



LEADVET



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Mapping networks and roles in Vocational Teacher Education
Project Results 1

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Leadership Interaction in Sustainable Partnerships to Enhance
Continuous Improvement of Vocational Teacher Education- LeadVET

Project Result (PR) 1

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Abstract

This report on PR 1 aims to map networks and roles in Vocational Teacher Education. In a literature review, first of all techniques for determining the roles of TVE/VET leaders should be identified. In a second step, a network analysis is carried out using the snowball technique to identify the networks for each partner. A survey is to be conducted to assess the relevance of individual network activities for overcoming HR challenges. Furthermore, this survey aims to identify areas where this is particularly difficult and to assess alternative teacher recruitment options from the schools' perspective.

Keywords

Leadership, literature review, network, analysis, HR Process, Attraction, Recruitment, Induction, Onboarding, In-Service-Training, Retention, VET, Vocational Educational Training, VTE, Vocational Teacher Education

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1 Framework for Mapping Networks and Roles in VTE – Project Results 1

1.1 Purposes of PR1

1.1.1 Initial situation, needs analysis and target group

The overarching ambition of the LeadVET project is to strengthen VET Leaders, to extend sustainable partnerships and networks, to improve teacher education for vocational schools and thus to enhance Vocational Educational Training.

Vocational Education has problems in recruiting sufficient teachers of high quality, especially in industrial and commercial sectors such as computing and construction, and public sector fields such as health and social care. This is because the connections between the three main stakeholder groups (school universities, employers) are currently weak and insufficiently understood.

The target group that is affected by this problem and accordingly needs innovations at this point are vocational schools, university vocational teacher education departments, employers, prospective and current VET teachers as well as vocational teacher educators

1.1.2 Interlocking of PR 1 with the other PRs, expected impact and transferability potential

PR 1 will support all other results, including the development of a model in PR 3 for how Vocational Teacher Education (VTE) can develop permanent structures for developing curriculum and learning practices it so supports the collaborative development of in-service training in PR2 and the learning videos of PR 4 The mapping exercise will also facilitate the identification and development of mentoring relationships and mentoring competences of key staff members in PR3

PR 1 will provide a scientific basis for working with partnerships, networks, leaders and others to span the boundaries between multiple sectors involved in VET As a suit of this PR and the other PRS based on PR 1, LeadVET as a whole will lead to:

1. Increased recruitment of VET teacher students into VTE

2. Increased quality of vocational teachers entering the profession
3. Increased ability of professionals to combine teaching with working in industrial or other sectors
4. Increased quality of supervision of apprentices, interns, trainees due to part-time VET teachers having better knowledge about learning and teaching
5. More practice-oriented teaching and learning in VTE

The work of LeadVET and especially of PR 1 is potentially transferable to VET teacher recruitment, education and employment outside the partner institutions and their respective countries.

1.1.3 Course of work

Leaders in Higher Education or Teacher Education regarding Teachers in Vocational Educational Training (TVE) and also Vocational Educational Training (VET) leaders move in networks to strengthen the theory-practice link and recruitment and take on specific roles there. Within a literature review, it will first be determined which networks in TVE and VET can be distinguished across countries. The different stakeholders will also be taken into account. In addition, the literature review will clarify which techniques can best be used to empirically record such networks. In the empirical part of this result, relevant VET networks will then be identified through interviews and other survey techniques. The LeadVET partners will initiate contacts with other relevant stakeholders, but they will also provide data themselves. Furthermore, the literature review will identify techniques for determining the roles of TVE and VET leaders. This activity will be followed by an empirical phase of data collection. The written report from PR 1 presents both literature reviews, the techniques used and the results of the empirical work.

PR 1 helps to reach the overarching ambition of the LeadVET project. VET leaders should be strengthened so that sustainable partnerships and networks can be extended to improve teacher education for vocational schools and at least enhance Vocational Teacher Education.

1.2 The conceptual model

The starting point for the conceptual model is the HR process or, more precisely, the HR challenge. The HR process consists of five phases Attraction, Recruitment, Induction or Onboarding, In-Service-Training and Retention. Each of these phases has its own challenges

that VET and TVE leaders face. For example, VET leaders ask themselves, how to attract VET teachers for my school or how to choose ideal VET leaders from the applicants. In the project, it is assumed that networks as well as professional partnerships represent a solution approach to overcome the respective problems of the different phases of the HR process. It is necessary to ask which partners as well as networks help to solve the problems of attraction or recruitment. Within these networks, which are seen as a solution approach, there are different tasks for the leaders to hold in order to manage the network. For this, it has to be asked what are my tasks as VET and TVE leaders to keep this network running and working.

All further products, which together amount to PR 1, are based on this understanding of the conceptual model.

1.2.1 Leaders in LeadVET

The term “leader” requires a definition at this point, as it is essential for the project on the one hand and for PR 1 on the other hand. The understanding can be illustrated by the following graphic:

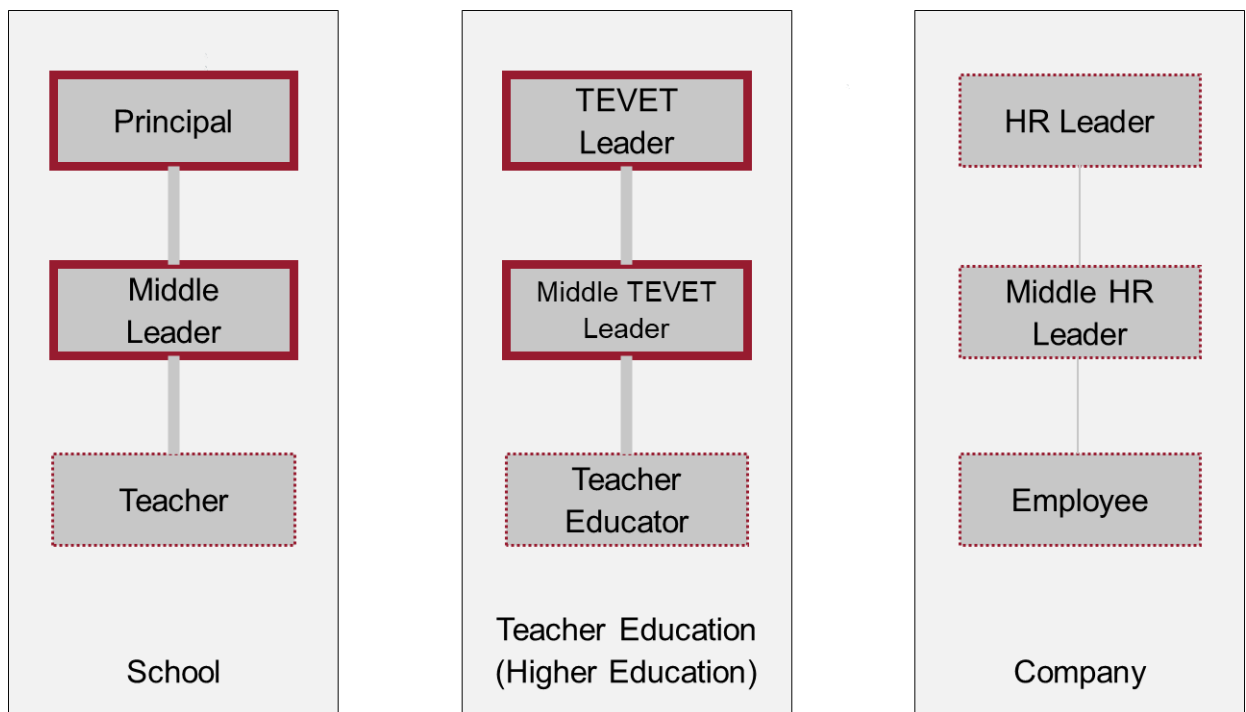


Figure 1: Leaders in LeadVET

Against the background of the network idea, LeadVET distinguishes between three institutions: schools, universities and companies. Within these institutions, there are usually hierarchies. At the schools, the headmaster is the leader. This is followed by a middle management level, called middle leaders, and finally there are teachers who teach at the school. In Higher Education, which happens regularly at universities and which is responsible for teacher education, there is a leader at the top who is responsible for teacher education for vocational educational training (TEVET; TEVET must not be confused with TVET, as TVET is for Technical Vocational Education and Training and thus refers especially to the technical part of VET). Below that, there is also a middle management level and finally the teacher educators. In the companies, everything concerning education is organised somewhat differently. Personnel development is a part of the HR department, if it is a functional organised organisation. The HR department itself has its own manager and a middle management level. “At the bottom” are the regular workers of the HR department. The employees who work in HR mostly work along the HR process, whereby individual phases are also bundled, for example Attraction and Recruiting. Among them there are also HR developers.

All positions outlined in red are VET leaders in the sense of the LeadVET project application. LeadVET's focus is primarily on schools that need teachers, want to have them further developed and want to retain them in the job, as well as on Higher Education, which supplies schools with new and best educated teachers. Companies are somewhat left out of this consideration. They do not provide leaders in the sense of LeadVET, but they are indispensable as network partners to attract and recruit new teachers. It is important, that not only the top leaders are part of networks and partnerships. Middle managers also play their role in strengthening networks and partnerships and thus to enhance them.

1.2.2 Networks in the context of LeadVET

Once the conceptual model and the role of the leader in LeadVET have been clarified, the next step is to define networks and partnerships in the sense of LeadVET. Networks in general consist of elements, in this case institutions, between which relations exist.

Looking at the different word fields that serve as the basis for the literature review, which will be explained in more detail later, it becomes clear that each of the nations involved in LeadVET uses different forms and features highlighted for networks and partnerships. It seems that each of the four partners has different demarcations to partnerships and networks. This is largely

due to the fact that some of the language families are different. However, German and Norwegian, both of the Germanic language family, are still most likely to have the same understanding.

- Norwegian: Nettverk, Allianse
- German: Netzwerk, Partnerschaft, Allianz
- Turkish: Bağ, ilişki, iş birliği
- Finnish: Verkosto, Allianssi, partneri

This different demarcation becomes particularly clear when the terms of the respective mother tongue are translated into English or into the other three languages. For example, the Turkish term “Bağ” translates roughly to the English term’s “band” or “bunch”, which for non-Turkish speakers can be understood almost allegorically. Nevertheless, a common understanding is possible.

Networks, that consists of elements, between which relations exist, can be depicted in LeadVET, that differentiates between companies, schools and Higher Education as follows.

