

Literature Review for PR1 – Documentation and summary

Networks and Partnerships in VET
Germany, Norway, Turkey and Finland



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1 List of Search Terms

1.1 Germany (also Documentation Databases and Exclusion Criterias)

Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	Nach Ausschluss	Einzel-Syntaxen
Netzwerk	Netz, Allianz, Partnerschaft, Community, Gemein*, Geflecht	sozial, strategisch, persönlich, institutionell	Technisch; IT, social media, Informatik, Algorithmus	VET-Rep: 209 FIS-Bildung: 313	VET-Rep: 194 FIS-Bildung: 64	VET-Rep: Alle Felder FIS-Bildung: Freitext "Netzwerk" OR "Netz" OR "Allianz" OR "Partnerschaft" AND "sozial" AND "strategisch" AND "institutionell" AND NOT "social media" AND NOT "Informatik" AND NOT "Algorithmus")
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	Nach Ausschluss	Einzel-Syntaxen
Onboard*	onboard*, Einarbeit*, Einstieg, Einweis*, Einarbeit*, Unterweis*, Instru*, Einführ*	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium, Realschule, Mittelschule, Grundschule, Psych*, Musik	Vet-Rep: 109 FIS-Bildung: 750	Vet-Rep: 98 FIS-Bildung: 126+62	VET-Rep: Alle Felder FIS-Bildung: Freitext "Onboard*" OR "onboard*" OR "Einarbeit*" OR "Einstieg" OR "Einweis*" OR "Einarbeit*" OR "Unterweis*" OR "Instru*" OR "Einführ*" AND "Lehrkraft" AND "Lehrkräfte" AND

						<p>"berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium" AND NOT "Realschule" AND NOT "Mittelschule" AND NOT "Grundschule" AND NOT "Psych*" AND NOT "Musik"</p> <p>FIS-Bildung: ((Freitext: ONBOARD* oder ONBOARD* oder EINARBEIT* oder EINSTIEG oder EINWEIS* oder EINARBEIT* oder UNTERWEIS* INSTRU* oder EINFUEHR*) und (Freitext: LEHRKRAFT oder LEHRKRAEFTE oder "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder PSYCH* oder MUSIK)</p>
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	ausgeschlossen	Einzel-Syntaxen
Attract*	attrahier*, (an)lock*, Gewinnung, (an)werb*	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium, Realschule, Mittelschule, Grundschule,	Vet-Rep: 5 FIS-Bildung: 131	Vet-Rep: 5 FIS-Bildung: 41+5	"Attract*" OR "attrahier*" OR "lock*" OR "anlock*" OR "Gewinnung" OR "anwerb*" OR "werb*" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche

						<p>Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium" AND NOT "Realschule" AND NOT "Mittelschule" AND NOT "Grundschule"</p> <p>FIS-Bildung: ((Freitext: ATTRACT* oder ATTRAHIER* oder ANLOCK* oder LOCK* oder GEWINNUNG oder ANWERB* oder WERB*) und (Freitext: LEHRKRAFT oder LEHRKRAEFTE oder "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder GRUNDSCHULE)</p>
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	ausgeschlossen	Einzel-Syntaxen
Recruit*	einstell*, anstell*, rekrutier*, engagieren, berufen, verpflichten, akquirieren	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium, Realschule, Mittelschule, Grundschule	Vet-Rep: 0 Neue Syntax? FIS-Bildung: 1065	Vet-Rep: 0 FIS-Bildung: 297+132	"Recruit*" OR "einstell*" OR "anstell*" OR "rekrutier*" OR "engagieren" OR "berufen" OR "verpflichten" OR "akquirieren" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium"

						<p>AND NOT "Realschule" AND NOT "Mittelschule" AND NOT "Grundschule"</p> <p>FIS-Bildung: ((Freitext: RECRUIT* oder EINSTELL* oder ANSTELL* oder REKRUTIER* oder ENGAGIEREN oder BERUFEN oder VERPFLICHTEN oder AKQUIRIEREN) und (Freitext: LEHRKRAFT oder LEHRKRAEFTE oder "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder GRUNDSCHULE)</p>
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	ausgeschlossen	Einzel-Syntaxen
Fortbildung	Weiterbildung, (in-service) Training	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium , Realschule, Mittelschule , Grundschule, Sport	Vet-Rep: 0 FIS-Bildung: 12 (Alle AND- Attribute müssen vorkommen)	Vet-Rep: 0 FIS-Bildung: 5+1	VET-Rep: "Fortbildung" OR "Weiterbildung" OR "Training" OR "in-service Training" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium" AND NOT "Realschule" AND NOT

						<p>"Mittelschule" AND NOT "Grundschule" AND NOT "Sport"</p> <p>FIS-Bildung: ((Freitext: FORTBILDUNG oder WEITERBILDUN G oder TRAINING oder "IN- SERVICE TRAINING") und (Freitext: LEHRKRAFT und LEHRKRAEFTE und "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder GRUNDSCHULE oder SPORT)</p>
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheor etischen Interesse (AND)	Auszuschlie ßende Begriffe (AND NOT)	Ergebn isse	ausgesch lossen	Einzel-Syntaxen
Retent *	bind*, halten, beibehalt*, (ver)bleiben	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehm en, Gymnasium , Realschule, Mittelschule , Grundschul e, festhalten, Migration	Vet- Rep: 19 FIS- Bildung : 310	Vet-Rep: 19 FIS- Bildung: 79+33	VET-Rep: "Retent*" OR "bind*" OR "halten" OR "beibehalt*" OR "bleiben" OR "verbleiben" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium" AND NOT "Realschule" AND NOT "Mittelschule" AND NOT "Grundschule" AND NOT

						"festhalten" AND NOT "Migration" FIS-Bildung: ((Freitext: RETENT* oder BIND* oder HALTEN oder BEIBEHALT* oder VERBLEIBEN oder BLEIBEN) und (Freitext: LEHRKRAFT oder LEHRKRAEFTE oder "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder GRUNDSCHULE oder FESTHALTEN oder MIGRATION)
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	ausgeschlossen	Einzel-Syntaxen
Middle lead*	Mittlere Führungsebene, Abteilungsleitung, Bildungsgangleitung, middle management, Berufsbereichsleitung, Fachbereichsleitung,	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium, Realschule, Mittelschule, Grundschule	Vet-Rep: 2 FIS-Bildung: 3	Vet-Rep: 2 FIS-Bildung: Nur gedruckt	VET-Rep: "Middle lead*" OR "Mittlere Führungsebene" OR "Abteilungsleitung" OR "Bildungsgangleitung" OR "middle management" OR "Berufsbereichsleitung" OR "Fachbereichsleitung" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium" AND NOT

