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# Actors and factors in the international transfer of dual training approaches: The coordination of vocational education and training in Mexico from a German perspective

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## Abstract

The transfer of the German dual vocational education and training to other countries is much discussed. The reduction of youth unemployment, in particular, is considered as a central motive. Similarly, some promoting factors and challenges that influence the transfer of vocational education are already known. The focus of this study is on the reform of the Mexican vocational education system and the facilitating and inhibiting factors faced by the different actors from German-speaking countries involved. The study is based on 22 expert interviews that were analysed using qualitative content analysis. The results show that there are factors that have both a positive and a negative impact on transfer in Mexico.

## INTRODUCTION

Mexico has reformed its vocational education system at the intermediate skill level in the 2010s and introduced a dual system approach of cooperation between employers' premises and vocational schools. Actors from German-speaking countries (commercial education providers, development agencies, companies) have long supported this process in Mexico (Fuchs et al.,

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2021; Vogelsang, Röhrer, Fuchs, et al., 2021; Wiemann, 2020, 2022; Wiemann & Fuchs, 2018). In addition, companies have recently started to intensify dual learning location cooperation with universities (Graf et al., 2014). A range of actors is involved in the transfer of the dual system approach in Mexico, acting on different levels (e.g., regional, national, international) (Herod, 2003).

These reforms, inspired by countries such as Germany, Austria and Switzerland, who have operated a dual training model for apprenticeship for many years and are considered donor countries, also exist in many other countries and have long been the subject of academic debate (Barabasch et al., 2021; Barabasch & Heller, 2020; Federal Ministry of Education and Research [BMBF] (2013); Gonon, 2014; Li & Pilz, 2021). The debate focuses mainly on the way vocational education and training are organised at the intermediate skill level (e.g., Davoine & Deitmer, 2020; Fuller & Unwin, 2013; Gonon, 2014; Valiente & Scandurra, 2017). A variety of reasons are cited for the benefits of the dual model such as the reduction of youth unemployment and the availability of skilled workers (Organisation for Economic Co-operation and Development [OECD], 2018; Stockmann 2014, 2019; Wiriadidjaja et al., 2019). However, researchers also highlight the challenges of a long-term transfer to other countries and whether only certain aspects of a dual system should be transferred (Gonon, 2014; Li & Pilz, 2021; Valiente & Scandurra, 2017). Among the key challenges that have been identified are the companies' willingness to offer training, the presence of a learning venue in vocational schools, and an existing legal framework to facilitate implementation. Other essential factors are cooperation between the state, companies and social partners, the design of holistic occupational profiles, and the need for training to support the students' career development (Fortwengel & Jackson, 2016; Gonon, 2013; Lewis, 2007; Valiente & Scandurra, 2017).

Regarding transfer, research has so far focused either on the field of international cooperation of development (Heitmann, 2019; Stockmann, 2014, 2019; Stockmann & Silvestrini, 2012), on activities of particular companies (Gessler, 2017; Pilz & Li, 2014) or offers of commercial education providers (Kühn & Holle, 2021; Kühn et al., 2020; Posselt et al., 2019). Until now, studies that analyse these kinds of transfers with regard to Mexico have mainly been from the perspective of German companies (Fuchs, 2022; Vogelsang & Pilz, 2021; Wiemann, 2022; Wiemann & Fuchs, 2018; Wiemann & Pilz, 2020). There has also been discussion about what generally promotes and hinders the transfer of dual practices (Graf & Lohse, 2021; Kühn et al., 2020; Li & Pilz, 2021; Oeben & Klumpp, 2021). However, there has not been discussion from the perspective of the different actors from German-speaking countries involved, such as development agencies such as the German Corporation for International Cooperation (GIZ) or the Austrian Development Agency (ADA), commercial education providers and companies.<sup>1</sup> The actors from German-speaking countries and the Mexican reforms favour a dual training approach with cooperation between learning venues. At the same time, the involvement of employers' organisations, trade unions, local education agencies, and so on is significant (Fürstenau et al., 2014). This results in the need for cooperation between different players to establish dual approaches in line with the German model. As the dual vocational education system of German-speaking countries is seen as a role model (Federal Institute for Vocational Education and Training [BIBB], 2015), the spotlight is on the perspective of the actors from German-speaking countries to gain targeted insights (Barabasch & Heller, 2020; BMBF, 2013; Li & Pilz, 2021). There are still no studies that focus on the

<sup>1</sup>Switzerland is a multilingual country, but because of its German-speaking part, it is included in this study.