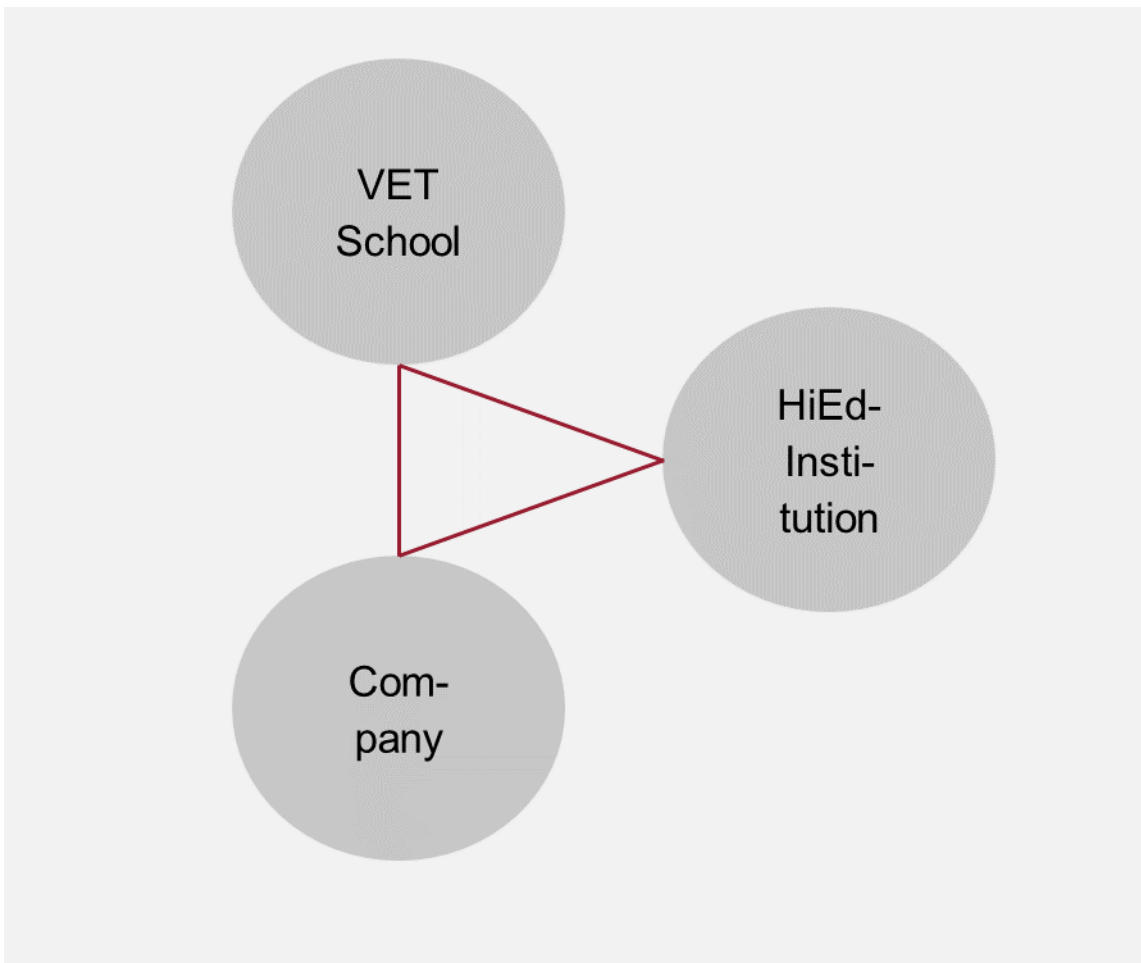


Figure 2: Networks in LeadVET

For LeadVET, the general notion of a network is defined with regard to the objectives of the project.

For LeadVET the general notion of a network is defined with regard to the objectives of the project. Taking the German partner as an example, Higher Education would be represented by the university, i. e. Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU). Against the background of teacher training, the school is not a regular school, but a university school as offered at the Nuremberg location, e. g. the Commercial Vocational School 4 (B4) Nuremberg for business professions. Finally, companies are also part of this network. At FAU, there is close cooperation with DATEV, a software house and IT service provider for tax consultants, auditors and lawyers, but also for their clients, such as medium-sized companies, municipalities, associations and institutions. DATEV supports teacher education at FAU.

Not only the elements or institutions that constitute a network, but also the nature of the relationships is of great importance in networks. A distinction can be made between three different types of relationships in networks: Market relationships, hierarchical relationships and relationships based on reciprocity. With regard to various parameters, namely flexibility, obligation, decisions and climate, the relationships within networks can be assigned to one or the other type. For example, in hierarchical relations, the flexibility is low and the obligation middle to high pronounced, there is more dependency on decisions and there is more of a bureaucratic climate. However, fundamental for the relations in the core network in LeadVET are the relationships of reciprocity. Although flexibility is only moderately pronounced and obligation is moderate to high, just as in hierarchical networks, reciprocal relationships are characterised by independence in decision-making and a climate of trust

In summary, networks in LeadVET can be characterised as follows:

- They represent a middle ground between hierarchical and market relationships.
- Networks are not given; they develop in a certain time and context.
- Partners or institutions in networks are legally independent and operate in a logic of their own.
- Cooperation must offer long-term benefits for all parties involved
- Networks must form a social capital, which is similarly productive as financial capital or human capital

Partnerships, which are not excluded from this analysis, have almost the same characteristics as networks. The only difference is that partnerships are based on a formal agreement, e. g. in the form of contracts, whereas networks are more non-formally organised.

2 Research design of and methodological approach to PR 1

2.1 Division into qualitative and quantitative elements and presentation of tasks

There are several tasks within PR 1 that are mainly led by FAU. The other partners, NTNU (Norway), HHU (Finland) and AU (Türkiye) support each of the tasks with the experience and work from their nation. According to the application, at first literature review parameters have to be set so that the review can be conducted. Parallel to the literature review, stakeholders

have to be identified for all partners. The results of the review and the identification finally leads to the survey. The survey has to be prepared as well as the interview protocols. After data collection, the data will be prepared, analysed and finally be summarised in this present report.

All in all, PR 1 consists of three different products, literature review, network analysis and survey, each with a different methodological approach. While the literature review and the network analysis are part of qualitative research, the survey is part of quantitative social research. In this chapter, the methodological approach is described for each of the three products, before the respective results are presented in the following chapter three.

Due to the intensive collaboration within the project team and in order to maintain the readability of the report, the literature is not inserted after each statement in the report, but reference is made globally to the results of the literature review in Chapter 6.

2.2 Literature review to identify techniques for determining the roles of TVE/VET leaders

Both, the needs analysis and the conceptual model have already been presented above. The idea is that strategic networks and partnerships around VET schools can help to overcome challenges in the HR process, that consists of the five steps attraction, recruitment, induction, in-service-training and retention, for VET teachers and this results in tasks for VET leaders, who are principals and middle leaders in VET schools as well as TEVET leaders and middle TEVET leaders.

Based on this idea, the following research question can be derived for the literature review

What tasks do VET leaders need to take on in managing networks so that networks help address the challenges in HR process for VET teachers?

This main research question can be broken down into further sub-research questions along the steps of the HR process.

1. How is the concept of network defined (in the literature in the respective language)?
2. Which partners are helpful in meeting the challenges in the HR process for VET leaders?
 - a) Which partners are helpful in meeting the challenge of attracting VET teachers?
 - b) Which partners are helpful in meeting the challenge of recruiting VET teachers?
 - c) Which partners are helpful in meeting the challenge of induction VET teachers?

- d) Which partners are helpful in meeting the challenge of in-service training for VET teachers?
- e) Which partners are helpful in meeting the challenge of retention for VET teachers?
3. What are the tasks for VET leaders to help these networks address the challenges in the HR process for VET leaders?

Since the literature review is a joint effort of the four partners, an overarching search strategy must be defined in order to coordinate the work on it. First, the key search words must be defined. The English terms “Network”, “Induct*”, “Attract*”, “Recruit*”, “In-Service-Training”, “Retent*”, “Middle lead*” and “Principal” were defined by the project team. It is upon each country to translate them and also their synonyms into their own language. The respective search terms are to be linked to specific connections to the epistemological interest via the database search function (AND). The AND NOT function is intended to exclude certain terms from the search strategy. For the terms of the HR process and “Middle lead*” and “Principal” there were the terms “Companies” and “Enterprises”. Networks, one of the main key terms, should not be associated with “technical” networks or “social media” so that these terms were also excluded. Each country chooses national databases that promise to produce good results in the language for which the partner is responsible and search with the translated key terms. Mendeley was chosen as the literature management database because it is English-language and can be used by everyone without a licence. Frank Seith as a student assistant supported the team by managing the literature in Mendeley.

The following technical criteria applied to all partners:

1. The selected contributions had to be of appropriate methodological quality, which was ensured by publication in specialist journals. Monographs and contributions in collective works were also acceptable after critical review. Where possible in the databases, only peer-reviewed contributions were selected.
2. The contributions had to contain results that were related to the search terms used and could answer the research question.
3. Since this report aims to cover the entire state of research on the research question, the year of publication of the contributions was neglected.

These premises were defined as exclusion criteria:

1. Obviously not relevant to the topic
2. Weak research
3. Document not available or maybe behind a paywall

Each partner was expected to keep a record of the literature search. The protocol contains five products.

- Product 1:
 - o List of search terms that have been used. That includes individual terms and their combinations, in plain language and in the notation for the database, for example after truncation.
 - o Documentation of the number of documents returned in all databases
 - o Number of excluded documents
 - o Informally additionally indexed documents
 - o Total number of documents or references that will be evaluated with regard to the research question
- Product 2: List of databases used with their URLs
- Product 3: Obviously weak research, thematically obviously not relevant and possibly other reasons that have not been mentioned in the exclusion criteria
- Product 4: Transfer of the found documents or references to Mendeley
- Product 5: Short answers to the research questions in English with reference to the literature sources. The content of the articles must not be described, there should only be a documentation in relation to the research questions

Each partner was instructed to use a three-step screening process when reading any articles found by the search strategy. First, the titles and abstracts of all articles found were examined. If the articles met the inclusion criteria mentioned above, the full texts of the articles were to be read. If these articles still met the inclusion criteria, they were included in the final selection. In order to avoid missing further potentially relevant literature that was not found with the original search strategy, additionally the snowball technique was used. This meant that in the bibliographies of the articles was searched after potentially other relevant articles or references. All in all 278 references from German, English, Norwegian, Finnish and Turkish literature were included.

2.3 Network analysis via snowball technique to identify the networks for each partner

In order to fulfil the task “Identification of stakeholders for each partner”, a network analysis was carried out. Four partners from four different countries means that there are four different school and higher education systems. In addition, the companies in all four countries are

organised very differently. Accordingly, the networks are not only very extensive, but also very complex. In order to capture these networks that exist around the three main institutions, schools, higher education and companies, the partners were instructed via written open questioning to trace the networks over three iterations. The aim of the document is to capture generic LeadVET networks in the project team. The basis is ego-centred institutional networks that are developed using the snowball technique. Due to the specific concerns in LeadVET, three focal points are set first, which are the basis for further consideration. Those are the already outlined a) VET Schools, b) Higher Education institutions that train teachers and c) companies.

In the first iteration, the partners should name a specific example for each institution. Since the project partner countries are all responsible for teacher education, in the case of Higher Education it is their own university that they name. For the schools, they name partner schools, which often function as university schools. In Norway, for example, Charlottenlund upper secondary school, which is also officially involved in LeadVET, will be named. Last but not least, a company is chosen that cooperates closely with the Higher Education institution as well as with the schools and is also involved in teacher training. Now, in the second iteration, the most important partners should be named for the school for higher education and for the company. Each country should not list again the institutions, that are already considered in the previous consideration. Here, the partners can consider partnerships as well as relations via the market or hierarchical relations. The basis of the relationship with the partner may or may not be a formal contract.

Iteration 1: Fill in the first iteration

1.1	Short name in English	Stadin AO
	If available: Abbreviation	Stadin AO
	Short name in own language	Stadin AO
	Official name in English	Helsinki Vocational College and Adult Institute
	Official name in own language	Stadin ammatti- ja aikuisopisto

1.2	Short name in English	Haaga-Helia
	If available: Abbreviation	Haaga-Helia
	Short name in own language	Haaga-Helia
	Official name in English	Haaga-Helia University of Applied Sciences
	Official name in own language	Haaga-Helia ammattikorkeakoulu

* Teacher education for VET

1.3	Short name in English	Social Services, Health Care and Rescue Services Division
	If available: Abbreviation	
	Short name in own language	Sosiaali-, terveys- ja pelastustoimiala
	Official name in English	Social Services, Health Care and Rescue Services Division. City of Helsinki
	Official name in own language	Sosiaali-, terveys- ja pelastustoimiala. Helsingin kaupunki

* Teacher education for VET

Figure 3: Excerpt from the open survey for the first iteration (School, Higher Education, company)

This process, according to which a further partner should be found for each specification, takes place over three iterations. Finally, the results from the text document are transferred into a mind map, which is created with the software tool Mindmanager.

