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Is employee training really gender-neutral? Introducing a sex/gender-sensitive model of training

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ABSTRACT

This integrative literature review reflects on the discourse in training theory and practice that employee training is gender-neutral. In a review of 78 multidisciplinary empirical studies from across the world, 90% of studies show that sex/gender impacts the work environment of training participants, their characteristics, interaction with the training design, and/or training outcome. This suggests that a gender-neutral approach to training may not reflect the reality of sex/gender differences; hence, there is a need for reflectivity on the role of sex/gender in training theory and practice to ensure that employee training is inclusive and equitable. This review introduces a sex/gender-sensitive model of training to guide future research and practice, including the recommendation to move beyond decontextualised, binary sex-category based research towards a situated and intersectional understanding of the multiple aspects of sex and gender in training.

1. Introduction

The global corporate training market is expected to generate a revenue of over $332 billion in 2021 and $417 billion in 2027, a compound annual growth rate of 9.4% (Allied Marketing Research, 2021). In parallel, despite significant progress, women are still underrepresented at senior levels in organisations, with a key hurdle at the first step up to manager (Thomas et al., 2020). In a US study of 70,000 employees, 37% of women responded that gender played a role in missing out on a salary increase, promotion, or chance to get ahead, versus 8% of men (Thomas et al., 2017). A survey of 13,000 organisations in 70 countries reported that nearly half of the organisations have fewer than 30% female entry-level managers (ILO, 2019). Bryans and Mavin (2003) found that training is not significantly helpful for females to learn how to become a manager:

> *In the questionnaires, the women had emphasized the influence of previous managers, both good and bad, as being helpful in learning to become a manager. Importantly for organizations and management educators, training and management education were identified as being 'not very' or 'not at all helpful'. (p. 123).*

This integrative literature review stimulates reflectivity on the discourse in training theory, models, and practice that employee training programmes are gender-neutral. This discussion is important given the priority organisations assign to increasing female representation at management and leadership levels (Huang, Krivkovich, Starikova, Yee, & Zanoschi, 2019), which requires equitable and inclusive training and development (T&D) opportunities (Due-Billing & Alvesson, 2014; Metz & Kulik, 2014; Streets & Major, 2014). This discussion is particularly relevant given that studies suggest that the COVID-19 pandemic has intensified the pre-existing underrepresentation of females (McKinsey, 2020). This review defines employee training as a systematic activity organised by an

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employer to help its employees learn and develop performance through enhanced knowledge, skills, and behaviours. The increasing number of female leadership courses reflects the consideration given to the role of gender in leadership training (Debebe, Anderson, Bilimoria, & Vinnicombe, 2016); however, there is limited focus on the role of gender in non-leadership training. Typical non-leadership employee training programmes include communication, project management, customer service, sales, marketing, and management training. First, in this article, gender is defined and training theory and models are discussed; second, research on the role of gender in training is reviewed; and finally, a summary, a sex/gender-sensitive model of training, a discussion, and the implications for future research and practice are presented.

2. Defining gender

Several complexities and controversies surround the terminologies associated with sex and gender (Hyde, Bigler, Joel, Tate, & van Anders, 2019). Sometimes, gender is seen to be the same as the sex of a person, when positioning female representation as gender diversity. However, sex refers to biological criteria, whereas gender refers to sociocultural systems, including norms and expectations, associated with females and males (Powell, 2014). While the traditional approaches to sex and gender are based on the belief that individuals can be divided into female and male categories (i.e. gender binary)—a membership viewed as biologically determined, stable, and meaningful—these assumptions have been challenged; studies have shown the sex and gender binary to be culturally determined and situated (Hyde et al., 2019). In addition, a poststructuralist lens opposes a predetermined, individualistic gender identity or gender as something a person 'possesses'; it sees gender as interactional—a form of 'doing'—which is not static, but ever-changing and situated (Butler, 2006; West & Zimmerman, 1987). This review highlights that most of the studies on gender and training are based on the premise of the gender binary system, with participants divided into mutually exclusive categories of women and men and gender considered a stable trait. The normative impact and the cost associated with the gender binary is highlighted by studies examining the negative perceptions of non-binary employees and transgender employees—who identify with genders different from their sex assigned at birth (Dray, Smith, Kostecki, Sabat, & Thomson, 2020).

