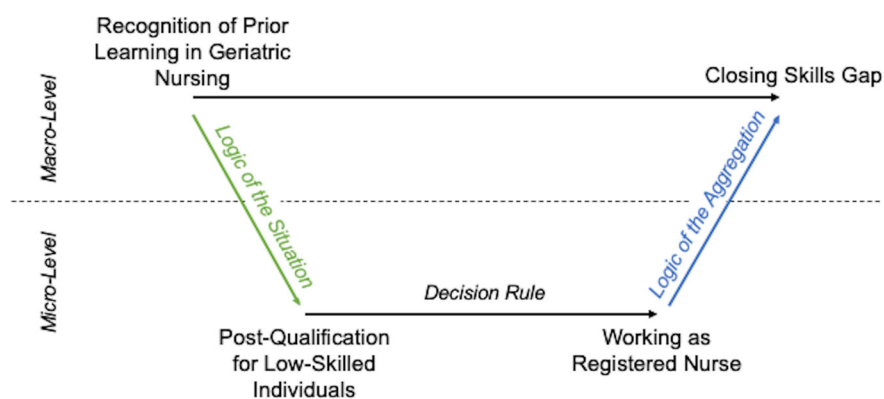


Figure 3: Macro- and Micro-Level Relations in Case Study 2 (based on Coleman, 2000)

A closer look at the participants' motivation and behavior leads, however, to a more detailed picture of micro- and macro-level relations.

Typification: Three Different Types of Registered Nurses

In a qualitative study accompanying the project, we collected data on the biographical aspects, professional identifications, and future prospects of the participants (N = 12). A first evaluation of individuals' mindsets and behaviors show at least three different types of participants (Tab. 2).

Table 2: Typification of Case 2 (own creation)

	Type I	Type II	Type III
Mindset	enhancement of vocational identification	confirmation of vocational identification	continuing (vocational) education
Self-Conception Before Post-Qualification	nursing assistant	registered nurse	future specialist
Self-Conception After Post-Qualification	registered nurse	registered nurse	one step closer to a future specialist
Macro-Level Effect (Quantitative)	none	none	none, long-term skills loss
Macro-Level Effect (Qualitative)	increased skills level	increased (formal) skills level	increased (formal) skills level

Before specifying the types, it should be mentioned that the participants had low qualification in terms of formal certificates, but all of them were involved in a government further education project to increase the number of skilled workers.

Workers in the first type (Type I) identify themselves as a nursing assistant before the post-qualification. In the Valinda project, workers in this type seized the opportunity to gain a formal certificate ('it is worth a try'). After completing the program successfully, they identified as registered nurses and expressed that they want to stay in nursing. As a consequence, we assume that workers in this type will secure skilled work in the field of geriatric nursing in the long run. Workers in the second type (Type II) identified themselves as registered nurses even before acquiring the certificate. This can be traced back to years of work experience. However, for pragmatic reasons, workers in this type had already taken on the workload and responsibilities of registered nurses. After official accreditation as registered nurses, workers in this type remain in nursing after the post-qualification and secure skilled work at least in the short- and medium-term. The third type is different from Types I and II, as it can be characterized by a motivation to participate in the program not to become a registered nurse, but to gain access to further qualifications or specializations, for example, in care management. It is likely that workers in this type will continue to specialize after the qualification as a registered nurse has been completed. Consequently, workers (Type III) will leave the occupation on a medium- or long-term basis.

Consequences: Skill Gain and Drain

Regarding this case study, the consequence is skills gain and drain. In contrast to the case of higher education access described above, the target group of the program is already working in the field of geriatric nursing, but with lower qualifications. It must be noted that especially with Type I and Type II, skilled workers (here: Registered nurses) can be gained, but nursing assistants are thus drained. Overall, the number of nursing staff working as such is nevertheless rather reduced, since the target audience is composed of those who already work in nursing. This strategy would not necessarily address the skills shortage, since better qualified

(but fewer) people would then be active in nursing. In particular, Type III shows that the relation between validation and skills security is not causal in a mid- and long-term perspective. Therefore, it is essential to regard temporal dimensions.

3.3 Refugees as 'Human Resources'

When the refugee crisis occurred in 2015, the so-called 'welcoming culture' in Germany ended after a few weeks, replaced by metaphors like 'the boat is full'. The reaction from several academics was not to justify migrants' arrival primarily based on human rights, but to use an argument based on the reason of state: Germany's demographic development would lead to massive problems in the social system, as well as to a steadily growing skills shortage. Following their logic, this crisis could be at least partly averted by the refugees if one first invested in them. The calculation seems to be mathematically sound: Too few children are born annually, resulting in a shortage of skilled workers, which would be compensated for by increased migration. Also in the scientific community, prominent voices such as Baethge and Seeber (2016, p. 3) demanded the following:

Protection and asylum seekers represent a potential for society and the labor market that can be activated through vocational training in the medium and longer term (not in the short term) and contribute to productivity and prosperity in society.²

Many such voices implicitly claim that migrants will excessively opt for training and that this will disproportionately take place in shortage occupations, meaning occupations characterized by a high demand for skilled workers and a low number of applicants for TVET. And at least regarding TVET, this assumption tends to be correct. Many refugees in TVET pursue training for shortage occupations, particularly in the care sector (see Wehking, 2020).