2.4 Quantitative element of the research: Empirical survey

2.4.1 Objectives and construction of the survey instrument

Based on the results of the literature review and the network analysis, the research is to be made quantifiable by means of an empirical survey. After answering the (sub)research questions of the literature review and visualising the networks for each nation, the main objective of this survey is an assessment of the relevance of individual network activities for overcoming HR challenges and a supplementation of possible network activities for overcoming HR challenges. That means that the difficulties of recruiting teachers in vocational

education training should be identified. Furthermore, this survey aims to identify areas where this is particularly difficult and to assess alternative teacher recruitment options from the schools' perspective.

In a first question, participants are asked to indicate on a scale from very easy to very difficult how difficult it is to find teachers in the sectors mentioned. This is done in the form of a Likert scale, where each item represents a sector from vocational education (among others agriculture, forestry and fishing; mining and quarrying; manufacturing; construction; education; administrative and support service activities). If the participants are not active in the mentioned sector, there is the possibility to tick "does not apply to me" (all sectors can be read again in the results).

For the following two questions, the participants should indicate the section in which is the bottleneck most pronounced. At first, they should rate on a scale from "not at all important" to "very important", how important they view the proposed recruitment channel. For all channels presented, it applies that these are either may be established or, in their view, should be developed and explored. The specified channels include traditional teacher training routes (recruiting ready-trained teachers); dual training, i. e. students study and work (paid and coordinated) at the school; combined training, i. e. students take over tasks at the school at times (e. g. regular classes, tutoring courses); awarding scholarships or grants to students (with or without teaching responsibilities at the school) etc. (all recruitment channels can be read again in the results). In a free text entry, the participants can indicate further ways and possibilities how teachers can be recruited.

At second, the participants should state on a scale from "not complex" to "very complex", how important they find the (same) given channels. The recruitment channels can either be established or in their view, should be developed and explored. Not complex means that the school could implement this with effort, but with comparatively little effort.

Finally, the participants indicate which of the partner countries they come from and what their role is (principal; other leadership role at a school; active in teacher education; active in government, ministry, municipality or the like; others). If the participants are interested in the results of the survey, they can give their email address at the end to which the survey results can be sent. All in all, the survey should not take longer than five to ten minutes.

2.4.2 Sampling and collection method

Regarding the sampling, there are only a few restrictions. As a convenience sampling applies the maxim “we take the ones we get” as the network, that may seem large, is though difficult to acquire. There won’t be a strict statistical sampling, there is no social profile survey and no predefined sample sizes. In general, the respondents should be stressed for as short a time as possible. Otherwise, experience has shown that there is a high dropout rate. The survey addresses whether middle leaders or school management. Subgroups of the sample will be VET schools, especially school principals as well as middle leaders and also Higher Education institutions, especially persons responsible for teacher education and training who are not necessarily managers.

As can already be seen in the previous chapter, the questionnaire mainly consists of closed questions in the form of a Likert scale. There is only one open question relevant to the research question. The questionnaire was prepared by student assistant Frank Seith from FAU in English and then sent to the partners, who translated it into their mother tongue.

Unipark was chosen as the software. A short disclaimer on data protection was included at the beginning of the survey. The collected data is collected by the FAU and managed and processed within Germany in accordance with the German Data Protection Regulation (DSGVO), which is subject to the regulation of the EU. The data is processed using processes that guarantee the highest level of anonymity for the participants and do not allow any conclusions to be drawn about individual persons.

After the survey was developed, the partners sent the link to the questionnaires to the target group of their country. The questionnaire was online between 06.04. and 31.08.

3 Results of the research of PR 1

3.1 Results of the literature review

3.1.1 Attraction of teachers

Regarding the first sub-question of the literature review, which partners are helpful in meeting the challenge of attracting VET teachers, the primary goal is to present schools as attractive

employers for potential teachers. The task of the universities in the network is to give students the opportunity to participate in teaching and school life, for example via a university school concept. They also should realistically present work opportunities and conditions in schools and integrate partners from school who report on their living environment. The task of companies is to participate in school activities, for example external evaluation of schools. Other possibilities how companies can help to attract teachers is to provide resources for in-service education of teachers at vocational schools, improve working conditions and enable opportunities for understanding other institutions. In this network, schools can help attracting new staff by promoting the teaching profession to students, which are in school during an internship or in connection with research.

3.1.2 Recruiting of teachers

The main goal is to bring interested individuals into employment as teacher quickly and appropriately for the job assignment. In order to achieve this goal, universities help by increasing the number of study places in various programs that train teachers generally. They can also support by catching up on formal prerequisites, for example bridge courses or crash courses. Another organisational assistance from universities is the aligning of end dates of university processes with the typical hiring dates of schools, so that there is no idling between the end of the studies and the start of the new job. Companies are less in demand at this stage of the HR process. The literature review did not identify any opportunities for companies to support at this stage. Schools however can participate in special programs that allow for employment even if the formal requirements are not met and allow for catching up on these requirements.

3.1.3 Induction of teachers

The induction of teachers means to effectively introduce newly hired teachers to teacher responsibilities, the social environment and the values and norms of the school. They need to be onboarded. Since it is a process, that happens mainly at school, the universities are not involved in the induction of new teachers, unlike companies which can provide dialogue spaces and mentoring for new teachers to strengthen the practical relevance of the content of VET teaching. The schools are definitely the most important partner in this network. They can develop, implement and evaluate a standardised induction program for teachers. That can also include courses, that can be offered for new teachers across schools. To overcome the

practice shock new hired teachers, have after learning theory at university, mentoring or group learning can help here. It is upon the schools to set up such programs. At last, school can establish a support for networking with professional practice.

3.1.4 Education of teachers before service

The original intention was only to research in-service possibilities for teachers in line with the HR process. However, the literature also provided many suggestions for training before actually taking up the job. In this respect, these results are to be regarded as inductive, as they were not part of the original research interest. The training of teachers before service aims to develop competent teachers. This, in turn, is often the task of universities. They have to ensure that the teacher education is aligned with the needs, areas of responsibility as well as current and future challenges in schools. In this context, it especially applies to vocational schools that they have to ensure, that the training of teachers is oriented towards the tasks, fields of activity as well as current and future tasks in companies. The companies itself can help in this network by facilitate practical training in their institution, for example in the context of internships. There could also be joint projects or a cooperation with institutions of teacher training in vocational education. From the point of view of the schools, these cooperations with universities can take place through university schools.

3.1.5 Education of teachers in service

Once the teachers have been trained and are working at the school, it is important to provide them with continuous professional development. Also, they should adapt the competences, they have learnt whether in university or through other courses. Universities have a special role to play here. Even if the former student of the university is now a teacher at school, they still can continue the education of the teachers with special programs. The university schools already mentioned can also provide support here. The mentors who supervise students benefit just as much from this concept as the students do. With research and development projects with the school, universities can help to further develop the competencies of participating teachers. No less important are companies for in-service-training of teachers. They can provide instructors for internal professional development at the school or let teaching staff participate in internal company training programs, for example introduction of a new generation of machines used in the company. Likewise, they can support teachers and, if applicable, students in the development of learning materials. It seems that schools are the most important

partner in the network when it comes to in-service training of teachers, but nothing was found in the literature on this subject.

3.1.6 Retention of teachers

Satisfied teachers remain at a school. Therefore, the goal is to have teachers at the school who enjoy teaching and developing the school and teaching on the one hand and on the other hand to prevent career interruptions, and counteract internal resignation. Once again, all three partners of the network are in demand. Universities are in dialogue with the schools, whereby the training conditions are to be adapted to teachers who are already working. Trends such as new work, which are becoming more and more widespread in companies, can possibly also be transferred to teaching work. Companies can provide advice on how these conditions can be implemented in schools. Schools should enter into dialogue with universities to find out which training programmes are important to meet the needs of individuals and schools and also to adapt them. Under the motto "Value and promote dual identity", teachers should be valued accordingly both as teachers and as professionals in a professional field. With regard to working conditions and leadership, the companies can be used as a model and further developments can be promoted there through support of companies as well as universities, which are researching this.

3.1.7 Additional findings of the literature review

In addition to the research questions identified, the literature review brought up other interesting results. Especially with regard to the attraction of teachers, the initial point in the HR process for recruiting new staff. However, these points cannot be assigned to a specific partner, which is why they are dealt with separately in this chapter.

The network is very important for improving the attraction of teachers. It is a task of all partners together, no one can avoid it. In addition to the two well-known partners of schools, universities and companies, ministries and comparable other institutions are particularly important. It is not only the top management level that has to attract new teachers. The importance of the middle management level is not to be underestimated.

When it comes to meeting spaces, physical meeting spaces are still strongly emphasized. In contrast, virtual spaces are hardly used in the literature. The trend, which is mainly known from the HR process in companies, that applicants and companies are brought together through

social media, is so far hardly to be found at all at the schools. As far as the future role of social media is concerned, it is kept under wraps.

The literature review also revealed some limitations of the LeadVET approach, which attributes a significant role to networks. Networks alone are not the way forward. It is also about the status of the teacher. Accordingly, status-enhancing measures must be taken and status-decreasing measures must be prevented.

3.2 Network maps as a result of the network analysis

The networks within the individual countries that were identified with the help of the snowball technique or the open survey are difficult to depict on individual slides due to the size of the networks and the number of branches. For this reason, the graphics must be accessed externally via QR-Code as follows.

Finland



Germany



Norway



Türkiye



3.3 Results of the survey

3.3.1 Overall survey data

A total of 73 people took part in the survey, which was conducted in the four partner countries. Norway had the most participants with 31, followed by Germany with 17, Türkiye with 16 and Finland with 9. In terms of the positions of the participants, the majority were school principals (29 persons or 43 %), followed by other leadership roles (27 persons or 40 %). Teacher educators accounted for 11 % (or 7 persons) of the total. The least likely to take part in the survey were people from the ministry, government etc. and teachers (2 persons or 3 %).

The following pie chart graphically illustrates the positions of the participants:

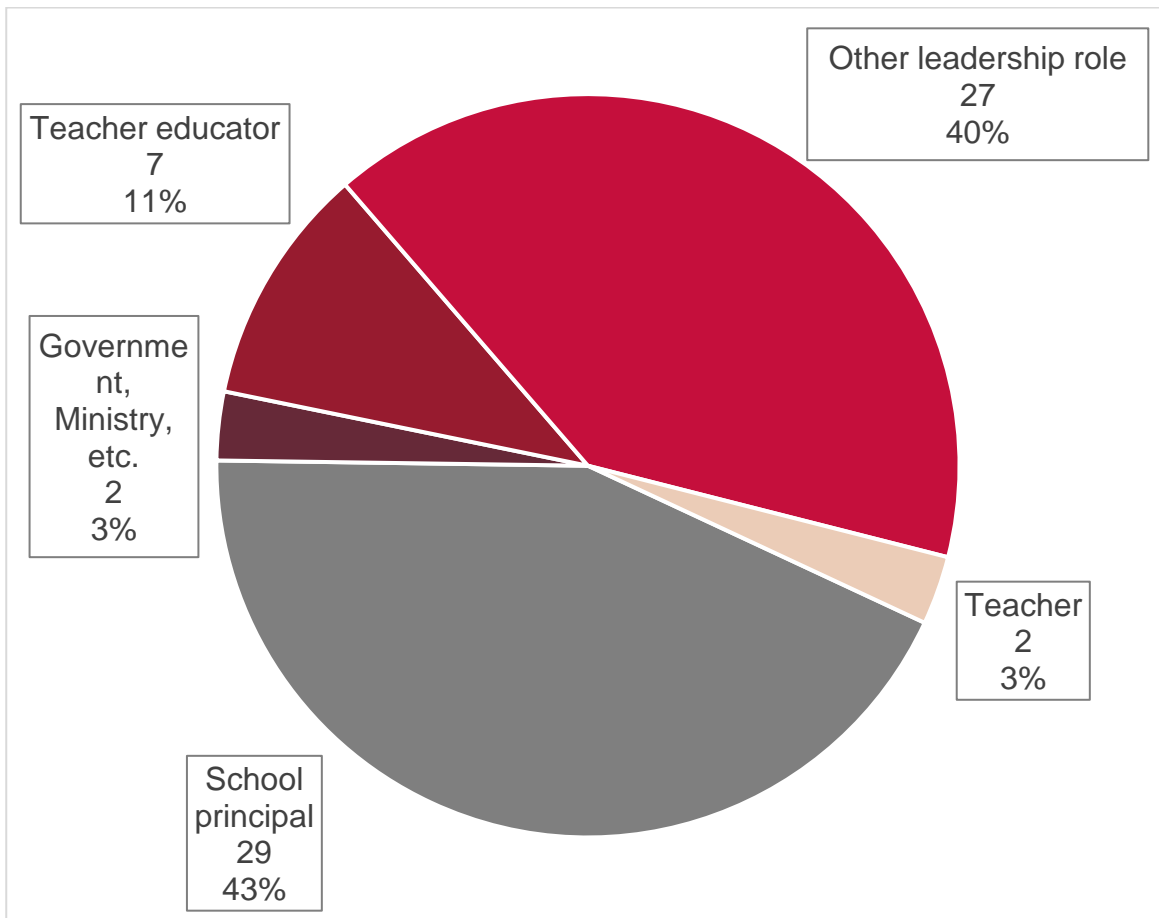


Figure 4: Positions of the participants of the survey

3.3.2 Results for each country

3.3.2.1 Results from Germany

In the first question, participants were asked to answer how difficult it is to find teachers for the sectors mentioned. If the respondents could not give any information because they are not active in these sectors, there was a possibility to select the answer “does not apply”. This is also the reason why the total number of participants does not correspond to the data per sector.