Although sex and gender have different meanings, studies have advocated an integrated view, considering them intertwined concepts (Hyde et al., 2019). Tate, Youssef, and Bettergarcia (2014) suggested that gender is a collection of interrelated facets—birth-assigned category, current gender identity, gender roles and expectations (gender stereotypes), gender social presentation (gender expressions), and gender evaluations of one's gender in-group and out-group (gender bias). In this review, I adopt the recommendation to use the term sex/gender (Hyde et al., 2019; Stinson & Cameron, 2020). I also highlight that many of the reviewed studies use the term gender, while, in effect, only measuring the sex-category based differences, without reflecting on the consequences.

Both sex and gender are impacted by individuals' beliefs and expectations about being compatible with and accountable to socially, historically, and culturally determined constructions of what it means to be female and male—gender schemes (Butler, 2006; West & Zimmerman, 2009). Most organisations reflect, value, and privilege masculine practices and promote male leadership (Hearn, 2014). Gender schemes within the organisational context give rise to descriptive and prescriptive stereotypes about how women and men are and should think, feel, and act (Heilman, 2001), leading to gender bias and workplace inequity.

In the context of sex/gender, and in line with several studies, this review emphasises intersectionality—a term introduced by Kimberlé Crenshaw over 30 years ago. It indicates that social categories (e.g. race, ethnicity, gender, and class) are connected and mutually reinforcing in their production of inequity (Acker, 2006; Crenshaw, 2014; Holvino, 2010).

3. Training literature and models

An extensive training literature describes the benefits of training (Aguinis & Kraiger, 2009); training processes (Coultas, Grossman, & Salas, 2012; Salas & Stagl, 2011); training elements, effectiveness, motivation, and transfer (Baldwin & Ford, 1988; Bell & Kozlowski, 2008; Burke & Hutchins, 2008; Holton, Bates, & Ruona, 2000; Massenberg, Schulte, & Kauffeld, 2017; Russ-Eft, 2002; Saks & Belcourt, 2006; Tonhäuser & Büker, 2016; Tracey, Hinkin, Tannenbaum, & Mathieu, 2001). Fig. 1 is based on the seminal training transfer model of Baldwin and Ford (1988), which can be positioned as the conceptual basis for subsequent training research and

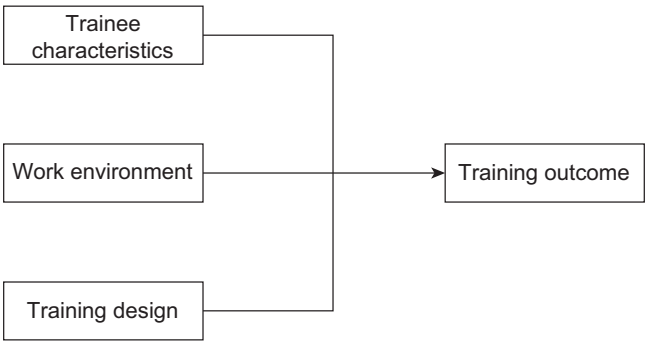


Fig. 1. Approach of current training models.

illustrates the approach of most training literature:

In the training literature reviewed, different elements of trainee characteristics, work environment, and training design interact via various processes to produce training outcomes, such as training transfer (Baldwin & Ford, 1988), individual performance (Holton et al., 2000), or affective, cognitive, and behavioural outcomes (Gully & Chen, 2010).