						<p>"Realschule" AND NOT "Mittelschule" AND NOT "Grundschule"</p> <p>FIS-Bildung: ((Freitext: "MIDDLE LEAD*" oder "MITTLERE FUEHRUNGSEBENE" oder ABTEILUNGSLEITUNG oder BILDUNGSGANGLEITUNG oder "MIDDLE MANAGEMENT" oder BERUFSBEREICHSLEITUNG oder FACHBEREICHSLEITUNG) und (Freitext: LEHRKRAFT oder LEHRKRAEFTE oder "BERUFLICHE SCHULE*")) und nicht (Freitext: UNTERNEHMEN oder GYMNASIUM oder REALSCHULE oder MITTELSCHULE oder GRUNDSCHULE)</p>
Suchwort	Synonyme (OR)	Spezifische Verbindungen zum erkenntnistheoretischen Interesse (AND)	Auszuschließende Begriffe (AND NOT)	Ergebnisse	ausgeschlossen	Einzel-Syntaxen
Schulleitung*	(Di)Rektor*	Lehrkraft, Lehrkräfte, berufliche Schule*	Unternehmen, Gymnasium, Realschule, Mittelschule, Grundschule	Vet-Rep: 9 FIS-Bildung: 3	Vet-Rep: 9 FIS-Bildung: 3	VET-Rep: "Schulleitung*" OR "Rektor*" OR "Direktor*" AND "Lehrkraft" AND "Lehrkräfte" AND "berufliche Schule*" AND NOT "Unternehmen" AND NOT "Gymnasium"

						AND NOT "Realschule" AND NOT "Mittelschule" AND NOT "Grundschule"

1.2 Norway

Nr	Searchterm	Connections	Exclusionary
1	((nettverk OR partner* OR allianse) AND (strategisk* OR sosial* OR personlig* OR institusjonell* OR lære*))	7248	None
2	((nettverk OR partner* OR allianse) AND (strategisk* OR sosial* OR personlig* OR institusjonell* OR lære*))	5369	
3	((nettverk OR partner* OR allianse) AND (strategisk* OR sosial* OR personlig* OR institusjonell* OR lære*))	2284	
4	((nettverk OR partner* OR allianse) AND (strategisk* OR sosial* OR personlig* OR institusjonell* OR lære*))	49	
5	((nettverk OR partner* OR allianse) AND (yrkesfag*))	77	
6	((nettverk OR partner* OR allianse) AND (strategisk* OR sosial* OR personlig* OR institusjonell* OR lære*) AND (yrkesfag*))		
7	((nettverk OR partner* OR allianse) AND (yrkesfag*))	33	None
8	((tiltrekk*) AND (yrkesfag*))		
9	((attraktiv*) AND (yrkesfaglærer*))		
10	((rekrutt*) AND (yrkesfag*))	104	
11	((rekrutt*) AND (yrkesfaglær*))	12	
12	((rekrutt*) OR (engasjere) OR (innleie) OR (leie*) OR (ansette) OR (forplikt*)) AND (yrkesfag*))		
13	((rekrutt*) OR (engasjere) OR (innleie) OR (leie*) OR (ansette) OR (forplikt*)) AND ((lærer*) OR (yrkesfaglær*) OR (yrkesfag*))	3039	
14	((rekrutt*) OR (engasjere) OR (innleie) OR (leie*) OR (ansette)) AND ((lærer*) OR (yrkesfaglær*) OR (yrkesfag*)) NOT ((selskap) OR (virksomhet) OR (bedrift) OR (barneskole) OR (barnetrinn*) OR (barnehage)))	817	
15	((rekrutt*) OR (engasjere) OR (innleie) OR (leie*) OR (ansette)) AND ((yrkesfaglær*) OR (yrkesfag*)) NOT ((selskap) OR (virksomhet) OR (bedrift) OR (barneskole) OR (barnetrinn*) OR (barnehage)))	40	
16	((omskolering) AND (yrkesfag*))	0	
17	((rekrutt*) OR (engasjere) OR (innleie) OR (leie*) OR (ansette) OR (forplikt*)) AND (yrkesfaglær*))		

18	((Utdan* AND (yrkesfag) AND (lærer*)))	90	
19	((Utdan* AND (yrkesfaglærer)))	20	
20	((lærerutdan* AND (yrkesfaglærer)))	11	
21	((videreutd* AND (yrkesfag*)))	43	
22	((bevar* OR (behold*)) AND (yrkesfag*))	60	
	((behold* OR (bevar* OR (forbli OR ("holde på")) AND (yrkesfag*)))	69	
23	((behold* OR (bevar* OR (forbli* OR ("holde på") OR (vedlikeholde)) AND (yrkesfag*)))	95	
24	((behold* OR (bevar* OR (forbli* OR ("holde på") OR (vedlikeholde)) AND (yrkesfag*)) NOT ((selskap) OR (virksomhet) OR (bedrift) OR (barneskole) OR (barnetrinn*) OR (barnehage)))	25	
25	((behold* OR (bevar*)) AND (yrkesfaglær*))	5	
26	((behold* OR (bevar* OR (forbli OR ("holde på") OR (vedlikeholde)) AND (yrkesfaglær*))	9	

1.3 Turkey

N	First Key Term	Synonyms terms in Turkish (OR)	Connections specific to epistemological interest (AND)	Exclusionary terms (AND NOT)	Results after exclusion
1	network	Bağ, ilişki, iş birliği	Strategic, social, economical, institutional, teach	Technical	See Question 1 File
2.	onboard	Taraflar, partnerler	Strategic, social, economical, institutional, teach	Technical	See Question 2 File
2.A	attract	Çekme, talep etme, tercih etme	Strategic, social, economical, institutional, teach	Technical	See Question 2.A File
2.B	recruit	İşe alım, istihdam	Strategic, social, economical, institutional, teach	Technical	See Question 2.B File
2.C	2.C. Induct	Uyum, oryantasyon, işe başlama	Strategic, social, economical, institutional, teach	Technical	See Question 2.C File
2.D.	In-service training	Hizmet içi eğitim, Sürekli eğitim, Beceri geliştirme	Strategic, social, economical, institutional, teach	Technical	See Question 2.D File

2.E.	Retent	Sürdürülebilirlik, sürdür*, devamlılık	Strategic, social, economical, institutional, teach	Technical	See Question 2.E File
3.	Middle lead-Principal	Bölüm başkanı, Koordinatör, okul müdür*, okul yönetici*	Strategic, social, economical, institutional, teach	Technical	See Question 3 File

1.4 Finland

Excluded publications : Obviously or weakly relevant to the topic. Some newspaper articles.	2. Verkosto	Allianssi, partneri	Johtaminen, ammatillinen koulutus	Finna:158/33 Helka:3/1 Helmet:2/0	33 1 0	12 5 1 0	9 1 0
	2. Nimitykset	palkkaus	Johtaminen, ammatillinen koulutus	9 0 0	7 0 0	1 0 0	1 0 0
	2. Kiinnostavuus	Kiinnostus	Johtaminen, ammatillinen koulutus	6 0 0	5 0 0	1 0 0	1 0 0
	2. Rekrytointi		Johtaminen, ammatillinen koulutus	42 0 0	36 0 0	6 0 0	3 0 0
	2. Täydennyskoulutukset	<i>Lisäkoulutus, mentorointi, perehdytys</i>	Johtaminen, ammatillinen koulutus	167 21	16 2 4 1	5 0 0	1 0 0
	2. Sitoutuminen		Johtaminen, ammatillinen koulutus	56 0 0	51 0 0	5 0 0	1 0 0
	Keskijohto	<i>Koulutuspäällikkö</i>	Johtaminen, ammatillinen koulutus	88 0 0	76 0 0	12 0 0	2 0 0
	2. Rehtori		Johtaminen, ammatillinen koulutus	85 2 0	71 0 0	14 1 0	0 1 0
	Tehtävät	<i>Vastualueet</i>	Johtaminen, ammatillinen koulutus	52 0 1	0 0 0	0 0 0	0 0 0