different actors in Mexico from a German perspective and the factors that have a promoting or inhibiting effect on coordination (see Li & Pilz, 2021; Oeben & Klumpp, 2021), although there are relations between Germany and Mexico regarding the implementation of dual practices (BIBB, n.y., 2015). The focus is on the actors from German-speaking countries because German vocational training activities have a long tradition in Mexico, as many German companies such as Volkswagen, Siemens, or Bosch have been based there for several decades (Fuchs et al., 2021). Therefore, the focus is on the perception of the actors from the donor countries (Germany, Austria, Switzerland). This is of particular interest, as the donor has to adapt to an unfamiliar (cultural, systemic, social) environment (Fuchs, 2022; King, 2014). Previous studies have shown that not only the perspective of the actors of the host countries is relevant, but that the perception of the donor actors causes major frictions in the transfer process (Barabasch et al., 2021; King, 2014). While we know little about this issue of the donor's view, some empirical findings with regard to facilitating and inhibiting factors already do exist. For example, Stockmann (2014) highlights four factors that support transfer. The first is the compatibility of the project with the target country counts, hence actors have to consider the political, cultural, social, or economic conditions. Second, the aspect of ownership is important, which implies that the actors agree on the strategies and measures and work together. Third, the management of the project requires high flexibility to allow the involved actors to respond to upcoming obstacles in advance. Fourth, the actors need to have the required knowledge and competencies (Stockmann, 2014). In accordance with this, Bliem et al. (2014, p. 12) note that '[s]ocial partners, especially companies and their branch offices, are the carriers of the apprenticeship. This is also reflected in the entire governance and financing structure'.

The research literature suggests there are three specific factors which inhibit the coordination of actors. First, there can be a lack of motivation from multinational companies to introduce dual practices (Oeben & Klumpp, 2021; Wieland, 2015). For example, companies may perceive learners as a hindrance to their work processes, which is why they do not want to accept learners. Accordingly, various requirements of the different groups of actors need to be taken into account to cooperate with each other (Ratnata, 2013). Second, there may be a lack of sufficient cooperation between vocational schools/universities and companies to prepare learners for working in companies. Ratnata (2013) writes that '[i]mplementing well-organised, internships (or apprenticeship) of sufficient duration within vocational education could significantly contribute in reducing this deficiency'. Third, the vocational curricula might not meet the needs of the companies (Ratnata, 2013). Accordingly, the closer linkage between the actors is important.

The scientific discourse shows that there are both facilitating and inhibiting factors, but that there are hardly any insights about Mexico in this regard. Therefore, this paper presents findings from a study that aimed to address a gap in the research literature by exploring the question:

Which facilitating/hindering factors influence the coordination of actors in the Mexican vocational training system from a German-speaking perspective?

In the following section, the research approach is described (section 'Research Approach: Actors and Their Coordination'). A description of the Mexican vocational education system is presented in section 'Vocational Education in Mexico' and a discussion of the methodological approach in section 'Methodology'. In section 'Findings', we present the research findings, followed by the section 'Discussion and Conclusion'.

## RESEARCH APPROACH: ACTORS AND THEIR COORDINATION

As our study focused on the actors from German-speaking countries involved in the transfer of a dual system approach to Mexico and their coordination, we considered the concept of skill ecosystems as a first approach, because actors and structures of vocational education are embedded in a context (Buchanan et al., 2017). Diverse private and public actors, such as vocational providers, companies, government or local community groups participate to offer vocational education (Billett & Seddon, 2004; Oliver, 2010). Regarding vocational education in Mexico, Wiemann and Fuchs (2018; see also Fuchs et al., 2021; Wiemann, 2022) mention the following actors from German-speaking countries: Germany's BIBB, GIZ, German Chamber of Commerce (CAMEXA) and German companies. The constellation of participants is also important (Altrichter, 2010). Röhrer et al. (2021) note that, for the tourism region of Cancún (Mexico), companies and vocational training providers (vocational schools/universities) are particularly relevant for the implementation of dual practices as they are the active organisations offering dual practices. Accordingly, a division between dynamic actors, who can also be called 'promoters' and supporting actors is possible (Howaldt, 2002). Therefore, for players to achieve their common goals, such as offering dual practices, they have to coordinate their actions. Abrams et al. (2003, p. 11) write: 'Fundamentally, (...) [coordination] is about power, relationships and accountability: who has influence, who decides, and how decision-makers are held accountable.'