In academic training theory and models, the notions of sex and gender are almost absent. The exceptions are Colquitt, LePine and Noe (2000) who noted the absence of a consistent effect of gender on learning, given the lack of a theoretical rationale. Blume, Ford, Baldwin, and Huang (2010) found a small positive correlation between male gender and training transfer. An older model of training effectiveness by Tannenbaum, Cannon-Bowers, Salas, and Mathieu (1993) suggested an indirect impact through expectations and desires. In these studies, gender is interpreted as a person's binary sex category or whether trainees are female or male. These interpretations do not include a discussion of the impact of gender; the thoughts, feelings, and behaviours associated with the identification as female, male, or non-binary; or the impact of gendered norms and stereotypes. Gully and Chen's (2010) model is the only one considering sex/gender an important demographic variable and the impact of gender stereotypes. In their theoretical framework, the authors theorise how the interaction between trainee characteristics (capabilities, demographics, personality traits, and interests/values) and treatments (training design and situational characteristics) work through four intervening mechanisms to influence cognitive, behavioural, and affective learning outcomes. These four intervening mechanisms are 'information-processing capacity; attentional focus and metacognitive processing; motivation and effort allocation; and emotional regulation and control' (Gully & Chen, 2010, p. 7). The authors stress the likelihood of an interaction between sex/gender and training when sex-based stereotypes are apparent and suggest that 'depending on the training content and context, either males or females may exhibit superior training performance as a result of the four intervening variables' (Gully & Chen, 2010, p. 18).

Until very recently, in the professional training literature, publications, and websites, the notion of sex or gender was equally almost absent, except for the articles on female leadership programmes. Again, gender is mostly interpreted as the training participant's binary sex category, and merely seen as a 'descriptive factor' (Silberman & Biech, 2015 p. 20). An argument is that human brains cannot be categorised as male or female; hence, learning should not be differentiated between males and females (Shank, 2016). Other professionals recognise differences in lived experiences, challenges, and underlying beliefs and values, and conclude that women and men need different coaching and training (Caprino, 2014).

In sum, sex/gender has received limited attention in training theory and models and professional literature. When reviewed and incorporated in training literature, gender is interpreted as a person's binary sex category or whether trainees are female or male. These interpretations do not focus on the actual gender; the thoughts, feelings, and behaviours associated with the identification as female, male, or non-binary; or gendered norms and expectations. This leads to the core question this review aims to answer of whether training is indeed a gender-neutral endeavour; if not, then it raises another question of whether gender neutrality is an assumption that may lead to inequitable training.

4. Integrative literature review

To collect and review an exhaustive body of literature on the role and effects of sex and gender in training, I conducted an extensive multidisciplinary database search in four databases. I used the specific search term 'Training' as well as the generic term 'Learning' to retrieve articles on any learning intervention not specifically identified as training but, for example, as learning and development and management learning. Table 1 presents an overview of the databases and search criteria.

A search of abstracts and titles may not yield all studies containing sex/gender data, in the context of training and learning, especially when the impact of sex/gender is not specifically reported. To the best of my knowledge, this is the first comprehensive review that attempts to provide knowledge and understanding of the role of sex/gender in the training system. The search was limited to empirical papers in peer-reviewed English academic journals published between 2000 and 2020, with most of the source data collected after 2000. The review focussed on employee training and learning experiences in companies and public organisations. The role and impact of sex/gender as social construct is situated, and environments that are significantly different in their processes and structures, and training topics that are not typically offered within companies or public organisations, were not included. As a result, the review excluded research articles involving medicine, medical, or health; fitness, exercise, or physical activity; outdoor training; primary and secondary education settings and teachers; vocational education and apprenticeships; music, voice, and language training; military, armed forces, and prison settings; religious institutions; and developmental initiatives such as female micro credit programmes and female entrepreneurship. This review focussed on the role of sex/gender in training and learning initiatives lacking a specific inclusion and diversity objective. As a result, it excluded research on diversity training, unconscious bias training, or gendered career barriers unrelated to training or learning. Finally, the review excluded research among university and college students. The

Table 1
Search criteria and databases.