2 Documentation Databases

2.1 Norway

Databas e	Databas e	URL	Disiplic covered	Covered language	Responsibl e partner
Oria	Oria	https://bibsys-almaprimo.hosted.exlibrisgroup.com/primo-explore/search?vid=NTNU_UB	Education al research	Norwegia n	NTNU
Idunn	Idunn	https://www.idunn.no/	Education al research	Norwegia n	NTNU

2.2 Turkey

Database (abbreviati on)	Databa se (long name)	URL	Disciplines covered	Covered languag es	Responsi ble partner
ULAKBİLİM	Ulusal Akadem ik Ağ ve Bilgi Merkezi	https://trdizin.gov.tr/	Educational research	Turkish, English	Akdeniz University
NTS	National Thesis Centre	https://tez.yok.gov.tr/UlusalTezM erkezi/	Multidisciplin ary	Turkish, English	Akdeniz University
SOBIAD	Social Science Citation Index	https://atif.sobiad.com/	Multidisciplin ary	Turkish, English	Akdeniz University
ASOS	Akadem ia Social Science s Index	https://asosindex.com.tr/	Multidisciplin ary	Turkish, English	Akdeniz University

2.3 Finland

	1. Verkosto		Johtaminen, ammatillinen koulutus	Finna:158/33 Helka:3/1 Helmet:2/0	33 1	125 1	9 1
	3.Nimitykset	1. verkosto	Johtaminen, ammatillinen koulutus	2 0 0	0 2 0	0 0 0	0 0 0
	3.Kiinnostavuus	1.Verkosto	Johtaminen, ammatillinen koulutus	2	2	0	0
	3.Rekrytointi	1.Verkosto	Johtaminen, ammatillinen koulutus	5	3	2	0
	3.Täydennyskoulutus	1.Verkosto	Johtaminen, ammatillinen koulutus	21	18	3	1

	3.Sitoutuminen	1.Verkosto	Johtaminen, ammattillinen koulutus	9	7	2	0
	3.Koulutuspäällikkö	1.Verkosto	Johtaminen, ammattillinen koulutus	7	6	1	0
	3.Rehtori	1.Verkosto	Johtaminen, ammattillinen koulutus	11	7	4	0
	3.Vastualueet	1.Verkosto	Johtaminen, ammattillinen koulutus	17	13	4	0

3 Exclusion Criteria

3.1 Norway

Not relevant to the topic/Not including Vet (most of the hit then were excluded)

Weak research/Master Thesis

Document not available

Prints/books

3.2 Turkey

Obviously not relevant to the topic

Weak research

Document not available

3.3 Finland

Combined search: Excluded publications: Obviously or weakly relevant to the topic. Some newspaper articles. In some cases wrong branch of science.

Documentation

3.4 Germany and English Literature

Sub research questions

English literature

1. How is the concept of network defined (in the literature in the respective language)?

A network is defined in the English literature as a collaborative environment for more than two individuals to connect through various platforms or in person (Chen, 2020; Schiff et al., 2015; Swann et al., 2021). The focus of a network is the connection itself between its members (Bjorklund et al., 2020; Schiff et al., 2015; Swann et al., 2021) who are not necessarily part of one institution (Benbow et al., 2018). Networks are described as being beneficial for personal development of the teachers participating and as having a positive impact on teaching success for all parties (Bjorklund et al., 2020; Schiff et al., 2015; Swann et al., 2021).

A partnership on the other hand is defined by a collaborative and cross-institutional (Adhikary & Lingard, 2019; Behm Cross et al., 2017; Kemp & Owens-Sabir, 1994; Monte-Sano et al., 2017; Rintamaa et al., 2017; Rychly et al., 2020; Zahariev & Yordanov, 2021) two-way connection (Barron et al., 2015; Miles et al., 2015; Monte-Sano et al., 2017; Syeda & Dresens, 2020; Zahariev & Yordanov, 2021). "Cross-Institutional" is not only about schools, universities and other educators, there is one partnership between a US university and the tribe representation of the American Indian Navajo and Hopi nations (White et al., 2007). Partnerships offer similar benefits as networks with a usually stronger connection as it is only two-way and not net alike (Rintamaa et al., 2017; Rychly et al., 2020; Waters et al., 2021).

As (Miller et al., 1997) state in their report there must be a lot of communication between expectations between the network and partnership parties as disbalances can cause frustration and harm future work.

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 leaders?

There are only a few partner involved in attracting new VET leaders. In most cases, the new VET leader comes from the teaching staff. Here, the middle management in particular should be emphasized. Those positions are used as an opportunity for teachers to move into

leadership positions so that they take up further training opportunities to become leaders in VET (OECD, 2021). In addition to middle management, experienced mentor teachers can also help here (Public Impact, 2019). Finally, it is upon the legislator, who can help incentivizing teachers to move on and ascend (Maranto & Shuls, 2012).

Attracting external VET leaders? About the ministry of Education and Cultural Affairs?

b. Which partners are helpful in meeting the challenge of recruiting VET leaders?

Just as with attraction, recruiting involves only a few partners. Legislators can also help here incentivizing teachers to move (Maranto & Shuls, 2012). Instead of government agencies, NGOs and other organizations such as Teach for America for example for the US can also be involved here (Houston Independent School District, 2018)

c. Which partners are helpful in meeting the challenge of induction VET leaders?

There are major differences between individual countries in the formalization of induction. Formal requirements for teacher and leader induction vary widely from country to country, with formal requirements ranging from university degrees to no specific qualification requirements. In this respect, induction is also handled differently. In Spain, for example, school leaders must have five years of teaching experience and have to complete a course for school leaders offered by the Ministry of Education and Vocational Training or a regional education government. This training must be updated regularly (OECD, 2021). Same with induction, government agencies are also involved again. However, the induction can be similar to that of managers in the private sector with special programmes. In some countries such as Belgium, there's a the possibility of an "principal's internship", that is designed to allow the new VET leader to get familiar with their new role and to assess their aptitude to exercising it (OECD, 2021). There are also other ideas such as student's families or groups that speak for the student's needs. New VET leaders can get in touch with them (Syeda & Dresens, 2020). Industry partners can also be active with the collaboration (Lee, 2021). At least there can be teacher groups for self- and group-help (Behm Cross et al., 2017). Another possibility is an induction phase with intensive coaching by experienced professionals. A more effective approach than induction by immediate supervisors or local administrators here is a professional mentor, possibly from an external institution. Peer learning measurements are also possible (OECD, 2021).

d. Which partners are helpful in meeting the challenge of in-service-training for VET leaders?