The relative growth in these sectors is achieved both via easier access into shortage occupations and via counselling. Additionally, TVET will provide those with an unclear or even negative prospects in Germany with the prospect of permanent residence. The temporary perspective of staying in Germany is made (more or less) permanent through TVET, which dramatically increases the attractiveness of the training itself, compared to the population with citizenship or a permanent residence permit. Therefore, the logic of the situation determines that the perspectives of staying increase the value of any training.

Due to the supply-driven market mechanism embedded in the German dual apprenticeship system, the highest number of available training places are offered in occupations facing skills shortages, known as a 'pull factor'. Additionally, refugees' limited resources (lack of prior schooling, illiteracy, weak German language skills) give them few alternatives, known as 'push factors'. Consequently, the decision rule favors occupations with skills shortages, as

² This quote is originally in German and was translated by the authors for the paper.

they offer the greatest supply and the lowest entry barriers. According to the logic of aggregation, the skills shortage should be reduced through the ever-growing number of qualified refugees (Fig. 4).

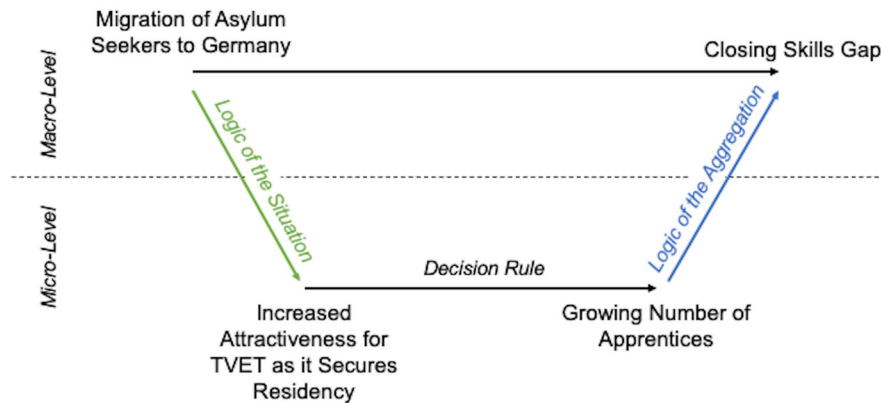


Figure 4: Hypothesis of Migrants Reducing the Skills Shortage (based on Coleman, 2000)

Typification: Three Reactions to the Double Bind

The question in this case is whether this micro-macro-relation proves to be accurate in this case. For this purpose, it can be assumed that in their job orientation phase, refugees are implicitly exposed to a double bind (Bateson, 1985; Watzlawick et al., 2007). A double bind is characterized by two parallel requests that are contradictory and thus cannot be fulfilled at the same time (see Migura & Schmees, 2023): Choosing a profession, and therefore an apprenticeship, is largely based on the freedom of occupation. The apprenticeship system in Germany is highly differentiated and not a second choice by design. This is shown, among other things, by the fact that people with formal higher education entrance qualifications also start apprenticeships. Accordingly, the decision to undertake an apprenticeship is commonly seen as an active and well-considered choice over other alternatives, one that involves a high degree of conviction for the specific occupation chosen. Choosing an occupation requires corresponding motivation while choices are limited. Additionally, the refugees may face the issue of an unsecure residence status. The basic problem of the situation described here is that the decision for TVET is based on (greatly increased) incentives without sufficient alternatives. Due to an overall lower expectancy regarding competencies, the application for a shortage occupation is more likely to be successful.

Even though potential apprentices in German often face this double bind, the dimension among migrants and refugees is more existential. The pressure to choose an apprenticeship is closely related to their residency status and future in Germany. In addition, initial studies

have shown that career guidance unilaterally recommends going for shortage occupations, even if there are possible alternatives (Hölscher, 2021). The advice about what is and what is not possible is thus internalized by those receiving the advice (Wehking, 2020). However, the options from which refugees and migrants choose is a greatly reduced list (Wehking, 2020), on it there are mostly shortage occupations.

Confronted with a double bind, three reactions (and, therefore, types of agents) can be distinguished (for the theoretical base, see Watzlawick et al., 2007): The first type (Type I) is characterized by an adaptation to the situation. Even though the offered apprenticeship does not lead to the desired occupation, the refugee is making sense out of their choice and adapts to the decision by changing their mindset to fit into the occupation. In some cases, this adaptation is not even needed, as the shortage occupation was already the dream job beforehand. However, this seems to be more an exception than a rule. For workers in Type I, training is started and the profession is practiced later. Workers in the second type decouple talk and action (for an extensive theoretical concept, see Brunsson, 1989) in a way that allows them to talk about the shortage occupation as their dream job. However, the apprenticeship is just a means for something else. Wehking (2020) divides four subtypes: Apprenticeship as transitions to studies, apprenticeship to finish school, apprenticeship as first guarantee (also for securing the residence permit, see Hölscher, 2021), as well as apprenticeship as occupational orientation. Workers in Type II will prolong their apprenticeship so that they may later pursue an academic degree. However, the trained occupation itself is not an option. The purpose of the apprenticeship lies beyond the occupation itself. Workers in Type III react to the double bind with a rejection of all recommendations, as these recommendations make as little sense as the double bind itself. This type will not start training, and instead uses some other options available, like unskilled work, taking up studies, returning to the country of origin, or the like. Table 3 can be used for an overview.