The following replies were submitted for Germany:

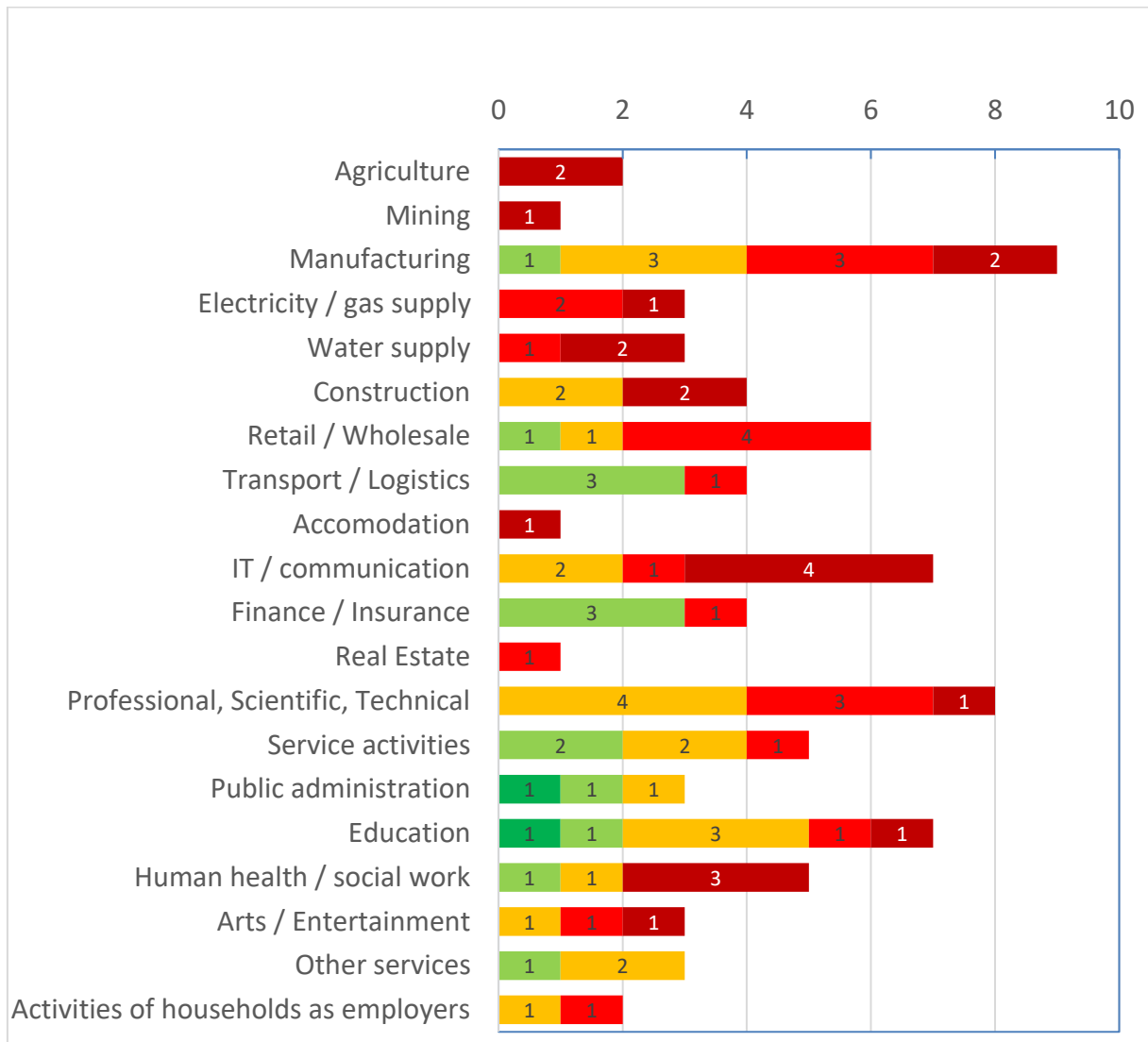


Figure 5: Results to question 1 from Germany

Thin green means very easy, light green easy, yellow neither, red difficult and dark red very difficult. (Particularly) difficult was it to find teachers for the sectors of manufacturing, electricity and gas supply, water supply, retail and wholesale, IT and communication, professional, scientific and technical as well as human health and social work. It is comparatively easier to find teachers for the sectors of transport and logistics, finance and insurance, public administration as well as education. In Germany, compared to other countries, votes were often abstained from. There are far fewer green-marked, i. e. only a few sectors where it is easy to find teachers. This could be due to the fact, among other things, that teacher training or vocational schools in Germany are often oriented towards subjects, especially in urban areas. In this respect, it is difficult to make statements about other sectors. The principal of a

commercial-technical school can only speak for his school and accordingly cannot say what the situation is like for his colleague at a commercial-business school.

The second question should answer how important the given recruitment channels are. Dark red stands for not important, red for less important, yellow for neither, light green for important and dark green for very important.

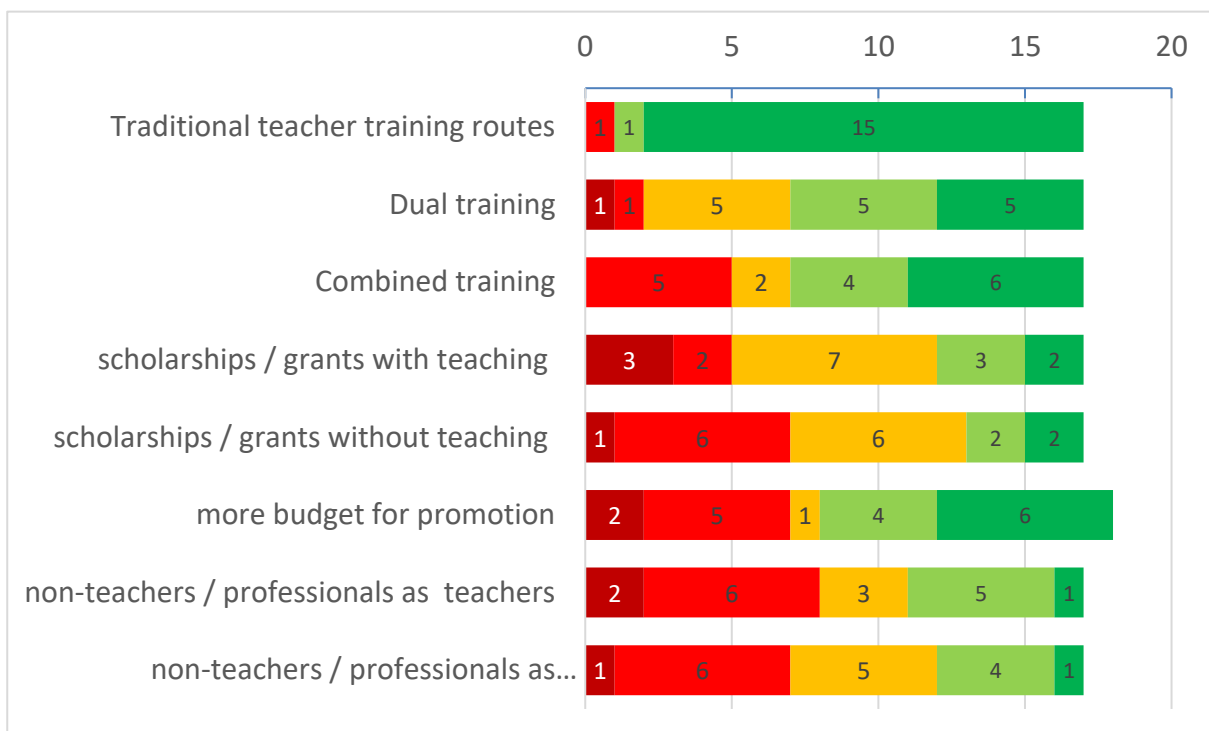


Figure 6: Results to question 2 from Germany

At this point, it can already be said that the first item, traditional teacher training routes, is considered important or very important in all countries. This is also the case in Germany. Only one person thinks it would be less important. Apart from that, the opinions on the other items are very evenly distributed. This is particularly evident in the case of scholarships or grants with teaching. Five people who believe it is (less) important are compared with five people who believe it is (very) important. Seven people feel neither. While neither was frequently ticked for all items, opinions are obviously divided when it comes to more budget for advertising. Seven think that more budget is less important, ten think it is (very) important. Only one person thinks neither. Dual training does not correspond to the balanced pattern. This is considered important or very important by ten people. Only two people find it not or less important.

In the second question, respondents also had the opportunity to give open-ended answers to the question of what other possibilities they see for recruitment. The German participants felt that the State Ministry of Education in particular had a duty. Other answers for what other ways the participants see to recruit teachers were additional responsibilities for the teacher education, advertisement at specialist colleges regarding A-Levels, advertisement towards talented students and master students, who work as substitute teachers.

The participants should not only answer how important this recruitment channel is, but also how complex it is. Dark red stands for very complex, red for complex, yellow for neither, light green for less complex and dark green for not complex.