There is a large number of leadership development providers in the individual countries. In the US for example, there is the American Association of School Administration, The Institute for Educational Leadership or the National Center for Research in Vocational Education (Finch et al., 1992). However, there is only little data on leadership development in VET. Unlike leaders of general education institutions, the leaders of VET institutions often lack the support of employers to pursue professional development. A study shows that in-service-training is mandatory in only half of the 15 evaluated countries. In England for example, there is a strategic leadership program, funded by the ministry of education with leaders of in-service-training-colleges. Furthermore, the Education Training Foundation offers online training programs for digital technologies. All in all in-service-training for VET leaders works better when it takes place at local level and originates from the institution and immediate network (OECD, 2021). Similar to induction, special programs work here as well, such as teacher groups for self- and group help (Behm Cross et al., 2017)

e. Which partners are helpful in meeting the challenge of retention for VET leaders?

The literature only gives a few hints on how leaders remain in their position. Industry partners being active with the collaboration (Lee, 2021) could be helpful as well as transferring some tasks so the middle management (OECD, 2021) as the job is experienced very stressful.

3. What are the tasks for VET Leaders to help these networks address the challenges in the HR Process for VET leaders?

In order to make the leadership role in VET less complex and demanding, countries are promoting the role of middle management, so a VET leader has to appoint middle leaders and source some tasks out to them (OECD, 2021). In addition, a focus on school climate and instructor motivation (McLaughlin, 1984; Regional Education Laboratory Pacific, 2020), work actively to get practical partners to work on practical classroom environments (Lee, 2021) and making actual collaboration with companies possible (Kumpulainen et al., 2019) could be some tasks for VET leaders.

Sub research questions

1. How is the concept of network defined (in the literature in the respective language)?

A network is defined in the German literature as a relationship between multiple partners (Ciociola et al., 2021; Kulin, 2016; Mächtle & Eden, 2004; Schlimbach, 2009) that provides potential for collaboration (Kulin, 2016). As Sabrina Kulin describes in her PHD thesis, a network can be connoted as qualitative-normative (referring to controlling interactions between institutions) or as descriptive-analytical (referring to methodical set of instruments that is used to analyze actions between partners) (Kulin, 2016).

A collaboration is used to describe a network that has the purpose of sharing work projects evenly (Ciociola et al., 2021; Kulin, 2016; Risius et al., 2021). These collaborations emphasize the equality of the respective partners (Bach & Mackel, 2021; Ciociola et al., 2021; Rudolph, 2010). Especially in VET context, there are not many collaborations in Germany (Altmeier et al., 2020; Ciociola et al., 2021).

A partnership on the other hand is defined by a collaborative and cross-institutional (Heibler et al., 2016; Mächtle & Eden, 2004) two-way connection (Barron et al., 2015; Monte-Sano et al., 2017; Syeda & Dresens, 2020; Zahariev & Yordanov, 2021). Partnerships offer similar benefits as networks with a usually stronger connection and are sometimes set out with a list of goals to achieve as with the “Bremer Landesprogramm Lernortverbünde und Ausbildungspartnerschaften” (Mächtle & Eden, 2004)

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 leaders?

In order to attract VET leaders, the literature mentions quite often partnerships with institutions and people of the local political, economic or societal surroundings (Amrhein & Badstieber, 2013; Faßhauer, 2012; Montandon & Brégeon, 2021). Also universities can help here to teach students or lecturers for school teaching environments (Faßhauer, 2012).

b. Which partners are helpful in meeting the challenge of recruiting VET leaders?

Due to federalism in Germany, the selection procedure depends on the respective federal state. Applications are often sent to the school supervisory board. The final decision is made mostly by the Ministry of Education and Cultural Affairs. Therefore different partners are considered to recruit VET leaders (Klein, 2007). Just like attracting VET leaders, partnerships

with institutions and people of the local political, economic or societal surroundings (Faßhauer, 2012; Montandon & Brégeon, 2021) and universities to teach students or lecturers for school teaching environments (Faßhauer, 2012) are also helpful to recruit VET leaders.

c. Which partners are helpful in meeting the challenge of induction VET leaders?

As already in the English literature stated, there is no formal way of induction in the most countries. Helpful to induct VET leaders are academies for educational leaders. For example, in Germany, there is the Deutsche Akademie für Pädagogische Führungskräfte (DAPF) or the Akademie für Lehrerfortbildung und Personalführung (ALP) in Dillingen for the state of Bavaria. In addition, teachers and their collaboration for example with different kinds of feedback formats are helpful (Gogolin et al., 2021; Willmann, 2017) as well as – like in attracting and recruiting – partnerships with institutions and people of the local political, economic or societal surroundings (Montandon & Brégeon, 2021).

d. Which partners are helpful in meeting the challenge of in-service-training for VET leaders?

Like induction, there is no formal in-service-training every VET leader should absolve.

For in-service-training, universities or other educational institutions (Schön & Glade, 2020) could be considered. In any case, it should be a long-term program with external education and course providers, as short-term seminars tend to not be as helpful (Heibler et al., 2016). At least, partnerships with institutions and people of the local political, economic or societal surroundings (Montandon & Brégeon, 2021) could be helpful as well.

e. Which partners are helpful in meeting the challenge of retention for VET leaders?

That VET leaders remain in their position, partnerships with institutions and people of the local political, economic or societal surroundings (Montandon & Brégeon, 2021) could be helpful. So that the work does not become too much for one person, school directors themselves and their administrative partners have to assign personal and individual resources to teachers (Darius et al., 2016). Other helpful partners could be social resources, i. e. support from leaders or higher-ranking persons or teams (Sandmeier & Muehlhausen, 2020).

3. What are the tasks for VET Leaders to help these networks address the challenges in the HR Process for VET leaders?

All in all, VET leaders have to make the school a desirable workplace (Faßhauer, 2012) and give VET teachers the freedom to develop their own classes (Mahlberg-Wilson et al., 2009).

In any case, VET leaders need to split school leadership tasks evenly to help reduce stress on individuals (Heibler et al., 2016).

3.5 Norway

How is the concept of network defined (in the literature in the respective language)?

Networks are characterized by many different participants/organizations are coming together in order to enhance development and/or goal achievement. The networks have their meeting arenas for sharing and collaboration that may contribute to development and goal achievement. The meeting arenas can be both digital and physical, and the networks may have participants across schools, municipalities, regions and national borders. The meeting arenas can be both digital and physical, and there is also literature that describes the importance of network management.

There are many different networks that are mentioned: Subject networks, competence networks, networks between students, alumni networks, networks for managers, for schools, for regions, networks of teacher educators, networks across countries (Erasmus+), networks for teachers in upper secondary schools and between school/teachers and instructors in companies. Professional and professional political network, network of companies that train skilled workers

Networks are often developed where the tasks are complicated and require efforts from several, relatively autonomous actors. However, there is no clear hierarchical authority, or clear procedures for how to proceed to achieve common goals (Lyng et al, 2021).