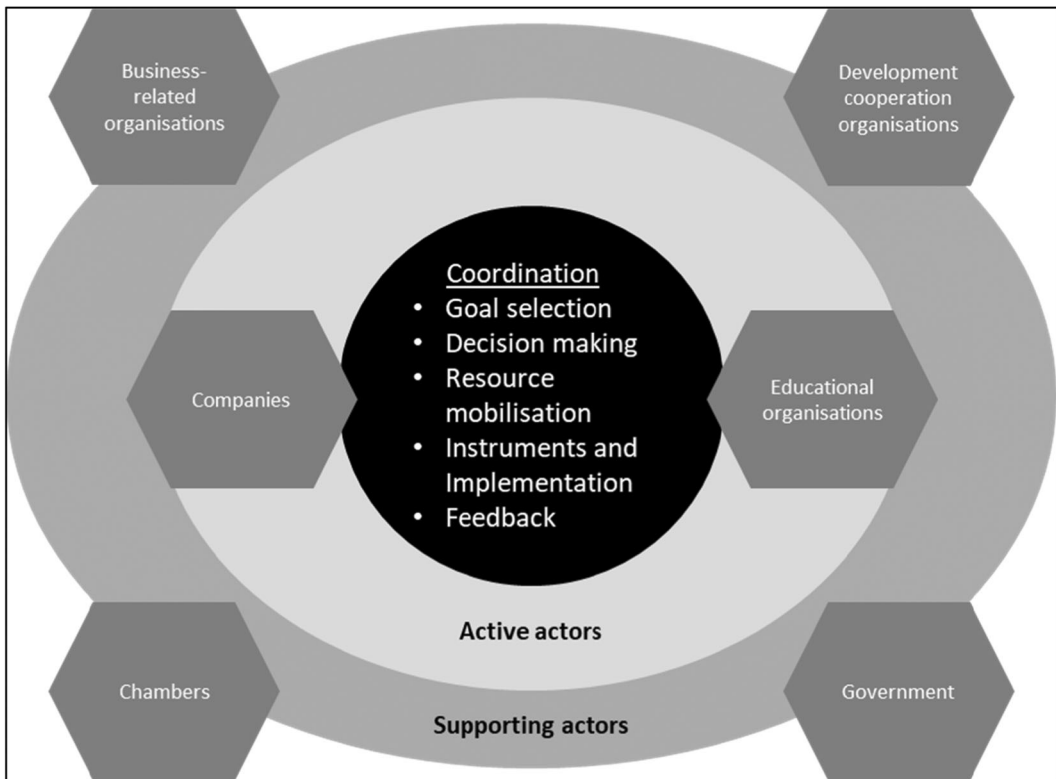
To examine the coordination of the actors and to be able to pursue the research question, we considered Pierre and Peter's (2005) concept of coordination (see also Oliver, 2010) as a starting point for to identify facilitating and inhibiting factors and as a structuring device for this paper.

Pierre and Peters (2005) describe three essential aspects in their concept: (1) actors, (2) processes (coordination), and (3) outcome. This paper focuses on the coordination of the actors. According to Pierre and Peters (2005), there are five steps of coordination. The first step revolves around defining and selecting the goals and addressing the question of *what*, that is, what is the goal? The aim is to agree on collective goals to achieve. Pierre and Peter's (2005, p. 14) explain that, 'The analogous part of the policy process is problem identification and agenda setting' and is a component of the first step. The second step involves *decision-making*. The focus is on *how* the goals are to be achieved. The third step is *resource mobilisation*. To achieve the goals, different resources (private, public, legitimacy) are needed. The fourth step is *instruments and implementation*. This phase is crucial in this process. The last step is *feedback*: 'The final part of the governance process is feedback, with the actions of instruments in the past being evaluated and put back into the decision-making process' (Pierre & Peters, 2005, p. 15).

Figure 1 summarises the literature outlined above. Many different actors act together because they pursue certain goals through cooperation and distinction is possible between active and supporting actors. When actors interact with each other, they follow the five outlined coordination steps. Finally, coordination takes place through the action of the actors, which is promoted and hindered by various factors.

## VOCATIONAL EDUCATION IN MEXICO

Like other Latin American middle-income countries such as Chile and Brazil, Mexico has been influenced by German and international organisations with regard to the implementation of vocational education over a long period. Brazil, for example, established policies for the



**FIGURE 1** Coordination of actions by different actors in five steps

collaboration of actors involved in vocational education and training, such as employers and unions, 50 years ago and Columbia established a national organisation for vocational education in 1952 (iMOVE, 2014; Rambla et al., 2019). In Mexico in the 1990s, cooperation was established between Mercedes-Benz and a vocational school (CONALEP) to offer dual practices (Cáceres-Reebs & Schneider, 2013). In the first decade of the 21st century, multinational companies from Germany, Austria and Switzerland began to cooperate with vocational training providers to improve workers' skills (Fuchs et al., 2021). At the same time, the Mexican government reformed the vocational system and established dual practices (Wiemann, 2020). The central government cooperates in promoting dual practices by various actors from German-speaking countries such as the embassies, multinational companies, educational agencies, development cooperation organisations, foreign chambers of commerce and nongovernmental organisations (Fuchs et al., 2021).