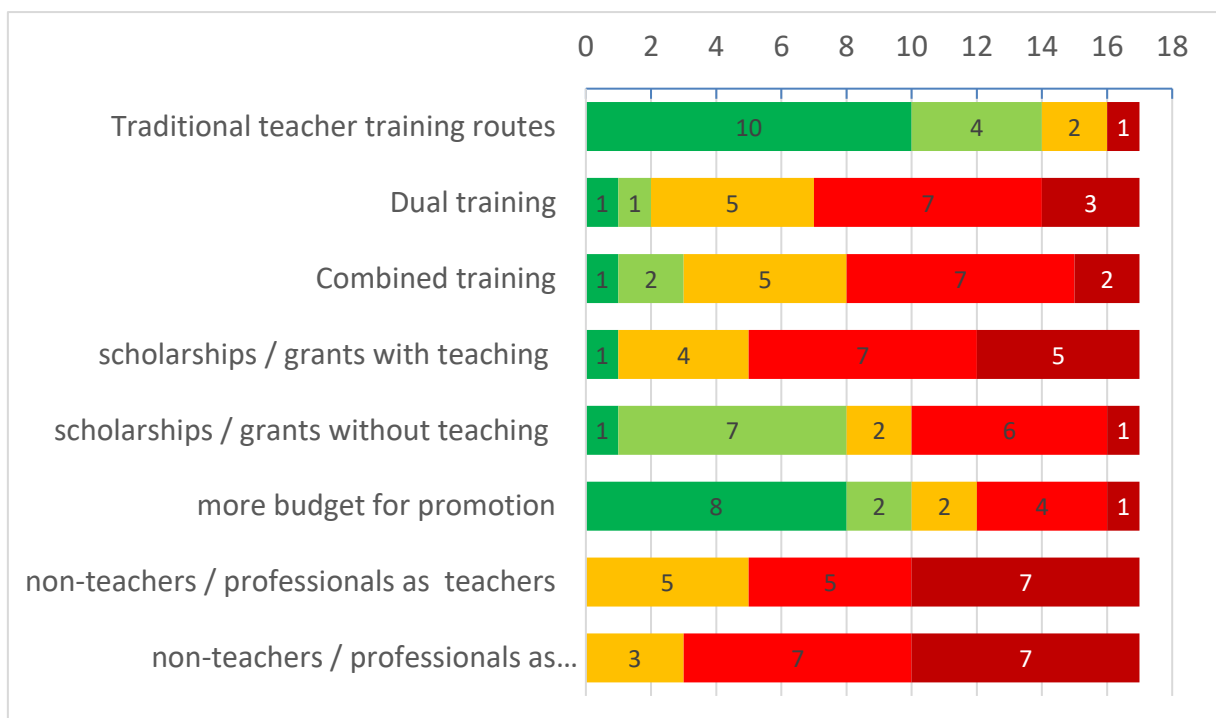


Figure 7: Results to question 3 from Germany

Analogous to the importance, traditional teacher training routes are also seen as less or not complex. On the other hand, the recruitment of non-teachers or professionals who work as teachers or substitute teachers are considered to be very or rather complex. While scholarships without teaching and more budget for promotion are comparatively seen as less complex, dual training, combined training and scholarships with apprenticeship are considered more complex here.

3.3.2.2 Results from Finland

The following answers were given for Finland.

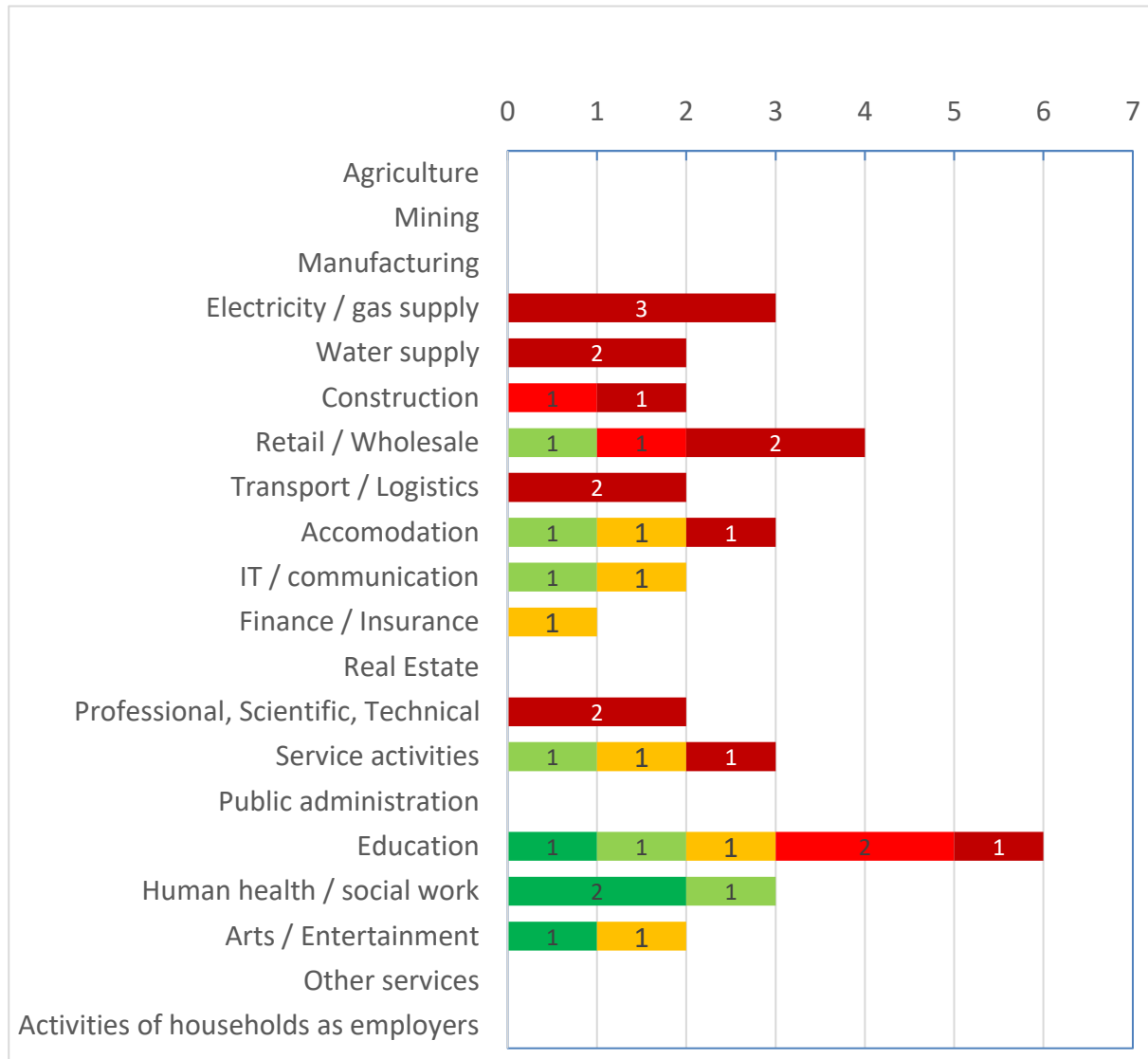


Figure 8: Results to question 1 from Finland

In Finland, even more participants abstained from answering. For the sectors agriculture, mining, manufacturing, real estate, public administration, other services and activities of households as employers very often “does not apply to me” was ticked, which is probably due to the fact that this country had the fewest participants anyway. The most difficult sectors to find teachers for are electricity and gas supply, water supply, retail and wholesale, transport and logistics professional, scientific, technical and education as can see above.

With regard to the importance of recruiting channels, the picture is similar to that in Germany.

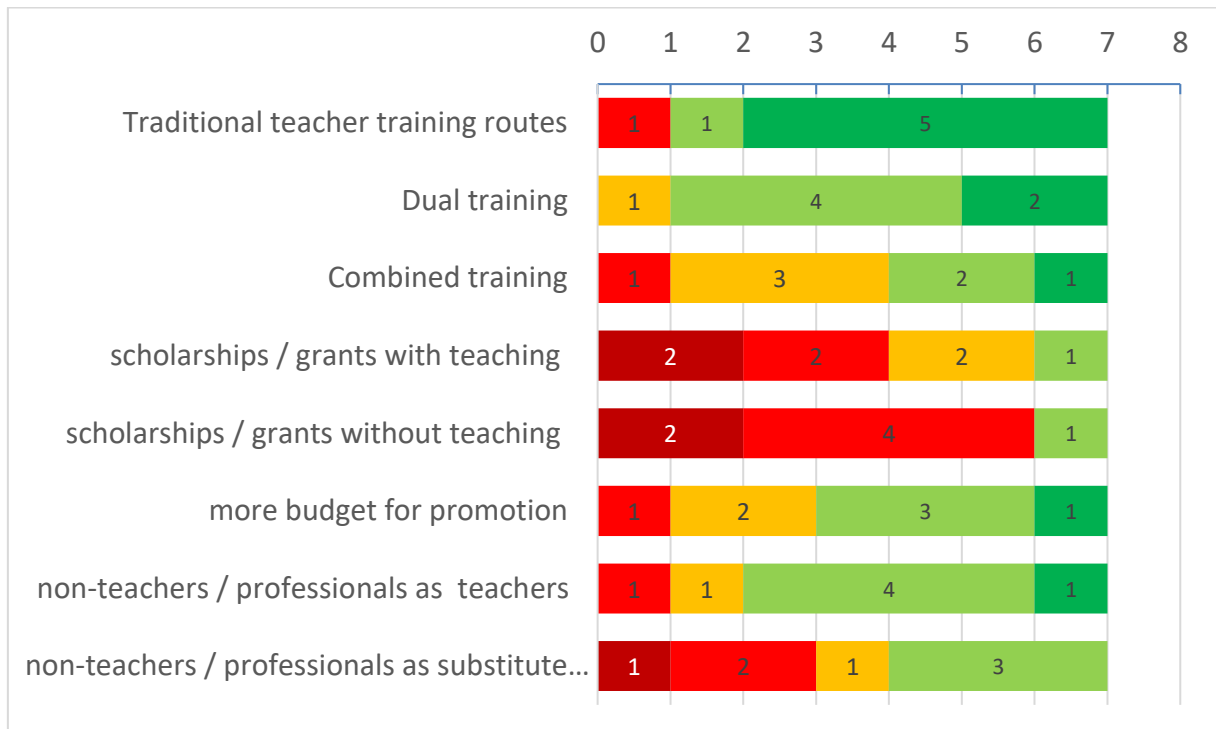


Figure 9: Results to question 2 from Finland

Traditional teacher training routes are also important in Finland. Comparatively few people ticked neither generally. Scholarships with or without teaching are less or not at all important there. Non-teachers or professionals working as substitute teachers or as “real” teachers are considered rather more important.

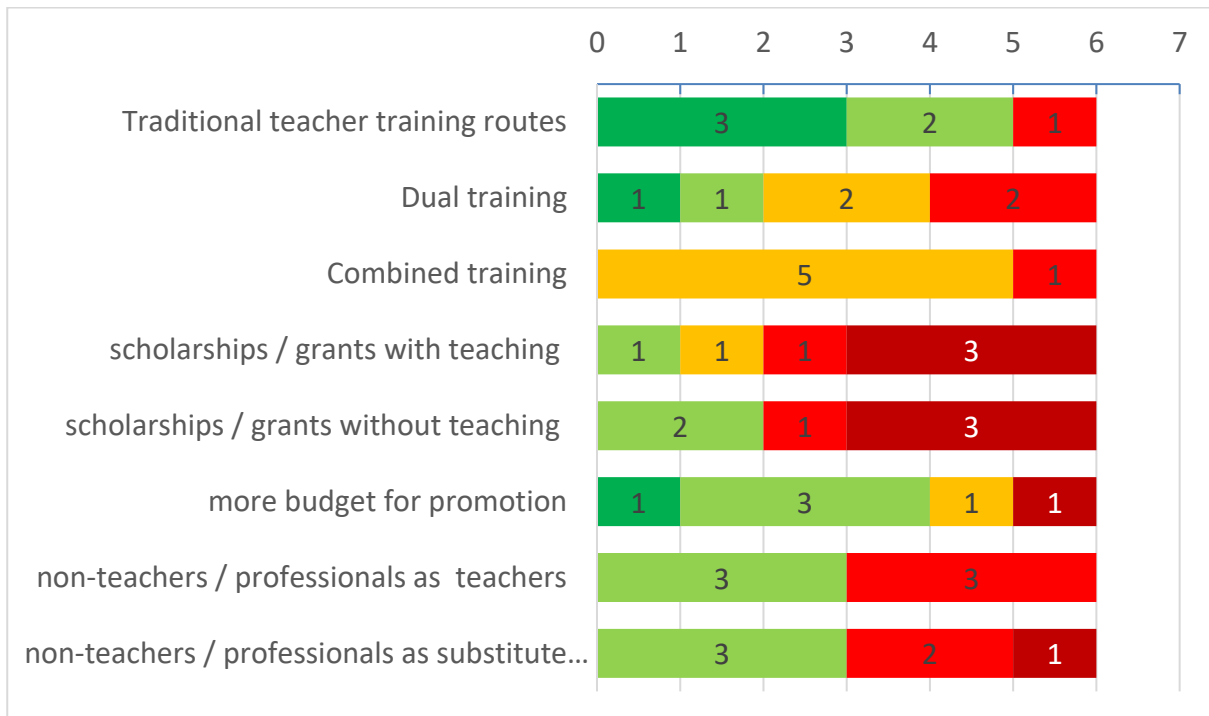


Figure 10: Results to question 3 from Finland

If the results for complexity are placed next to those for importance, it can be seen that those items that are considered less important are also more likely to be considered complex, and vice versa.