Partnerships require more binding and formalized agreements, and there are far fewer participants in a partnership than there are in networks. Partnerships are often based on strategic objectives, and it is primarily the partnerships between University/teacher training programs and school owners/schools that are mentioned in the articles that we found in the search.

Mutually binding and developing partnerships between HE/teacher training programs and school owners/schools are highlighted as an important prerequisite, both for competence development initiatives to be relevant and effective - and for relevant teacher training programs to increase (Lyng et al, 2021).

Task 2: Which partners are helpful in meeting the challenges in the HR-process for VET leaders?

According to Literature (11,19,20) increasing recruitment can't be done without simultaneously increasing the attractiveness of the professions, which means that the status of vocational subjects must be strengthened. According to Literature source 19, 20 use of unskilled labor, specialist workers, foreign workers and short-term contracts and hire companies is damaging the status and making the occupation less attractive, and this affects also recruitment of teachers. Vocational subjects are not attractive enough, and the complexity of the institutional interaction between work and education in the design of the vocational subjects must be strengthened. According to Literature source 11, 19, 20 the entire arsenal of vocational training enthusiasts at schools and in companies, in professional organizations and industry associations, in training offices and in examination boards must collaborate and build trust and status by giving scope to display their commitment and their institutional innovation power in order to develop vocational training. In order to recruit the complexity must be addressed in many ways - job security, reasonable wages, opportunities for part-time (a minus for dependents) and leaves, further education and career opportunities, and work content.

Which partners are helpful in meeting the challenges for recruiting

According to the Literature source 7, 11 the county municipality can through economic support from the Ministry of Knowledge/The government support vocational schools in recruiting vocational teachers through a two- or three-year scholarship. The scholarship was given to teachers which already have a position in the VET school but need formal education to get a permanent position (13). The scholarship gave vocational teachers opportunity to buy "days off" and substitutes when they are on the week teaching sessions at the university (13). In addition, the scholarship was also given to applicants within fields where the shortage of teachers in VET schools is greatest. Through this measure the Ministry of Knowledge/The government aimed to support vocational schools in recruiting new teachers by supporting skilled workers who want to become a vocational teacher but is not yet employed in school (13).

According to literature resource (13) the Ministry of Knowledge/The government can support vocational schools in recruit teachers by extending/increasing the number of study places in the one year add-on vocational teacher education program for candidates within the field of technology. This measure is justified by society's need for more skilled workers within technological vocations.

Which partners are helpful in meeting the challenge of induction VET leader

According to the literature source 3,10 and 13 the government by the Department of Knowledge and NAV (Norwegian Labour and Welfare Administration) can support teachers

which already have a position in VET-schools, by offering scholarship or economical support that makes it possible for them to attend teacher education and still keep their job in school. The schools are also dependent of a collaboration between teachers' educators and the county (administrator of Vet schools) in order for the teachers to combine studies with work.

According to the literature source 4, and 11 networking and cooperation with working life is an important factor for relevant teacher education for vocational teachers. For the mentors/practice teachers networking and cooperation with working life is an important factor for making the teacher induction relevant for the students. Mentors/practice teachers use professionals from working life in teaching, and as dialogue partners to ensure professional relevance in the training. Students need to develop professional depth by analyzing competence needs and changes in their own professional subject, but in addition, they must also develop broad professional competence by building up insight into the distinctive features and common features between all the professions included in the education program.

According to the literature Literature source 5 networking with vocational practitioners and companies is required in order to be able to provide vocationally relevant training beyond the students own professional certificate area. In order to gain more in-depth learning in line with working life and society's need for competence, vocational teachers are completely dependent on further developing their network and cooperation with the working world also after teacher induction.

According to the literature universities and colleges must collaborate with representatives from working life, teachers and managers in upper secondary schools, college teachers and vocational teacher students, among other things, to develop a study program that is relevant and tailored for the students who will be teachers in VET. This means: developing a program in collaboration between university and college, external resource persons from upper secondary school and companies/public enterprises (5). In addition the literature argue that school practice and vocational practice in teacher induction programs also require close cooperation with schools and companies. In Norway the employee and employer organizations in schools and businesses, schools and companies have been positive about the training from the start, and it has usually been easy for the students to get an internship. The organizations are also represented in the study program council, which gives them influence over the content of the study (Literature source 11)

2d) Which partners are helpful in meeting the challenge of in-service-training for VET leaders?

According to the literature (6, 11, 17, 25) the following partners can support vocational schools in training teachers: Companies and training offices can support development of vocational

teachers' dual professionalism in in-service training, EU/Erasmus+ networks and networking between schools across Europe as a part of in service training have an positive impact on pedagogical and subject-specific skills. eTwining is an initiative of the European Commission which aims to encourage European schools to collaborate using information and communication technologies by providing the necessary infrastructure)

According to the literature (11, 22, 32) following partners can support institutions of TEVET in in-service training - cooperation between the students outside of the meetings, and cooperation with other actors such as companies and colleagues in their own school i important when providing in service training for future VET-teachers The supply of skills should be related to the demand for skills in companies. The industries are not always satisfied when they receive newly qualified skilled workers. This applies, for example, to the plumbing profession. One can work to ensure that feedback from the industries is formalized and implemented in competence plans at department or school level.

2e) Which partners are helpful in meeting the challenge of retention for VET leaders?

According to litterature (13, 25) the Ministry of Knowledge/The government can support vocational schools in keeping teacher in school (retention) by giving them relevant, updated and high-quality further education/ add on education.

According to Literature source 11, the leaders in the institutions of TEVET can through dialog and cooperation with leaders in vocational schools support vocational schools by giving school leaders a better understanding of the importance of adapting the job situation for vocational teacher students so they will be able to complete their teacher education. In the bachelor program for vocational students at NTNU, many students that already had a position in VET schools by start of the studies dropped out of the program. By strengthened the collaboration with the upper secondary school leaders in order to make better arrangements for the students, the dropouts from this group of students were almost eliminated.

Vocational teachers are recruited from working life and enter the teaching profession with relatively long experience and an established professional identity. Vocational teacher students develop a dual professional identity, as practitioners of a profession and as vocational teachers (1, 9, 24, 26) In order to be able to maintain both, it is required that upper secondary school leaders and teacher training leaders/ educators value both identities. It is very important that the vocational teachers retain and develops their dual identities. When students see themselves as teachers, they also see themselves as future professionals. Thus, by giving attention and value to students' dual identity the leaders in vocational schools and teacher education can support vocational teacher in preventing retention.