Term 1		Term 2	Title[a]	Abstract[a]
Training OR Learning	AND	Gender	WOS/ABI/ BSC	ABI/PI/ BSC
Training OR Learning	AND	Female OR Woman OR Women OR Females	WOS/ABI/ BSC	ABI/PI
Training OR Learning	AND	Male OR Man OR Men OR Males	WOS/ABI/ BSC	ABI/PI

[a] Rationale for Title and/or Abstract was based on opportunities for Advanced Search specifications per database WOS = Web of Science. ABI = ABI/Inform; PI = Psychinfo. BSC = Business Source Complete.

rationale for this choice is that, although research on students' experiences with training and learning may provide insights and opportunities to enhance T&D, the experience and impact of sex/gender is likely to be different in a working environment and later life phases, with changing organisational, relational, and societal contexts (O'Neil & Bilimoria, 2005). Based on these criteria, an examination of more than 10,000 titles, and a reading of 881 abstracts, I scanned 503 potentially relevant articles to affirm their empirical nature and determine the research scope, methodology, and source data specifics. As a quality check, I excluded journals without an impact factor, except for the case where the study addressed the impact of sex/gender on e-learning in companies (Chinyamurindi & Louw, 2010)—an urgent topic, given the reliance on virtual training and e-learning since the COVID-19 pandemic. Finally, before this review, two studies were already identified outside the searched databases (Gegenfurtner, 2020; Good & Mclean, 2001) that were insightful and relevant to understand the role of sex/gender in training. Table 2 provides an overview of the search results.

The final pool comprised 78 articles from a wide range of disciplines, such as Education, Human Resources, Psychology, Technology, and Gender studies. The vast majority (96%) of studies was nonexperimental. In all studies, sex/gender was either included in the a priori theory (91%), or reported post hoc (9%), when data samples were analysed by sex category. The articles were organised in line with the structure of the seminal training transfer model of Baldwin and Ford (1988), discussed before. The subsequent sections present an overview of the studies and their findings within each of the training elements: trainee characteristics (pre-training), work environment (pre- and post-training), training design (during training), and the training outcome (post-training). The use of sex/gender terminology reflects the terminology used by the authors of the reviewed studies. After the overview of the findings, a summary of the learnings, opportunities, and gaps is provided in the summary and discussion section.

4.1. Trainee characteristics

This review defined trainee characteristics as the ideas, thoughts, experiences, and behaviours possessed by training participants when they begin training. Baldwin and Ford (1988) identified three trainee characteristics—ability, personality, and motivation—impacting training transfer. In their recent synthesis of the known and unknowns of training transfer, personality, ability, learning states (e.g. mastery orientation), motivation, and self-efficacy are suggested as trainee characteristics impacting training transfer (Ford, Baldwin, & Prasad, 2018). Gully and Chen (2010) also presented the significance of considering the following trainee characteristics: trainees' interests, values, and beliefs.

Fig. 2 provides an overview of the 14 articles (in order of discussion) on the impact of sex/gender on trainee characteristics—training needs; motivation; self-efficacy; learning states/styles; and interests, values, and beliefs—and on the interaction between training and care responsibilities.

4.1.1. Training needs

Four studies investigated whether women and men differ in their training needs and the value they attach to different competencies. The first questionnaire-based study found that females and males leading higher educational organisations in Spain value the same set of leadership characteristics, though all characteristics were not valued at the same level, and there existed subtle differences in leadership styles between female and male academic leaders (Sánchez-Moreno, López-Yáñez, & Altopiedi, 2015). The authors analysed valued characteristics and their use and concluded that females have (or recognise) more and different training needs than men. The most remarkable difference between the training needs of women and men was the 'ability to achieve resources' (p. 267), which was the most evident training need for women, but not men. The female participants recognised that they needed to be more skilled and effective in this area. This raises the question of whether the underlying issue is a lack of power and influence in a male-dominated environment. Three more questionnaire-based studies presented a consistent story that females and males differ in the value they assign to competencies. Kairys (2018) assessed the impact of gender on the ranking of leadership skills by educational leaders involved in a vocational education training in Australia and found that, although females and males indicate the same skills important for leadership (cognitive, interpersonal, and business and strategic skills), they rank these skills differently. Females assign

Table 2
Search results.

	Web of Science (WOS)	ABI/Inform (ABI)	Psychinfo (PI)	Business Sourse Complete (BSC)	Taylor & Francis (targeted)[b]	Wiley Online (targeted)[b]	Total
Searched abstracts	459	287	52	83			881
Identified potentially relevant references	281	156	27	37	1	1	503
Removed after scanning the articles[a]	249	117	22	27			415
Removed journals without Impact Factor	2	5		3			10
Final pool	30	34	5	7	1	1	78

[a] A scan of the articles revealed that the research was conducted among students, too specific, or not transferrable to training in public and private organisations. For example, the articles were on training female small business owners in developing countries or on measuring the impact of the gender of the firm owners.