3.3.2.3 Results from Norway

Norway had the highest number of participants. Here, when asked about the difficulty in the individual sectors, an indication was given for all points.

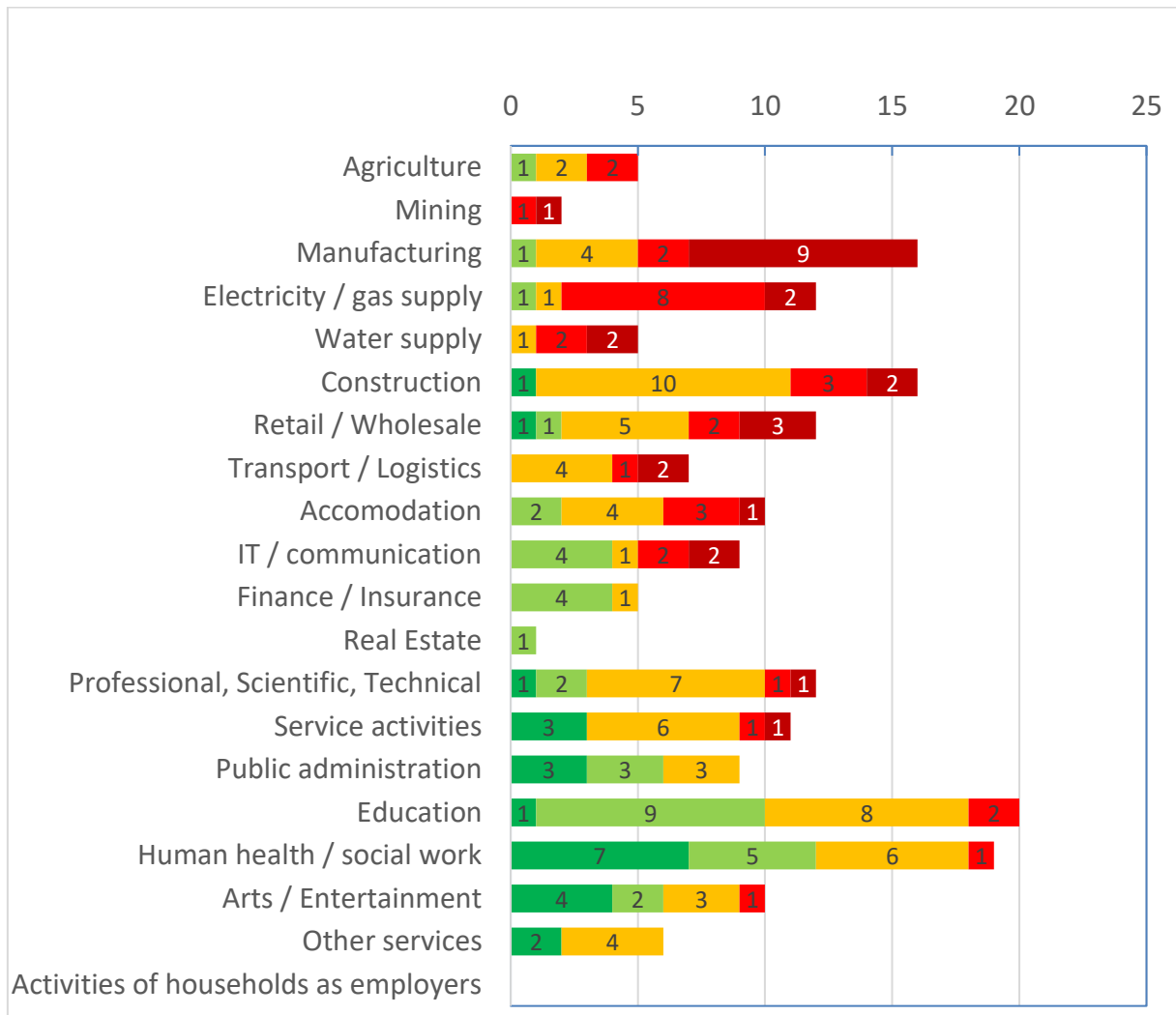


Figure 11: Results to question 1 from Norway

It is easiest to find teachers in the sectors public administration, education, human health and social work as well as arts and entertainment. Similar to Germany and Finland, it is also difficult in Norway to find teachers for the sectors manufacturing and electricity and gas supply. In addition, the sectors water supply, construction, retail and wholesale, accommodation as well as IT and communication are also considered rather difficult.

In Norway, the recruitment channels mentioned are almost all considered important.

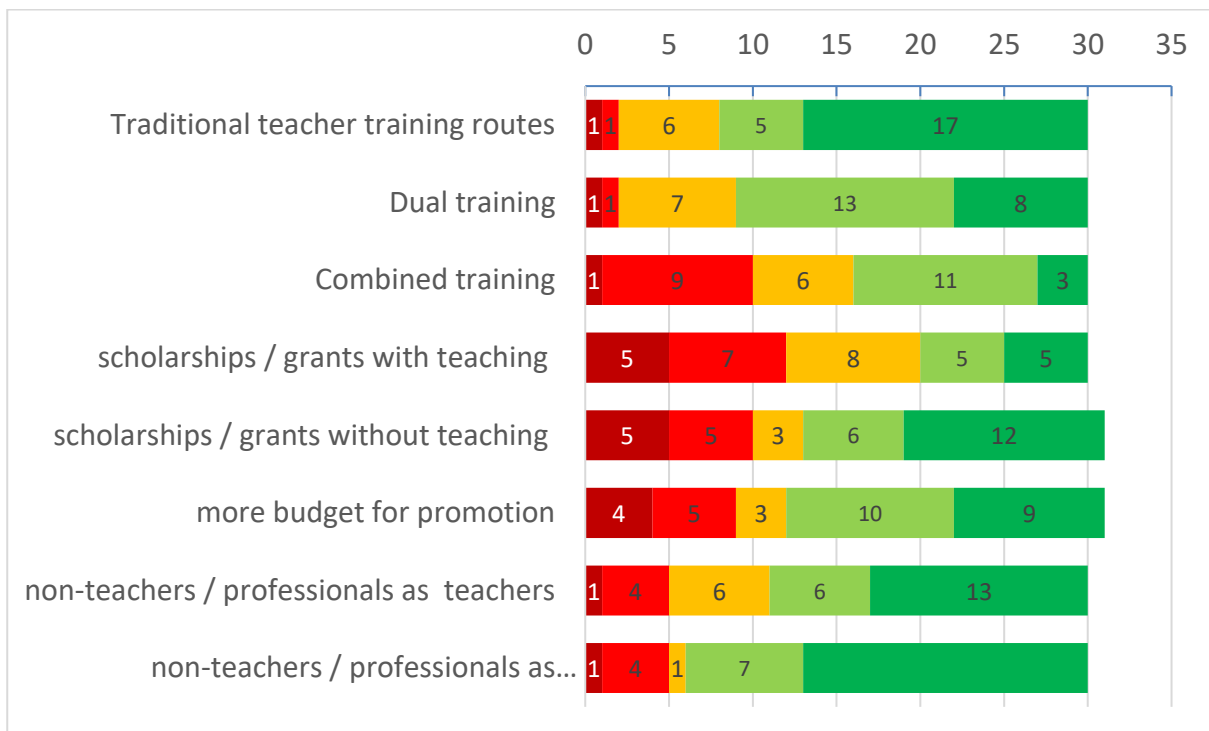


Figure 12: Results to question 2 from Norway

As in all other three countries, the traditional teacher training routes are very important in Norway. Almost on a par with these are non-teachers or professionals working as (substitute) teachers. Despite the fact that many routes are considered important, the scholarships or grants with or without teaching, the combined training and more budget for promotion stand out. These were relatively often considered less important.

While Finland did not provide any answers to the open questions, a few suggestions came from Norway on what other ways there are to recruit teachers. Among other things, the Norwegians suggested “recruitment from local businesses”, “trainee arrangements”, “ensuring that the teaching arenas meet the same requirements as the business world regarding safety, health and size”, “get in contact with students enrolled in education, for example career fairs or visit-us-days” and “use training offices and trade associations as a channel into labour in the business world. Workplaces that will have greater challenges in recruiting and hiring new employees can take a greater role in helping the schools with recruitment”.

The complexity of the respective recruitment channels is very balanced in Norway as can see below.

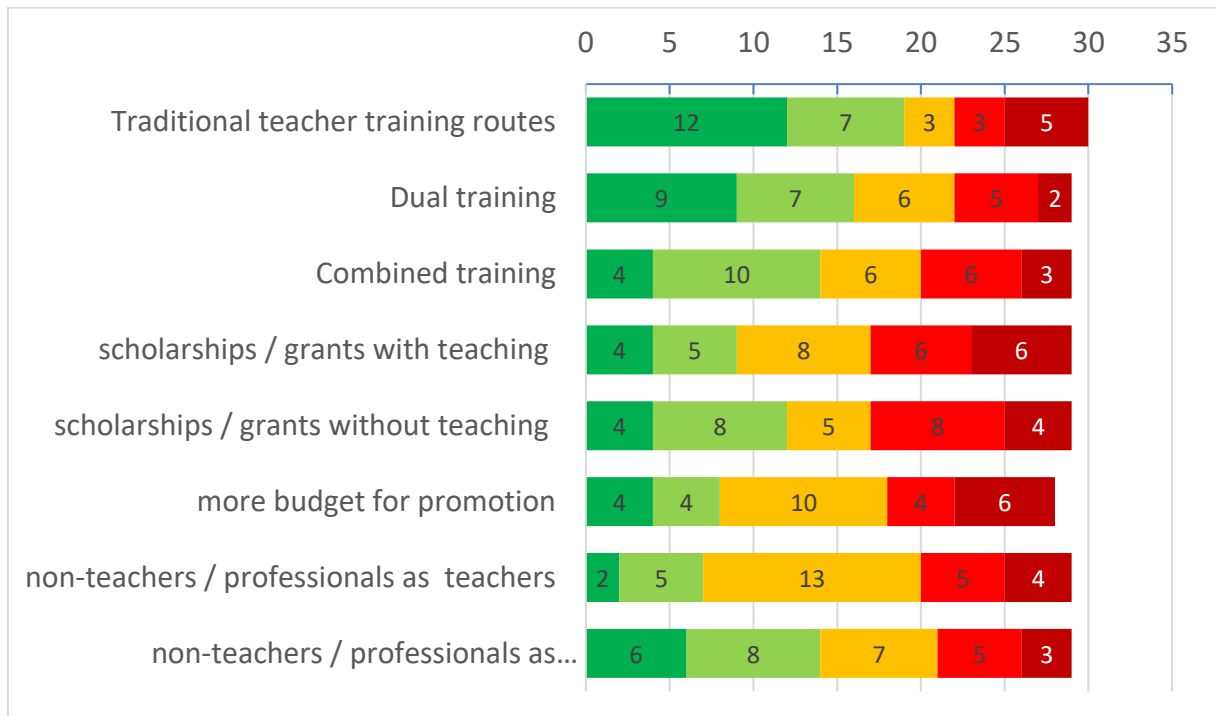


Figure 13: Results to question 3 from Norway

Noticeable are dual training and non-teachers or professionals working as substitute teachers. These two channels are almost on par with the traditional teacher training routes in terms of ease of recruitment. Otherwise, the picture is balanced in that, apart from the traditional teacher training routes, non-complex and very complex are almost equally often mentioned for the same channel beside a not insignificant number for “neither”.