According to Literature (8, 9, 23) school leaders and Ministry of Knowledge/The government can support vocational schools in keeping teacher in school (retention) by financing and offering different mentor programs for newly qualified vocational teachers. This can promote their motivation to stay. County municipality and Ministry of Knowledge/The government can also support vocational schools in keeping teacher in school (retention) by giving supervisors course in supervising. Furthermore, support from school leaders and county municipality can support vocational schools by giving courses for newly qualified vocational teachers. In educational research, the transition from being a student teacher to teacher is described as a "practice shock" because the students' expectations of the teaching role do not necessarily coincide with the reality they encounter. Studies suggest that newly qualified vocational teachers are not sufficiently prepared for how to handle the various tasks they encounter in the teaching profession. Newly qualified vocational teachers need both academic and professional support and recognition from the school management and the colleagues in order to develop a safe teacher identity. The work to keep new teachers in job can be increased by introducing forms of guidance that take care of the newly qualified vocational teachers' needs for training, manageability and participation. This can be done in several ways, either through mentoring, or other forms of colleague collaboration, either one-on-one and/or in groups as co-created learning.

Taks 3. What are the tasks for VET Leaders to help these networks address the challenges in the HR Process for VET leaders?

(this could be placed below any of 2a-2d) but they are mainly the same all over...)

In order for the networks thus spanned to function, leader in these institutions must perform the following tasks (1, 3, 7, 10, 14, 13, 18, 22)

The Ministry of Knowledge/The Government must continue to finance the scholarship

The VET schools must provide substitutes, hospitalization in relation to planning teaching, etc. when teachers on scholarship are on week teaching sessions at the university

Maintain good dialogue between the leaders in the County municipality and VET schools to cover the need for competence

The leaders in the county municipality and VET schools need to cooperate concern the the distribution of the scholarship based on the individual school's

The vocational teacher education must help school leaders to understand how important it is that they facilitate so that their teachers are able to complete, which will benefit the VET school in the long run (

Leader in school need to collaborate with teacher education in order to make it possible for their teachers to combine studies with work

The employee organizations (LO) and employer organizations (NHO) can support institutions of TEVET in recruit teachers by distribute information about the vocational teacher education programmes in different areas, among other their respective journals (fagblad). Cooperation between the three parts- The Government of Norway, The Confederation of Norwegian Enterprise (NHO) and The Norwegian Confederation of Trade Unions (LO) has long traditions in Norwegian working life. Further the NAV (Norwegian Labour and Welfare Administration) can support institutions of TEVET in recruiting vocational teacher students by financing their education.

According to the literature (29), The Ministry of Knowledge can support institutions of TEVET in recruit teachers through financing decentralized education. Furthermore, the same source point to the importance of relevant further education programs (gode etter- og videreutdanningstilbud) in order to recruit. Representatives from the education programs must also attend industry events (bransjearrangementer). The Ministry of Education can support vocational schools and institutions of TEVET in recruiting teachers by offering TEVET and teacher education for professional education (for example nursing, engineers) at the same campus. An example from the Universitetet i Gøteborg in Sweden is given where teacher education for assisting nurses in upper secondary schools is closely connected to teacher education for nursing. Building network at campus can lead to further cooperation and recruitment.

If TEVET manages are to develop more binding cooperation with working life, upper secondary VET schools and county municipalities, both challenges related to the quality of education, relevance and recruitment can be met in better ways (7)

According to source 7, 11, 17,25, 31, the Ministry of Knowledge/The Government can support institutions of TEVET in recruiting teachers by financial support that facilitate the study situation and give teachers the opportunity to take an education while working in school. Vocational teacher education will rarely result in a wage increase for skilled workers for example within the field of technology. If they are also the main breadwinner in the family, it is likely that taking a student loan will be perceived as unattractive, and thus the study can become very demanding with both work and education. In 2015, a scholarship of NOK 200,000 was

established for school staff. From 2016, there has also been a scholarship for skilled workers who are not employed at the school (recruitment scholarship). It is the county municipality that apply on behalf of skilled workers who are students or skilled workers who have applied for admission to the study. Thus, it is the priorities of the schools and the county municipality that determine the distribution of the scholarships

In order for the networks thus spanned to function, leader in these institutions must see in-service training as a resource (those who have taken further education must be seen as resource persons) for school development, and also take an active part in educational development work, develop a culture of sharing. According to the literature close cooperation between teacher education and school regarding the development and implementation of the studyprogram, and then the school leader should set aside resources for leadership support, facilitation at the school: use of room and time adapted to teachers' teaching and other tasks. (31) The school leader is the driving force in competence development – leadership in schools must provide time and space for collaboration and collaboration arenas, but the leaders must also make a commitment, show commitment, interest and motivate the teachers (25).

Tripartite cooperation

VET in Norway forms part of a broader institutional framework which is referred to in many contexts as the Norwegian model. The Norwegian Model gives us the rules of the game for working life, showing us how employers, unions and government meet and speak with one another in what is called "tripartite cooperation". Cooperation between the three parts- The Government of Norway, The Confederation of Norwegian Enterprise (NHO) and The Norwegian Confederation of Trade Unions (LO) has long traditions in Norwegian working life. LO is a national trade union center, decidedly the largest and probably the most influential umbrella organization of labor in Norway. NHO is Norway's largest organization for employers. The Norwegian Model has been in development for over 120 years; it helps create predictability, dialogue and trust in the workplace, giving us the tools necessary to deal with differences of opinion and conflicts of interest before they escalate into major conflicts. The possibility for employees to influence their working conditions, and a work life characterized by equality and trust are also part of this tradition. This situation allows employees' knowledge and skills to be used positively, which in turn creates employee motivation and job satisfaction.

3.6 Turkey

1. How is the concept of network defined (in the literature in the respective language)?

A network is defined in the literature (literature source 1, 2, 3, 4, 5, 6, 7) as relation, connection and collaboration. In this context, a typical network around vocational schools includes the following institutions: teacher, student, institutions, The Ministry of National Education (MoNE), The Ministry of Energy and Natural Resources, The Ministry of Culture and Tourism and employers (teknocities of universities, HAVELSAN which is a national aviation industry), The European Union (literature source m, n, ...). A typical network around teacher education in higher education includes the following institutions: institutions and higher education institutions (literature source 3).

Which partners are helpful in meeting the challenges?

According to the literature (literature source 1, 2, 3, 4, 5, 6, 7), the partners who could support vocational schools: institutions of employers, MNE, higher education institutions, The European Union, teachers.

2.A. Which partners are helpful in meeting the challenge of attracting VET leaders?

According to the literature (literature source 1, 2, 5, 7), the following partners can support vocational schools in attract teachers: institutions of employers, The European Union and MNE. In order for the networks thus spanned to function, leader in these institutions must perform the following tasks: taking part in school supervision, providing resources for in-service education of teachers related to vocational education issues, providing opportunities to understand different cultures, and improving their working conditions.

-According to the literature (literature source 1, 2, 3, 4, 5, 6), the following partners can support vocational schools in students: institutions of employers (such as teknocities of universities, HAVELSAN which is a national aviation industry), The Ministry of Culture and Tourism, The Ministry of Energy and Natural Resources, and MNE. In order for the networks thus spanned to function, leader in these institutions must perform the following tasks: improving school conditions and curriculum, increasing the amount of money which students are given from circulating capital, and giving scholarship, providing opportunities to gain work experience and to practice their learning into real situations.

2.B. Which partners are helpful in meeting the challenge of recruiting VET leaders?