Today, dual approaches exist in a variety of forms in Mexico, as vocational schools and universities provide different dual concepts both at the higher intermediate level (Educación Media Superior) and at the tertiary level (Educación Superior) (Wiemann, 2020). In general, learners at the higher intermediate education level are between 15 and 17 years old with programmes lasting around 3 years. The first year of training is usually full-time school-based, after which a dual approach enables learners to alternate study in companies and vocational schools (Wiemann, 2020).

The Ministry of Education and its subordinate organisations play a key role in Mexico because they set the curriculum framework for the vocational schools. In addition, companies

and vocational schools play a central role because they must develop training programmes in cooperation at a regional level (Röhrer et al., 2021; Wiemann, 2020, 2022).

In contrast to vocational schools, universities are assigned to the tertiary level. There are many different public or private universities and other organisations that offer study programmes. The entrance study programmes, which the students can choose, are roughly comparable to a Bachelor's degree programme. Students need about 8–10 semesters to complete their first degree. Usually, students are between 18 and 23 years old (Wiemann, 2020). To train skilled workers, universities also offer dual practices and therefore cooperate with companies (Graf et al., 2014).

In sum, a wide variety of actors are active in Mexico to offer dual practices. Accordingly, different actors coordinate with each other to offer such programmes.

## METHODOLOGY

This qualitative study consisted of semistructured interviews with relevant German actors supplemented by equivalent types of actors from Switzerland (although it is a multilingual country) and Austria. These three countries are considered as models for the transfer of dual practices (King, 2014). The selected expert interview partners were chosen through literature research and direct contact as well as recommendation by other actors. An interdisciplinary research team (two senior and two junior researchers) of vocational education and economic geography specialists conducted 22 online interviews with 23 experts from 19 different organisations via video or phone calls between June 2020 and June 2021. The interview questions covered all types of dual practices including those at the university level as there is a great deal of interest in this level in Mexico (Graf et al., 2014). Therefore, interviews were conducted with experts from one government organisation, two chambers of commerce, six companies, four educational agencies, four development cooperation organisations and two business-related organisations. Interviewees included coordinators and heads of international operating organisations as well as Human Resource managers and student coordinators of companies from the tourism and industry sectors, whose headquarters are based in Germany, Switzerland or Austria, or have German owners. The research focused on the state of Mexico [Estado de México] because the region is the economic centre of Mexico (Parnreiter, 2010). All of the interviewed organisations have close relations to this region. The focus was on industry and the tourism sector because, on the one hand, both sectors are very important for the Mexican economy and, on the other hand, dual practices are already set up for these sectors (e.g., Vogelsang, Röhrer, Fuchs, et al., 2021; Wiemann & Fuchs, 2018; Wiemann & Pilz, 2020; Zirbel & Knott, 2017).

The interview schedule was informed by the literature on actor constellation and cooperation theory of vocational education and economic geography as well as context-related literature about Mexico and its vocational education system (see also section 'Vocational Education in Mexico'). Accordingly, the questions were assigned to the macrolevel ('institutional structures and economic, social and political framework') and meso-level ('organisational and regulatory design of TVET' [technical and vocational education and training]), although microlevel questions ('specific teaching/learning activities') were also included (Pilz & Wiemann, 2021, p. 98).

The expert interviews, which lasted between 40 min and 2 h, were conducted in German, Spanish and English, and were recorded and transcribed. The transcripts were analysed



following the approach of Kuckartz and Rädiker (2019) via six steps: preparing, organising and exploring data, developing categories for analysis, basic coding, developing a category system further and fine coding, analysing coded data and writing the research report. For the analysis and the creation of the category and code system, we used the evaluation software MAXQDA. In the following sections, the selected quotations are translated into English.

To better contextualise the interviews a document analysis also took place. This involved intensive Internet research on secondary data, unpublished documents, databases or online newspapers such as INEGI (National Institute of Statistics and Geography), *El Universal* (popular newspaper in Mexico) or the Federal Institute for Vocational Education and Training (Germany). The different documents were reviewed for their content. Therefore, several data sources were used to pursue the research question (triangulation) (Bowen, 2009).

## FINDINGS

The facilitating and inhibiting factors of the actors' coordination in the Mexican vocational training system are now discussed based on the five steps of Pierre and Peters (2005, see section 'Research Approach: Actors and Their Coordination').