[b] Two additional studies were included in the review (Gegenfurtner, 2020; Good & Mclean, 2001).

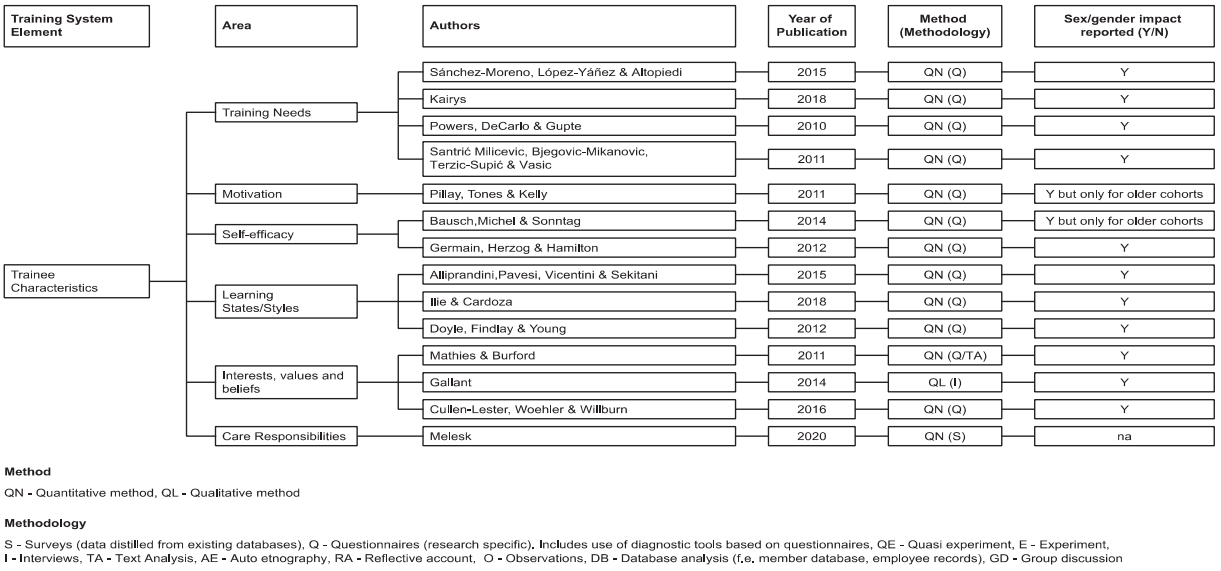


Fig. 2. Overview of reviewed articles – trainee characteristics.

the highest importance to interpersonal and cognitive skills, while males give utmost importance to business and strategic skills. The author argued that this difference is important because leaders are often assessed on task-oriented skills and business and strategic activities, followed by interpersonal skills. Although the author could have questioned this practice, the study suggested the use of the leadership programmes for re-orienting women interested in transitioning to senior management roles. Looking at the delivery and content of sales training practices, in a study among sales employees in the United States, Powers, DeCarlo, and Gupte (2010) found that female sales managers rate cultural issues, effective feedback, and team dynamics as more important than male sales managers. The final study examined 14 management trainee teams in Belgrade's public primary healthcare, by distributing questionnaires before and 5 months after the training. The study confirmed the finding that females and males differ in the value they assign to various management skills (Santrić Milicevic, Bjegovic-Mikanovic, Terzic-Supić, & Vasic, 2011). In this research, females valued communication and problem-solving competencies more highly than males. Females reported the highest gap between required and actual competency in assessing performance, while for males it was in problem solving.

4.1.2. Motivation

An online survey on trainee motivation comprising 1068 employees of an Australian local government association highlighted an intersection between age and gender, showing that younger females and males have almost identical interests and T&D preferences. However, mature-aged females and males differ in their preference of T&D content and design (Pillay, Tones, & Kelly, 2011). Mature-aged women were more likely to prefer in-house and informal training than mature-aged men and were more likely to respond that training should be offered 'when required' (p. 372). The authors listed the following barriers to women's career development: a masculine environment, different educational levels between mature women and men, and gender job stereotyping.