A recruit is defined in the literature (literature source 2, 3, 4, 5, 6, 7) as employment and job guarantee. In this context the following institutions could support the vocational education on this topic: institutions and employers, trade associations, The Ministry of Culture and Tourism

and MNE. After the graduation of the students, the institutions employ them, or they give them a certificate which make it easier for them to find a job.

2.C. Which partners are helpful in meeting the challenge of induction VET leaders?

When the relevant literature (See 2.C.) is examined, the concept of induction is characterized by concepts such as the process that individuals encounter at the beginning of the process, the orientation program and on-the-job training. In these studies, it has been revealed that individuals who experience this process face fewer problems in the working process, can solve problems quickly and play an active role in the management of the process. It has been stated that the induction program/process is undertaken by the teacher in charge of vocational education schools, while the unit in charge of this issue manages the process in workplaces.

2.D. Which partners are helpful in meeting the challenge of in-service-training for VET leaders?

In-Service Training is the systematic training that improves the knowledge, skills, attitudes, performance, productivity, and motivation of individuals working in the centre, in the countryside, and, upon request, in private education institutions under the Ministry of National Education (MEB). Industry, universities and the MEB collaborate to provide in-service training for vocational education leaders (See 2.D.). University-MEB and industry cooperation come to the fore regarding the trainers who take part in in-service trainings. While determining in-service training subjects, the Ministry of National Education in-service training unit consults with universities and institutions in related fields (this process is carried out with a different university (institution in each region.) and training program is prepared. These trainings provide field-specific thematic in-service trainings to process stakeholders at various periods throughout the year.

2.E. Which partners are helpful in meeting the challenge of retention for VET leaders?

The studies in the literature (See 2.E.) have highlighted the importance of collaborative work for vocational education retention. It was observed that each partner contributes to the process in different ways. In this regard, İŞKUR contributed with vocational training activities, private institutions and organizations with individual development activities, universities with educational projects, and MEB with its action plan to develop vocational education and shape its future.

3.What are the tasks for VET Leaders to help these networks address the challenges in the HR Process for VET leaders?

In the related literature (See 3), the tasks assigned to VET leaders were mainly categorised under four headings: educating, selecting, training, and facilitating independent learning. While pre-service trainings, national (TUBITAK), and internationally supported projects (EU) are used for the HR process, the tasks for the selection of human resources are specified as standardising the recruitment criteria and carrying out the recruitment process in a transparent and fair manner. In terms of training, it was determined that in-service training will be prioritised, and this training will take place in the context of MEB-university and industry. In terms of autonomous learning, the tasks are discussed to raise self-learning awareness in individuals and enable lifelong learning.

3.7 Finland

Sub-research questions for the literature review

How is the concept of network defined (in the literature in the respective language)?

The definitions are mostly at a very general level. For example, at the level of the Ministry and the Board of Education, they talk about relevant cooperation networks, working life connections and expert networks. Some descriptions emphasize national networks in addition to regional networks. Development money has been granted for the development of regional cooperation networks and it is generally considered important. However, networks are not systematically described, but are taken for granted. This is stated in one of the theses, where the matter is dealt with deeper manner. (e.g. Opetustoimen henkilöstön ammatillisen osaamisen varmistaminen (Osaava)) Here are some indirect definitions and one better.

Networking can be put into a theoretical framework through the interactivity of leadership, participation, asking and listening, and team play. Network requires interaction skills, active dialogue both within the educational institution and with stakeholders. (Seppälä, M. & Tapani, A. 2018.)

The goal of the current education policy is not only that education follows changes in society and working life, but also that the goal is to develop them. Education is networking, belonging to expert groups and internal team activities, implementing a personal curriculum and self-direction. (Bergman, Petri; Kolunen, Katri; Pylvänäinen, Seppo)

The concept of network has been used in the literature in many different ways. In many studies, the network is not even defined, but the concept of network is assumed to be clear. (Tynjälä et al. 2007, 260.) In that case, the word network is used as a figure of speech, as an explanation for a phenomenon where people are interconnected (Ahonen 2013, 29). A network can be

defined as an unlimited number of relationships between individuals, organizations or countries. The network therefore consists of units that have connecting ties between them. All social organizations can be thought as networks. A functioning network is based on trust and commitment, and its operation can be facilitated or hindered by, for example, communication, a common object of interest, attitudes and the similarity or lack of them among members. (Miettinen et al. 2006, 8; 370.) Järvensivu et al. 2010, 7; Kallio et al. 2016,

Networks therefore enable the sharing of information, experiences, support and expertise. What kind of information is available through the network depends on the official nature of the network. Official, set and semi-official networks are, as their name suggests, more official than informal networks. Through informal networks, it may be possible to get information that you would not get at all or at least would be difficult to get through more official networks. In this way, being part of several different networks is more of an advantage than a disadvantage. (Koivu 2006, 67.)

What separates strategic networking from other cooperation is a commitment to common goals. A network relationship requires the sharing of essential knowledge and know-how, from which all parties benefit. (Valkokari, K., Hyötyläinen, R., Kulmala, H. I., Malinen, P., Möller K., Vesalainen, J. 2008.)

One interesting perspective for understanding networks opens up in the analysis of the network connection between work and learning. Vesa Korhonen examines these connections in his article Networks of work and learning - perspectives on the development of social capital. Perspectives are opened through four theoretical approaches, which are: 1) situational learning and community of practice, 2) community of organizational knowledge creation and knowing, 3) theory of action and work development, and 4) networks of work and learning. The comparison of approaches gives an opportunity to understand the dynamics in which interaction and network relationships develop and create new social capital in the changing contexts of work and learning.

Which partners are helpful in meeting the challenges in the HR-process for VET leaders? Which partners are helpful in meeting the challenge of attracting VET leaders?

Regional networks between middle leaders. (Kasvatus ja koulutusalan johtaminen, 155)

Which partners are helpful in meeting the challenge of recruiting VET leaders?

Other educational institutes and social networks. (Kasvatus- ja koulutusalan johtaminen)

Which partners are helpful in meeting the challenge of induction VET leaders?

Colleagues from other institutions, official and unofficial networks of leaders. Mentoring systems organized by own organization. (Meriläinen & Rökköläinen) (Kasvatus- ja koulutusalan johtaminen)

Which partners are helpful in meeting the challenge of in-service-training for VET leaders?

Teachers' and VET leaders' official and unofficial working life networks. In larger organizations (Cities or national level institutions) the cooperation is also coordinated by non-educational leaders. In that case representatives in boards etc. are needed. (Meriläinen & Rökköläinen)

Which partners are helpful in meeting the challenge of retention for VET leaders?

Mentoring systems, colleagues, working life connections (regular working life periods) (Kasvatus- ja koulutusalan johtaminen, 2021)

What are the tasks for VET Leaders to help these networks address the challenges in the HR Process for VET leaders?