### Goal selection

In line with Pierre and Peters (2005), the different groups of actors from German-speaking countries reported that it is important to define and pursue common goals with all players, including those of the partner country. To agree on common goals, first, the problems need to be identified. The common goal of the actors from German-speaking countries is to offer dual concepts, because, for example, almost all players mentioned the lack of skilled labour in Mexico. The goal must be institutionalised by setting an agenda. Several interviewees considered the development of long-term structures, processes, and strategies to be an important element for the implementation of vocational education in Mexico. One of the first steps for this was the publication of the 'Acuerdo Secretarial' in 2020, establishing vocational education as an option in upper secondary level and forming the basis for formalising the dual practice. This was developed and stipulated in 2015 by the 'Comité de la Opción Educativa de Formación Dual' [Committee of the Dual Training Education Option], which is a committee composed of various players from the educational and economic sector, such as several Mexican chambers, German organisations, the German foreign trade chamber at the beginning of the restructuring of the vocational system (Subsecretaría de Educación Media Superior SEMS, n.y). The 'Acuerdo Secretarial' was further developed by actors from German-speaking countries and Mexican actors, and governmental support from the Mexican Ministry of Education to promote vocational education:

'The Acuerdo Secretarial is the legal basis for dual training in Mexico, which defines that you can only speak of dual training in Mexico if the chambers are involved (...). This is intended to be changed now and this connection should now also be able to run [only] via the schools [...] so that one can then also speak of dual training.' (I\_10)



In line with this, it is also advantageous if the actors from German-speaking countries know the Mexican structural and cultural context and other local conditions, such as the different preparation of students in the schools in the regions. Interviewees of a chamber of commerce, education agencies and organisations of development cooperation considered that it is important that vocational education matches the conditions of Mexico. Therefore, 'the [dual] approach need to be developed in such a way that it fits' (I\_20). But due to the large participation of different actors with different ideas, about 30 types of dual systems have now been developed in Mexico (I\_8, I\_10).

Regarding goal selection, the interviewees noted that the implementation of dual practices is highly dependent on the support of the Mexican government. Although the current government supports vocational education in Mexico by their commitment of structuring the different types of dual concepts, which is appreciated by some players, various actors were uncertain. This was especially the case in 2018 when there was doubt about whether the new government led by Andrés Manuel López Obrador would continue to push the dual concept that was introduced by the previous government. A change of government poses a challenge in Mexico because a new government may pursue completely different goals.

## Decision-making

Decision-making is a process involving various actors discussing how to reach the established goals (Pierre & Peters, 2005). According to various interviewees, the involvement and participation of the different local actors is necessary for the decision-making processes. A business-related organisation emphasised the cooperation of government, vocational education organisations and companies. Another business-related organisation stated that it is important to include the properly selected organisations who also understand the dual system. According to this actor, the Mexican chambers should have been included in the decision-making processes. A round table consisting of actors from German-speaking countries and Mexican actors was developed in 2013, from where further committees and agreements developed, which were already mentioned above. However, another smaller round table was also founded with only few German actors, leaving out the considerations of the Mexican partners (I\_10).

The problem with decision-making, however, is that the actors change frequently in the Mexican-German context of implementing vocational education. This is confusing for the Mexican actors when new actors from German-speaking countries are added. An education agency considered that it is difficult for the Mexican actors to understand how to identify the responsible actors from German-speaking countries. Yet, this is important to know what the individual actors from German-speaking countries do. For actors from German-speaking countries, it is challenging when the Mexican representatives change, especially after elections. An education agency, in particular, complained about labour turnover in the Ministry because they constantly start from scratch. It makes sense, therefore, to develop an overarching, long-term strategy, which is not based on specific representatives of the participating organisations. In this context, a chamber and two education agencies emphasised that contracts also have a facilitating function because they are a basis for cooperation.

Furthermore, a business-related organisation commented that it is necessary that not everything is dictated from above and that bottom-up communication is also considered:

'Listening. Listening and not top-down, but bottom-up. We need to learn much more about incentive structures, about incentive structures to get the quality of education. (...) we need a bottom-up culture in Latin American society. And the first beneficiary is the youth through quality education.' (I\_17)

The interviewees also presented various challenges regarding decision-making processes. For example, according to a development cooperation organisation, Mexico is the country with the most contracts between different organisations in Latin America. The interviewee said that by signing contracts, decision-making processes are blocked because the highest authorities have to be approached to move forward. This is also noticeable, for example, in the adaptation of the 'Acuerdo Secretarial', because the process takes time. In addition, the individual federal states have decision-making and implementation powers, which some actors perceive as inhibiting. Another development cooperation organisation argued that in countries with centralised control, it is easier to implement dual practices.