4.1.3. Self-efficacy

The age × gender effect discussed in the motivation research (Pillay et al., 2011) is also reported by Bausch, Michel, and Sonntag (2014); the study used questionnaires for trainees in a time- and self-management behaviour modelling training e-learning programme in Germany. It interpreted self-efficacy as the belief in the capability to handle a task or situation. Using self-reported questionnaires, the study measured training success as the use frequency of the training content 45 days after the training. There was no general difference in the self-efficacy for gender or age. However, the study showed that women and men differ in self-efficacy and training success with increasing age, thus indicating an age × gender effect. Older females showed lower self-efficacy compared with men before the training, and showed greater training success, which led the authors to conclude that older female learners underestimate their ability before training. The authors suggested that training design and evaluations should consider age and gender to motivate older women trainees. A second study by Germain, Herzog, and Hamilton (2012) considered self-efficacy in female in-training pilots in the United States; it showed that the female trainees as well as the female and male instructors noted low self-efficacy as a barrier to training success and that women were less confident and more critical of their own abilities. The absence of female role models, networks, and mentors, in the male-dominated aviation industry, triggered this lack of confidence and self-efficacy.

4.1.4. Learning states/styles

Three studies on learning states and styles have reported differences between females and males. A study on learning strategies in students (aged 18 to >51 years) of long-distance learning courses in Brazil reported that females use more cognitive and metacognitive

strategies, with no gender difference in dysfunctional strategies. It indicated that female participants are more strategic than male participants (Alliprandini, Pavesi, Vicentini, & Sekitani, 2015). The authors suggested the need to reflect on differences in learning strategies by gender when selecting training materials and strategies. Another study was conducted among US and Latin American participants enrolled in executive training programmes in a Latin American Business School. It showed that in all regions, men prefer rational, logical, objective, and strategic thinking styles (related to cortical areas of the brain), while women prefer sociability, empathy, interpersonal, consistent, and efficient and routine-oriented thinking (related to subcortical areas) (Ilie & Cardoza, 2018). The authors suggested that these findings may help to tailor T&D programmes for men and women based on their needs and roles. The authors mentioned that the differences may be associated with the differences in socialisation and cultural gender roles. Another study by Doyle, Findlay, and Young (2012) examined 151 hotel employees in Canada, focusing on learning, not training specifically. It found significant differences between female and male research participants in learning strategies, outcomes, facilitators, and barriers. However, the authors questioned whether these differences are driven by choice or the context in which women are situated. For example, the finding that females prefer to learn informally by working with others could be driven by a preference or a barrier in access to other types of learning. The authors concluded that different learning strategies work for men and women, and human resource professionals should be sensitive to these differences.

4.1.5. *Interests, values, and beliefs*

Mathies and Burford (2011) reviewed responses to questionnaires sent to frontline service employees in service industries in

Training System Element	Area	Authors	Year of Publication	Method (Methodology)	Sex/gender impact reported (Y/N)
Work Environment	Access to training	Dämmrich, Kosyakova & Blossfeld	2015	QN (S)	Y
		Boll & Bublitz	2018	QN (S)	Y
		Wotschack	2019	QN (S)	Y
		Aisa, Gonzalez-Alvarez, & Larramona	2016	QN (S)	Y
		Dostie & Javdani	2020 a,b	QN (S)	Y
		Sutherland	2016	QN (S)	N
		Harteis, Billett, Goller et al.	2015	QN (Q)	N
		Backes-Gellner, Oswald & Tuor - Sartore	2014	QN (S)	Y
		Picchio & van Ours	2016	QN (S)	Y
		Fitzenberger & Muehler	2015	QN (DB)	Y but varies with age
		Dieckhoff & Steiber	2011	QN (S)	Y
		Waddoups	2011	QN (S)	Y
		Halldén	2015	QN (S)	Y
		Duignan & Iaquinto	2005	QN (Q)	Y
		Linehan & Scullion	2001	QL (I)	Y
		Shortland & Porter	2020	QL (I)	Y
	Organizational Culture	Windels & Mallia	2015	QL (I)	Y
		Martin, Lord & Warren-Smith	2018	QL (I)	Y
		Wallace	2001	QL (I/ TA/O)	Y
		Tlaiss & Dirani	2015	QL (I)	Y
		Metcalfe	2006, 2007	QN (Q)/QL (I)	Y
		Stalker & Mavin	2011	QL (I)	Y
		Dosunmu & Adeyemo	2018	QN (Q)	Y
		Sjöberg-Forssberg, Parding & Vänje	2020	QL (I)	Y
		Bryans & Mavin	2003	QN (Q)/QL (GD)	Y
		Giazitzoglu & Muzio	2020	QL (I)	na
	Supervisor support	Hoobler, Lemmon & Wayne	2014	QN (Q)	Y
	Subordinate support	Atwater, Carey & Waldman	2001	QL (I)	Y