3.3.2.4 Results from Türkiye

Finally, the results from Türkiye are presented. With regard to the first two questions, the picture from Türkiye is very positive compared to the other three countries, i. e. it is easy to find teachers for the sectors mentioned and each recruitment channel is given a certain importance. Of the respondents in Türkiye, fewer people also ticked does not apply.

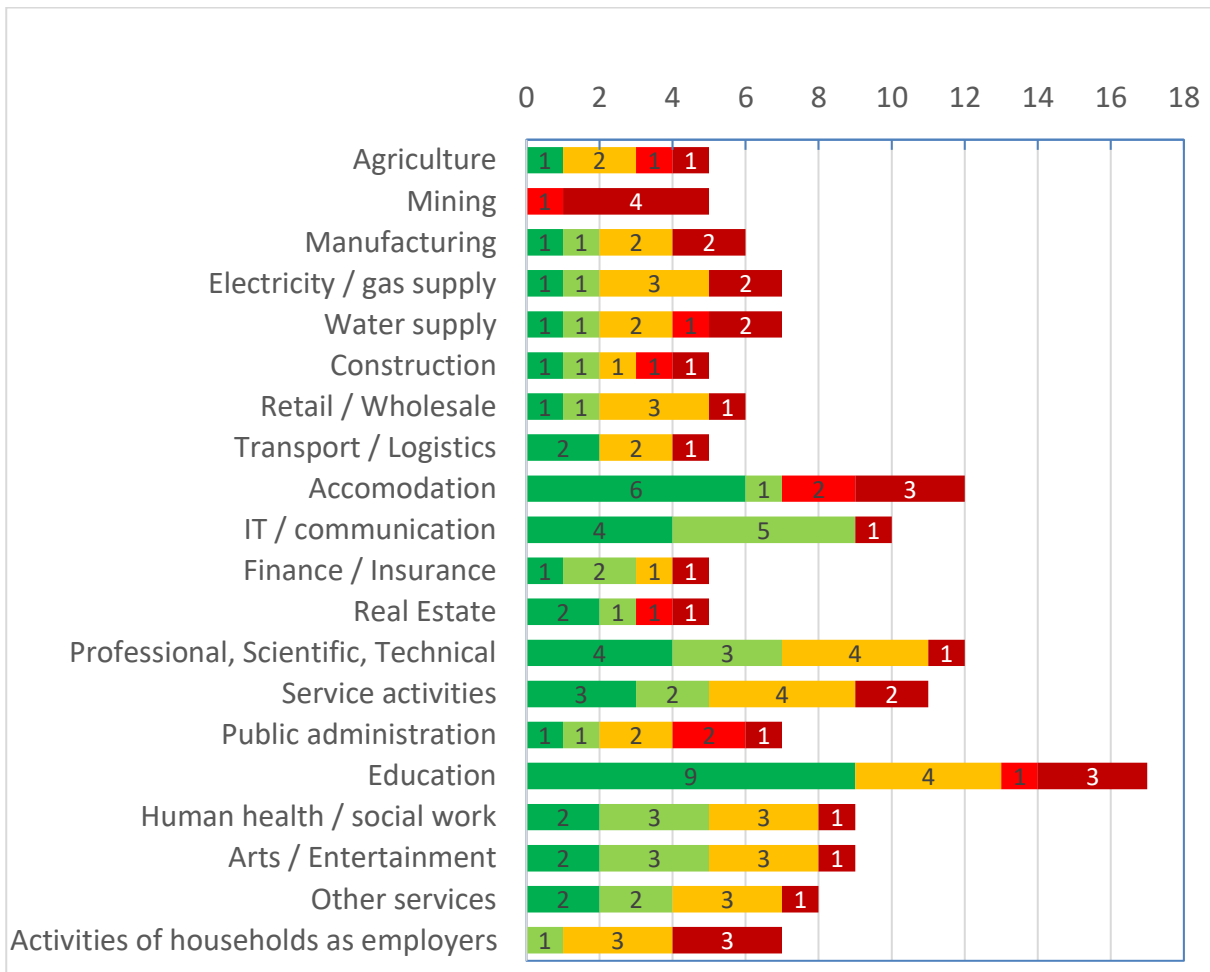


Figure 14: Results to question 1 from Türkiye

The easiest sectors to find teachers for in Türkiye are education, IT and Communication, professional, scientific, technical, service activities, human health, arts and entertainment as well as accommodation. Sectors in which it is difficult to find teachers, on the other hand, are mining. The six people who ticked very easily for accommodation are opposed to five people who find it (very) difficult to find teachers.

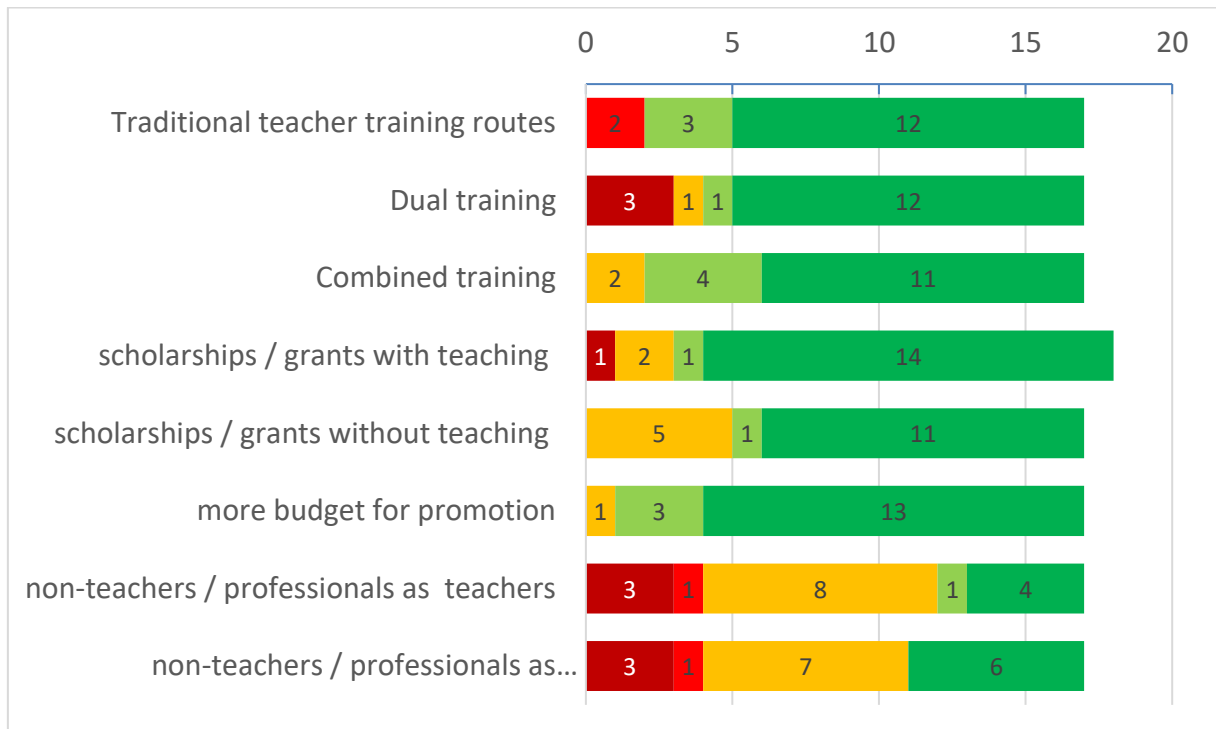


Figure 15: Results to question 2 from Türkiye

The general positive picture for Türkiye continues when the second question is asked about the importance of the channels cited. While in the other countries the traditional teacher training routes are seen as the most important, in Türkiye it is the scholarships or grants with teaching, closely followed by more budget for promotion, traditional teacher training routes and dual training. For non-teachers or professionals working as teachers or substitute teachers, the pattern is very neutral. More people have ticked neither, rather than choosing not important or important. When asked openly what other possibilities there are for recruiting teachers, two Turkish participants answered: “Recruitment must be merit and the ones who are experts in their field should be recruited” and “Postgraduate / Bachelor’s degree”.

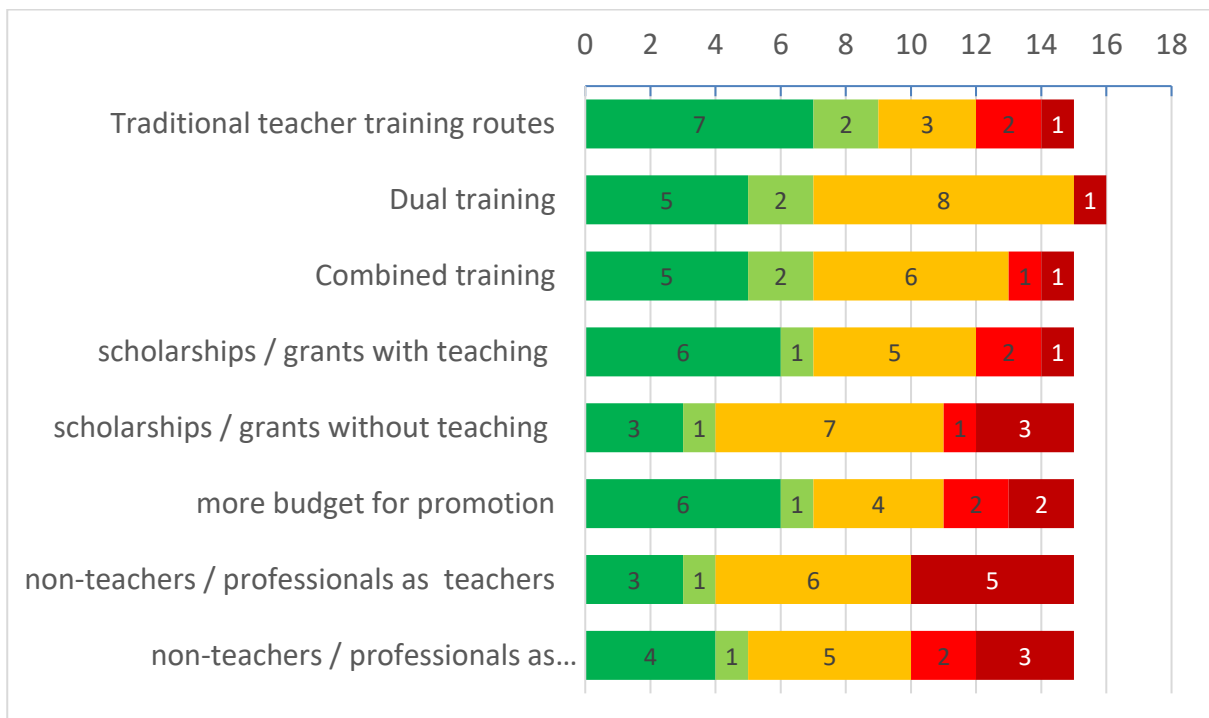


Figure 16: Results to question 3 from Türkiye

The answers to the question about the complexity of the channels are also very consistent for Türkiye. Apart from the channels traditional teacher training routes, dual training, combined training and scholarships or grants with teaching, complexity meets non-complexity with a comparatively large number of ticks for neither for the other cited recruitment channels.

3.3.2.5 Total results

In the following, the overall results of all four countries are presented again. The overall results are weight-adjusted, which means that every country has equal share.