Obstacles related to the micro (educational) level are also possible. A development cooperation organisation said that long decision-making processes were inhibiting:

'Curriculum developments are (...) impossible to implement in three years. I can make curriculum adaptations, if I operate within an existing legal framework, I can adapt it. But a completely new development of a curriculum is an impossibility in that time. When pedagogical experts start discussing competences and other things long and wide, you're not finished that quickly.' (I\_7)

## Resource mobilisation

All interviewees indicated the importance of different resources. In addition to human resources, structures, equipment and financial resources must also be made available by public and private actors to offer vocational education (see also Pierre & Peters, 2005). For this purpose, funding is provided for several projects developing vocational education by various actors from German-speaking countries such as the government, development cooperation organisations, chambers, education providers and business-related organisations. In this context, other joint ventures have also been established to carry out projects and bilateral agreements serve as the basis or funding from German-speaking government organisations into Mexican structures. Nevertheless, there could be always more financial resources for further projects and the resources must also reach the teachers.

Among other things, human power is essential. The people involved must be motivated and have time. In the case of actors from German-speaking countries, it is advantageous according to an educational agency if they are fluent in Spanish to be able to express themselves properly to Mexicans. According to a company, it is also beneficial if a German-speaking trainer from a company travels to Mexico to train the teachers according to the company's requirements. However, this procedure is mainly useful for the start of the implementation to create local training structures.

In terms of resources, different interviewees pointed to the lack of qualified teaching staff as the main obstacle. In their opinion, it is important to have teachers who have received good

training themselves. They need to have different skills so that they can teach the learners. A company commented:

‘For example, English is not taught anywhere (...). But to be honest, the English lessons are... The English teachers themselves sometimes [don’t] really know English. I think it’s not appropriate to teach that. In fact, we should start by teaching the teachers better, by giving them opportunities to encourage children to think (...). That is the first point. So just this critical, this not accepting everything as it is told, but thinking about how it is, what it is about and how it can be changed.’ (I\_14)

Furthermore, a development cooperation organisation also noted that further training measures for teachers are important. According to various actors, it is not only the qualified teaching staff that play a role but also the equipment of vocational organisations and training centres. The equipment must match the demands of the companies to facilitate cooperation. Therefore, resource mobilisation is a fundamental element without which the process of implementation is ineffective.

## **Instruments and implementation**

There are various instruments that support the implementation of vocational education. By combining forces, various actors from German-speaking countries and Mexican players join their efforts to implement dual practices. Nevertheless, the various actors are involved in different ways: Chambers are relevant actors in terms of the implementation of education because they establish contacts between companies and vocational education organisations. A German-speaking foreign trade chamber, for example, is very active in this aspect. The Mexican chambers, however, are perceived differently because on the one hand, they act more as trade associations and often exercise a more supportive role by promoting vocational education to their members.

The various industry associations provide additional persuasion to companies to offer dual practices. According to a company, companies that already implement dual practices are role model for other companies. Another company stated that it is also beneficial if the general manager on site of the company is a German-speaking person, because they understand and know the dual system. In general, it depends on the company in Mexico whether dual practices are established. Moreover, information is not only relevant for companies but also for the population. Therefore, the dissemination of information and knowledge about vocational education is an important aspect, which is still partly missing in Mexico. Notably, different interviewees criticised the lack of information dissemination by the government and the lack of understanding of dual practices by the population. The interviewees particularly emphasised that it is necessary to advertise vocational education and to sensitise the population to it. In this context, a government organisation, a business-related organisation and a company mentioned the negative image of vocational education. The benefits of dual practices need to be highlighted to the population. For this purpose, videos and information events have been created as development cooperation organisation comments. However, a development cooperation organisation stated that ‘the best vocational education ambassadors are the young people themselves’ (I\_10) who pass on their experiences.

The interviewees also reported various obstacles. In terms of implementation, a development cooperation organisation, a business-related organisation and a company said they believed that it is beneficial if dual practices are not implemented simultaneously throughout the country but if, for example, pilot projects are initiated first, and then other regions are included. The implementation takes place in Mexico on a larger scale and this is why this is identified as a hindrance.