Table 3: Typification of Case 3 (own creation)

	Type I	Type II	Type III
Mindset	adaptation	talk vs. action	withdrawal
TVET Qualification	obtained	obtained	not obtained
Macro-Level-Effect	long-term skills gain	maximum short-term skills gain	none

Consequences: Limited Skill Gain

As a consequence, it is obvious that the macro-level effect of recruitment of migrants to close the skills shortage is rather limited. While three out of two types finish the qualification, just

one type is likely to stay in the occupation and reduce the skills shortage in the medium- and long term. As we did not conduct our own quantitative analysis, it is difficult to judge the distribution among these types. However, workers in Type II likely comprise the majority of actual cases, as qualitative studies found this type predominant (see Wehking, 2020). On the other hand, the number of workers in Types I as well as III would be comparably low, suggesting a very limited success of this program when it comes to closing the gap of skills shortage. More importantly, this strategy produces side effects that make future counselling almost impossible (for Type III) as well as it would lead to extensive time loss in the education process (for Type II).

4 Cobras Everywhere!?

As shown in the analysis, the three cases examined in our paper are fundamentally different in terms of social segments. The common ground among them is the political intention as well as the method to achieve it: All strategies are driven by the idea to close skills gap in Germany by means of TVET policies and/or programs. A consensus finding in all the three case studies is that the micro-level – the (future) skilled worker's requirements and perceptions – are not considered adequately to gain a mid- or long-term effect regarding skills gain. Our differentiated analyses of different types within the three cases reveals that the expected outcome on the macro-level is at best achieved by some of the types and therefore a fraction of addressees. Furthermore, there are good reasons that those types in line with policy/programs aims are rather small in number as illustrated in the finding sub-sections. As a result, we adapted Coleman's boat to a 'tent model' (Fig. 5). We therefore agree with Ramström that even though:

[...] Macro social phenomena are micro manifest, [which means] that our macro social concepts need to refer to individual-level states and events if they are to have empirical content. Consequently, social theory [...] has to do with explaining and understanding the behavior and mental properties of human beings. (Ramström, 2018, p. 387)

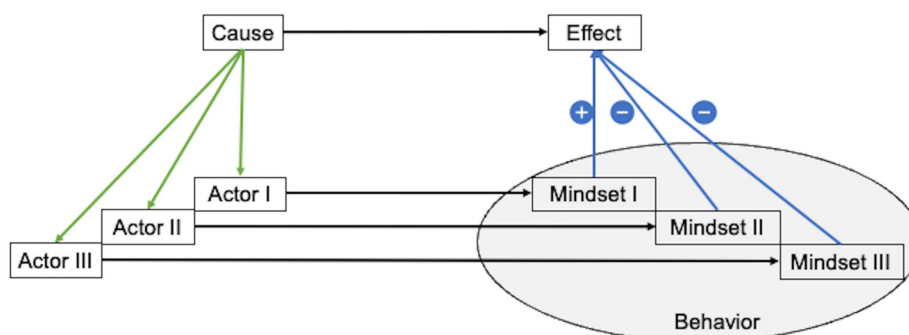


Figure 5: Macro-Micro-Macro 'Tent' (own creation)

All in all, we conclude that it is essential to take micro-level perspectives, and especially the actors' options and rationale, into account when developing political strategies in TVET and their macro-level effects. The suggested macro-micro-macro 'tent' can be a tool analyze possible achievements when it comes to TVET policymaking and beyond. However, it can also be used as an instrument for policy planning where the individual mindsets (and therefore a more subject-oriented perspective) are seriously considered. Because apart from structural challenges, an educational perspective should also include the mindset of the individual learner as a resource for their future development, as opposed to something (or someone) that can be instrumentalized for a greater good. Societal needs must be considered as a second step to balance individual and societal perspectives.

As a point of discussion, the apparent statics and linearity of the tent model remain. It should be considered that the labor market is dynamic, and decisions are subject to various, partly sociogenetic influences (e.g., gender, wages, social hierarchies). Like Coleman's boat, the tent model represents a complexity-reducing explanatory approach to the question of macro- and micro-relations. Finally, societal problems cannot be solved by reforms of the education system alone (e.g., Gruschka, 2000) but have to be accompanied by comprehensive reforms. Easy fixes will most likely lead to countereffects – like the increase of cobras in old Delhi illustrates.

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Ethics Statement

The authors report there are no competing interests to declare. The ethical requirements were respected by the authors.

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