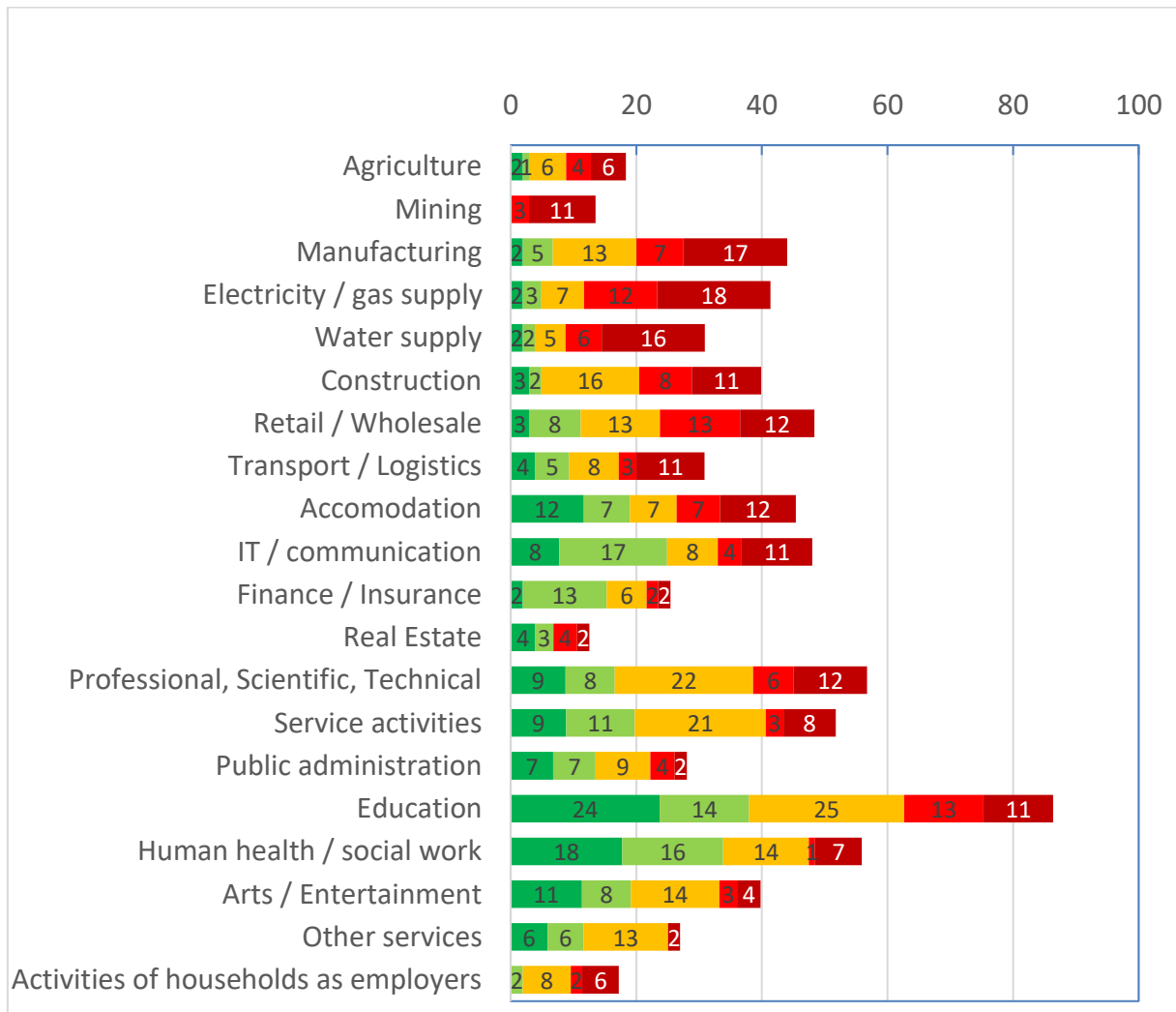


Figure 17: Total results of question 1

Overall, the results are clearer. It is very difficult to recruit teachers for the sectors: Electricity and gas supply, manufacturing, water supply, retail and wholesale, accommodation, professional, scientific, technical, construction, transport and logistics, education, IT and communication and mining (in descending order). Although it is difficult for education and accommodation to find teachers, actually more participants there ticked that it is (very) easy. Besides, the sectors human health and social work as well as arts and entertainment are also seen as (very) easy.

Considering the overall results for the importance of the recruitment channels listed, the following picture emerges. Here too, it applies that the total results are weight adjusted, which means every team has equal share.

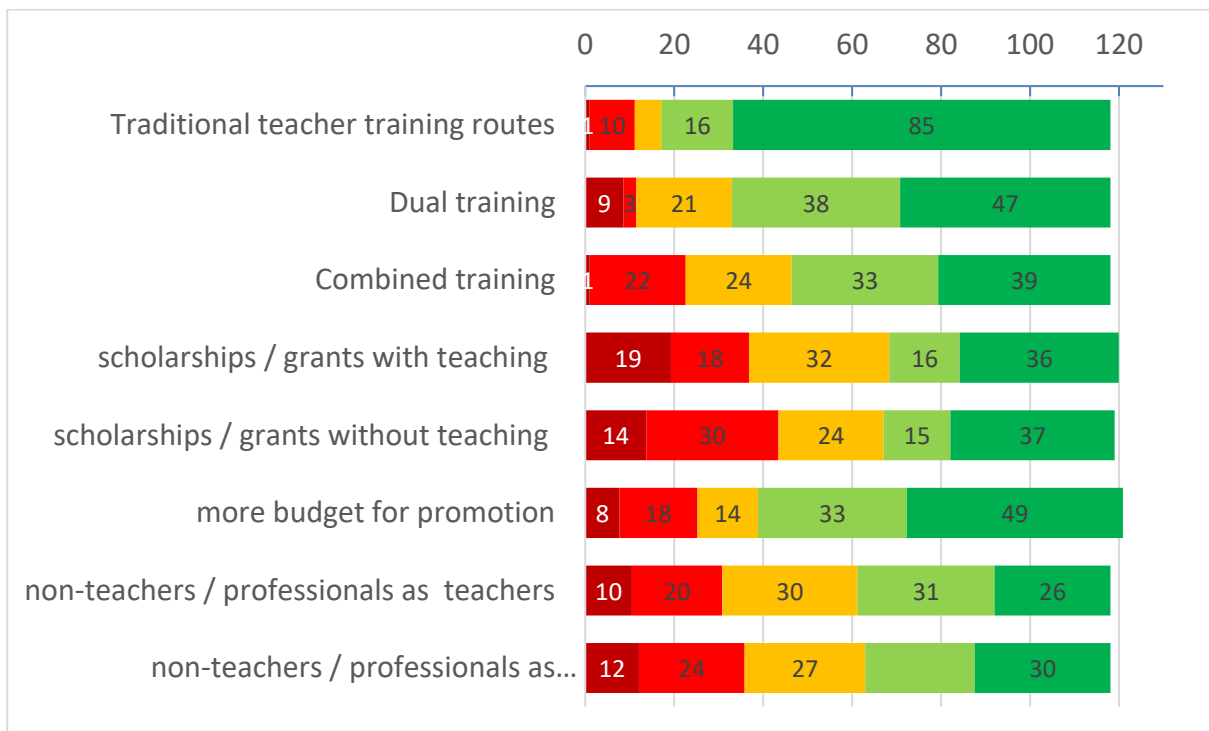


Figure 18: Total results of question 2

No other channel comes close to the traditional teacher training routes. Second most important is more budget for promotion. Those two channels are followed by (in descending order) dual training, combined training and finally the two forms of scholarships. The two forms of scholarships are at the same time the two recruitment channels that are considered least important. Then follow the two ways in which non-teachers or professionals work as teachers or substitute teachers.

The complexity of the recruitment channels proposed is even more balanced than the diagram for the importance.

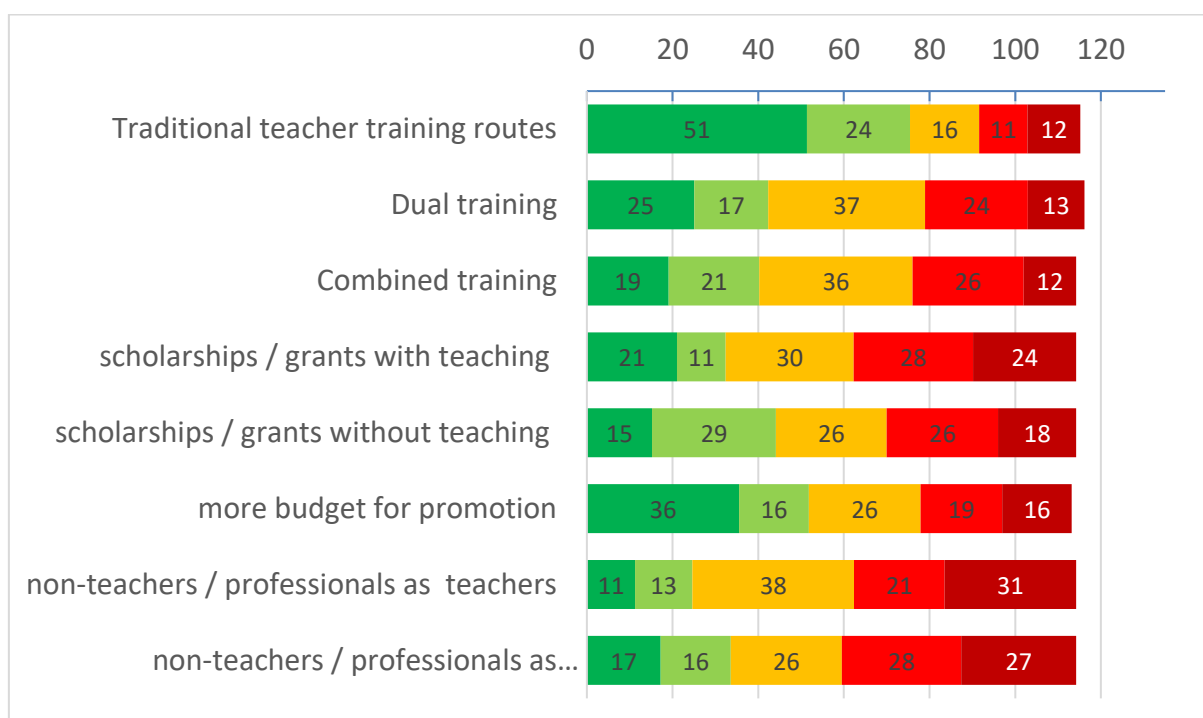


Figure 19: Total results of question 3

The two most important recruitment channels – traditional teacher training routes and more budget for promotion - are also the ones that are experienced as least complex. On the other hand, non-teachers or professionals working as (substitute) teachers are considered most complex. Those two recruitment channels are regarded as lesser important compared to the other channels anyway as can be seen above. Besides that, neither was ticked very often in general so that the complexity is experienced as very compensated.

4 Transfer possibilities

The application states that the work of LeadVET and especially the work of PR 1 is potentially transferable to VET teacher recruitment, education and employment outside the partner institutions and their respective. Through the work in PR 1, it is now known how the hurdles within the individual phases of the HR process can be overcome through networks or through the tasks within them by leaders. In addition, the survey has shown in which sectors it is perceived to be most difficult to attract new teachers, which recruitment channels are most important and at the same time most complex. Building on this work, a model for in-service-training for vocational teacher education can be fleshed out (PR 2) and it can be shown how the theory-practice gap can be closed by using mentors in VTE (PR 3). Finally, the findings

also help to develop learning resources for leadership and networking in vocational teacher education (PR 4).

5 Conclusion

With a total of 73 participants from four countries, a solid data set was generated, but more participants could be expected. Nevertheless, the survey as well as the literature review and network analysis provided important insights. The sectors identified by the survey as having difficulty in recruiting new teachers are in line with the known findings from literature. That traditional teacher training routes are not only important but also less complex is well known. The most interesting recruitment channels are those that are second only to the traditional teacher training routes. In order to be able to recruit competent teachers as a school, these channels in particular need to be expanded or promoted more.

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