The willingness of companies is necessary for the implementation of dual practices and all actors from German-speaking countries pointed this out in the interviews. In particular, companies need information about dual practice and their benefits. However, several players also said that many companies in Mexico are not interested in the implementation of vocational education or have already developed their own in-house concept. This is because the companies must be very active to evolve training structures and to build up relationships with schools and other actors, with whom they can cooperate to offer vocational education. Furthermore, an educational agency explained that companies also do not want to invest in learners without making a profit:

'The main fears of companies are: I have trained them and then they leave. They don't think about the fact that they can continue to train every year and that this investment will be compensated for when the trainees actually become productive. (...) The other thing is that at the beginning of the training, the costs are of course very high (...). But over time and in the long term, these costs are reduced. (...) But normally you want the fast shot, train quickly, especially not in long-term, cheap, (...) that you quickly become productive, and you don't think about the sustainable development of such a modality.' (I\_6)

A business-related organisation emphasised that open-minded entrepreneurs who think out of the box are important to establish dual practices. Due to the proximity to the United States, a hire and fire mentality also prevails in Mexico, so companies are not always interested in offering dual practices as there is a large supply of workers. A development cooperation organisation explained:

'If they are local managers, who are strongly influenced by the US and their hire and fire [mentality], they have little understanding to this [dual] concept, because they say that the labour market is large, there are enough people looking for a job, and they will be trained to do the few things they need.' (I\_4)

## Feedback

The feedback process is primarily about evaluating the implementation and realisation of vocational education activities. It is also important that the results of the evaluation flow back into the decision-making process (Pierre & Peters, 2005). In the context of vocational education in Mexico, this takes place during meetings and at the round table organised by the German Embassy, in which numerous actors from German-speaking countries, but also representatives of the Mexican Ministry of Education, for example, take part. Overall, it can be observed that networks are being built up step-by-step at the macro (political/economy) level. Exchange and thus feedback are encouraged between the different groups of actors.

The exchange of ideas between trainers and teachers and network formation are slowly emerging at the microlevel as well. According to two companies, if vocational education organisations and companies cooperate, communication is also important, for example, during the selection process of learners or if there are problems with learners. Therefore, a connection must exist between the actors to adapt processes or develop solutions. Moreover, technical opportunities such as video conference tools enable to communicate easier transnationally, even if travel is not possible (see Pierre & Peters, 2005).

Positive feedback at both the micro and macro levels can support the popularity and demand for vocational education. As a development cooperation report, it is beneficial if more successes of dual practices are recorded. A company agreed with this argument. Especially for companies, more results of dual practices need to be visible. Return on investment is proof of success. According to a development cooperation organisation, it is only through the visibility of success that it is possible for more learners to participate in such dual training concepts in the future.

Furthermore, a development cooperation organisation stated that it is conducive when several companies join forces to train in a network at a microlevel. In contrast, company-specific training is challenging if the actors want change on a systemic level as the company-specific training does not scale up any further.

The interviewees also had structural suggestions for improving vocational education. A representative from a company, for example, stated that practical phases of learning should take place over a longer period in the company. Short practical phases are not realisable for the company:

‘For example, we only work with the [vocational education organisations] if they are going to be in dual mode because that at least gives them a year to a year and a half. But we don’t take (...) internships because it’s three months. (...) Otherwise, that part of the temporality doesn’t make us very happy. But we have also discussed it with the schools and since there are federal rules, they are like federal education ministry rules, it is not so easy to change.’ (I\_18)

Legislation plays a role when dual practices are implemented over a longer period. An exchange between companies, vocational education organisations and the state is particularly necessary. The feedback process needs to take place between several actors who are involved in the process of the implementation of vocational education.

## DISCUSSION AND CONCLUSION

Actors from German-speaking countries are continuously developing vocational education in Mexico. As mentioned in the chapters above, the various organisations are involved in different ways. There are the active players (especially the companies from German-speaking countries) and supporting players (see also Figure 1 in Section 2). As was highlighted in the findings, the various players perform diverse tasks. For example, the Mexican government and its organisations have become increasingly involved in recent years, with the Ministry of Education cooperating with many actors from German-speaking countries. They are working on the structuring of the different forms of vocational education, which is part of the goal selection. At this point, an increasing number of international actors, such as chambers of

commerce, development cooperation organisations and business-related organisations, are participating in the coordination process.

Regarding the facilitating and inhibiting factors within goal selection, the results show that, as already noted by Stockmann (2014), the common consensus and local conditions must be taken into account (see also Kühn et al., 2020). In this regard, Martínez-Izquierdo et al. (2020, p. 331) write: ‘(...) the success of any reform depends on the design of interaction with the social and economic context in which it is to take place, as well as the degree of agreement and dialogue achieved between government and social actors’. Interviewees confirmed that setting common goals is important. Similarly, it is important that political actors support dual practices in the long term. Political stability promotes the implementation of dual practices (Doner & Schneider, 2019). The Mexican dual system must match the conditions of the country, for example, that the chambers of commerce do not have to be involved in a dual approach. Similarly, the trade unions do not participate very much, because among other things ‘[p] olicymakers (...) institutionalised dual apprenticeships without introducing changes in the labour law to avoid political resistance from trade unions, leaving the labour rights of students unprotected’ (Valiente et al., 2021, p. 1). Contrary to other findings (e.g., Langthaler, 2015) the results of this study show that the actors from German-speaking countries perceive the Mexican contextual conditions and try to react to them accordingly.