The law requires educational institutions to cooperate closely with the surrounding business life. Cooperation between educational institutions is also required by law. Promoting these is the responsibility of the educational institution. Some training organizers have instructions for defining collaborators and for being aware of the laws that define forms of collaboration. The instructions belong to the quality work of educational institutions. Educational institutions also belong to administrative associations that have common practices to help manage networks. In addition, educational institutions have a multi-professional networks at their disposal, whose experts take care of utilizing and maintaining their own networks. Leaders are responsible for making this happen. (e.g. Rehtorius, peliäkö? 2009) . (Meriläinen & Rökköläinen)

4 Comparative Literature Review on Networks and Partnerships in VET – A short summary

4.1 How is the concept of network defined?

Across the four countries, the concept of a network is defined as a collaborative framework that promotes connection and cooperation among various stakeholders in vocational education and training (VET).

- **Norway** describes networks as vital for collaboration between educational institutions and the workplace, emphasizing the importance of relationships with industry practitioners for effective curriculum development and teacher education
- **Germany** regards a network as a relationship between multiple partners that fosters collaboration and collective action towards shared educational goals, highlighting the qualitative-normative dynamics in its definitions
- In **Turkey**, networks are identified as relationships that include teachers, students, employers, and government institutions, emphasizing the importance of collaboration for enhancing vocational education .
- **Finland** addresses networks at a more general level, focusing on cooperation between educational institutions and working life, recognizing the significance of both national and regional networks.

The review indicates a broadly similar understanding across the countries, focusing on the empowering nature of networks for collaborative professional development. The concept of a network within the Vocational Education and Training (VET) landscape is largely unified across the literature, characterized as a collaborative framework that facilitates connections among stakeholders such as teachers, students, industry partners, and educational institutions. Networks are typically defined as relationships that allow for collaboration and resource sharing, enhancing the educational process and professional development opportunities (Chen, 2020; Ciociola et al., 2021). However, variations exist in how these networks are structured and managed. Some regions emphasize informal alliances aimed at fostering knowledge exchange, while others highlight formal partnerships that include contractual obligations and strategic objectives (Kulin, 2016; Lyng et al., 2021). This indicates a spectrum of network formalization that reflects differing educational and cultural contexts across countries.

4.2 Which partners are helpful in meeting the challenges in the HR process for VET leaders?

Attracting VET Leaders:

-
- In **Germany**, middle management and mentor teachers play crucial roles in attracting prospective VET leaders
 - **Norway** emphasizes the collaboration of educational institutions and local businesses as essential for attracting qualified leaders
 - **Turkey** highlights the involvement of employer organizations and the Ministry of National Education (MoNE) in supporting schools to attract VET leaders
 - **Finland** notes that regional collaboration networks are instrumental in attracting leaders by fostering connections within the education sector

Recruiting VET Leaders:

- **Germany** and **Turkey** agree that legislative support, particularly from the MoNE, is vital in providing incentives for teachers to ascend into leadership roles
- In **Norway**, industry partnerships are also valuable in the recruitment process
- **Finland** suggests that social networks and collaborations with other educational institutions assist in effective recruitment practices

Inducting VET Leaders:

- Across all countries, mentoring systems and professional development opportunities are emphasized in the induction process. For example, **Norway** suggests utilizing professionals from both education and industry as mentors .
- In **Germany**, institutions of higher education play a significant role in facilitating induction programs
- **Turkey** supports the idea that organizations and predecessor institutions are crucial for the induction of new leaders
- **Finland** advocates for structured mentoring systems to guide newly appointed VET leaders

In-Service Training for VET Leaders:

- **Germany** indicates that universities are pivotal for providing long-term training programs
- **Turkey** encourages collaboration with local educational institutions and other professional organizations to enhance in-service training
- **Norway** emphasizes that industry partnerships would benefit ongoing professional development
- **Finland** highlights that cooperative networks between teachers and VET leaders are critical in facilitating effective training programs.

Retention of VET Leaders:

- In all four countries, supportive partnerships are essential for retaining VET leaders. In **Germany**, partnerships with local communities can enhance working conditions for leaders
- **Norway** suggests that collaboration with industry is vital to ensure VET leaders do not become overwhelmed in their roles
- **Turkey** discusses the significance of collaborative support within local contexts to improve retention .
- **Finland** points out that mentorship and collaboration with working life contribute to creating a desirable work environment, crucial for retention

Across the literature, various partners are identified as essential in overcoming challenges in VET, such as attracting skilled teachers and enhancing industry cooperation. Key players typically include educational institutions, government agencies, industry representatives, and community organizations. While the necessity of collaboration is a common theme, the literature indicates differences in the perceived effectiveness of various partner roles. For instance, some countries report strong engagement from industry partners, thereby enriching vocational training with practical relevance (Lee, 2021), while others struggle with insufficient support from local industries (Finch et al., 1992). This disparity reveals that while the need for diverse partnerships is universally acknowledged, the degree of collaboration and resource contribution from these partners varies significantly.

The literature reveals that the retention of VET leaders is significantly influenced by the support networks available to them. Effective retention strategies incorporate collaboration with various partners, including educational institutions and community organizations, aimed at improving working conditions and professional development opportunities (Montandon & Brégeon, 2021; Sandmeier & Muehlhausen, 2020). Despite the common understanding that supportive environments enhance leader retention, differences emerge in how these strategies are employed across regions. For instance, some countries highlight the importance of formal mentorship programs and structured induction phases (OECD, 2021), while others focus more on informal peer support networks. This inconsistency illustrates the diversity of approaches to leader retention in VET, shaped by local contexts and institutional frameworks.

4.3 What are the tasks for VET leaders to help these networks address the challenges?

VET leaders across all countries share common tasks aimed at effectively managing networks and ensuring collaboration among stakeholders. These include:

- **Delegation of Responsibilities:** By empowering middle management to take on specific leadership tasks, VET leaders reduce workload stress and promote a collaborative environment
- **Professional Development:** Leaders are encouraged to engage in ongoing professional development and incorporate feedback mechanisms to support their teams effectively
- **Fostering Collaboration with Industry:** Leaders should actively work to build partnerships with industries to create relevant educational contexts that reflect current labor market needs
- **Promoting Positive School Climate:** Initiatives that focus on improving work-life balance and fostering a supportive atmosphere are emphasized as essential roles for VET leaders

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- **Addressing Individual Teacher Needs:** VET leaders must ensure that each teacher has access to the necessary resources and support to excel, which subsequently strengthens the institution's overall educational climate

This array of tasks aligns closely across the countries, emphasizing leadership as a facilitator of collaboration, stakeholder engagement, and educational improvement in VET contexts. The literature across the countries indicate that VET leaders play a pivotal role in managing these networks and addressing their challenges. Literature across countries suggests that effective leaders should focus on delegating responsibilities, fostering an inclusive school climate, and enhancing educator motivation (Schiff et al., 2015; Darius et al., 2016). Most studies advocate for the importance of leadership development and ongoing professional training, noting that leaders' ability to empower middle management can alleviate stress and complexity in their roles (OECD, 2021). However, the implementation of these tasks often faces obstacles, such as varying levels of support for professional development and differing cultural expectations regarding leadership styles. This variation indicates that while the tasks for VET leaders are conceptually similar, practical execution may differ based on local contexts and available resources.