In terms of decision-making, local conditions also come to the fore (Stockmann, 2014) because the participation of local actors is crucial (Vogelsang, Röhrer, Fuchs, et al., 2021). The choice of the right actors to participate needs to be carefully considered. Furthermore, the results show that bottom-up decision-making must be included. However, decision-making processes in Mexico are challenging because the states organise themselves. Doner and Schneider (2019) also state that top-down concepts for vocational education are stronger in some upper-middle-income countries.

The actors from German-speaking countries are contributing to the mobilisation of resources. Financial resources are important here but, as various interviewees pointed out, Mexico lacks qualified people at vocational organisations who themselves have the relevant skills. This is supported by Pilz (2017) and Stockmann (2014), who emphasise the importance of qualified personnel. Moreover, vocational education organisations and training centres should be equipped with the necessary facilities and features such as machinery and tools. These must meet the demands of the companies. Accordingly, resources are an important element (Pilz, 2017).

Regarding the implementation of dual practices in Mexico, the interviewees also pointed out the importance of the motivation of the companies (Gonon, 2014; Martínez-Izquierdo et al., 2020; Oeben & Klumpp, 2021; Wieland, 2015). In addition, information is important not only to improve the image but also to increase the motivation of companies. The interviewees mentioned the involvement of chambers of commerce and associations as one way of informing companies. At the same time, companies that already offer dual practices serve as role model. All these measures increase the motivation of the companies. This shows that this type of dual training is not strongly ingrained in the Mexican company culture (Vogelsang, Röhrer, Fuchs, et al., 2021). In addition, the fear of poaching is evident in Mexico (Muehlemann & Wolter, 2011). It is possible that there are other reasons for the lack of motivation, such as the increased costs when companies offer dual concepts or the insufficient benefit (Berger & Pilz, 2010; Wolter & Joho, 2018). If a cost-benefit analysis were carried out for Mexico, more precise insights could be gained.

There are different opinions regarding feedback. In Mexico, there is a feedback process in which a wide variety of actors exchange ideas and further develop the Mexican dual training system. For example, the ‘Acuerdo Secretarial’ was relaunched and the round table was founded. Nevertheless, some suggestions have been made in our research that could still be implemented. One suggestion to improve vocational education is to lengthen the practical periods the learners spend in the companies, as Röhrer et al. (2021) discovered in their study. Two other actors from German-speaking countries pointed out that more obvious successes through vocational training are necessary. Wieland (2015) also points out this aspect. Likewise, the interviewees stated that it is more successful when companies train in a network and no company-specific training takes place. With more and more joint projects by various Mexican and actors from German-speaking countries, more and more organisations can be involved in the coordination process and closer cooperation can take place.

The results show that different aspects promote and inhibit the coordination of the actors involved. Although obstacles are noticed by actors from German-speaking countries, many players continue to be active in Mexico in different ways (see also Kühn & Holle, 2021). Various interviewees express that they see the potential for offering dual concepts in the country (see also Fuchs et al., 2021).

Several limitations of this study should be noted. Only actors from German-speaking countries are included in this study, which limits the understanding of the Mexican perspective. For this reason, research on the perspective of the actors of the host country is necessary. However, actors from German-speaking countries can comment on Mexican structures, politics and culture. Moreover, most of the interviewed actors have been in Mexico frequently, have worked with actors in the country for years or are on site all the time. This means that the provided insights do not relate to just short-term projects, but come from long-term cooperation with Mexican actors from various organisations. In addition, by interviewing different groups of actors, it was possible to acquire a multiperspective and thus also verify statements about other organisations.

With regard to facilitating and inhibiting factors, further research is necessary because the results of this study cannot be directly transferred to other countries in Latin America, as the countries themselves differ in terms of the way they organise vocational education (Schränk, 2020).

Nevertheless, it can be pointed out that, in addition to the implications for Mexico, the findings also provide important insights for the transfer and implementation of dual training models for other countries to gain further country-specific knowledge. It is clear that in the academic debate on transfer, the focus should not only be on the recipient countries (Bird & Heitmann, 2009; Li & Pilz, 2021), but that the perspective of the locally involved actors from the donor countries is of decisive relevance for the success of the transfer.

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