Method

QN - Quantitative method, QL - Qualitative method

Methodology

S - Surveys (data distilled from existing databases), Q - Questionnaires (research specific). Includes use of diagnostic tools based on questionnaires, QE - Quasi experiment, E - Experiment, I - Interviews, TA - Text Analysis, AE - Auto etnography, RA - Reflective account, O - Observations, DB - Database analysis (f.e. member database, employee records), GD - Group discussion

Fig. 3. Overview of reviewed articles – work environment.

Australia, when responding to what comprises good customer service. The responses of females showed a higher level of service orientation and focus on the actual service interaction and emotional outcomes, while males focussed on the functional outcomes of customer service. The authors suggested that this understanding can enhance the training of frontline personnel as well as the fit between the service understanding and roles of females and males. The authors did not reflect on the role of gender stereotypes and gendered role expectations—a perspective included in the study by Gallant (2014). The author interviewed aspiring female higher education leaders in Australia regarding the notions of leaders, leadership, and female leaders. The study found strong notions of gendered, traditional, and hierarchical thinking, with male leaders associated with hard skills and authority and female leaders associated with relational skills and nurturing perspectives. In an environment perceived as hierarchical, individualistic, competitive, and unsupportive of female career aspirations, the author concluded that these unconscious gendered views hinder the development of female leadership agency. The author recommended formalised leadership courses to deconstruct gendered notions of leadership and workplace interactions and help develop positive leadership identities, especially for women. The last study among US and Canadian senior leaders, managers, and professionals identified a difference between the interests of females and males in networking strategies, which impacts leadership learning and development (e.g. women are more likelier than men to join a formal mentoring programme, while men arrange more one-on-one time to talk and maintain their network). The study did not explore the reasons behind this difference (Cullen-Lester, Woehler, & Willburn, 2016). There was no difference in the perceived effectiveness of the networking strategies between women and men.

4.1.6. Care responsibilities

The current training literature does not reflect on the care responsibility a training participant must manage before, during, and after a training. A comparative multi-country research using Eurostat surveys involving over 50,000 women from 22 European countries showed that children significantly impact women's perceptions of family-related barriers to learning (Melesk, 2021). The intensity of the perceived barrier depends on supportive family policies, such as childcare provisions and gender-equal cultures. These barriers also depend on the pressure for learning beyond the initial education, as required by the labour market. The finding that care responsibility is a potential barrier to training and learning is especially relevant and urgent in the context of the COVID-19 pandemic impacting women and girls disproportionally through, for example, the care for out-of-school children and elderly relatives (UN, 2020).

4.2. Work environment

As per Ford et al. (2018), the work environment factors influencing training transfer are supervisor and peer support as well as the opportunity to apply trained skills on the job. The learning transfer system inventory model (Holton et al., 2000) includes similar factors; however, it adds important elements that relate to company culture, such as the openness to change, defined as whether the perceived group norms support or discourage the application of knowledge and skills acquired during the training. It must be noted that the aforementioned work environment factors included in the training models concern actual training participants. However, the impact of sex/gender is felt at an earlier stage, when gaining access to training. Fig. 3 provides an overview of the 30 articles (in order of discussion) on the impact of sex/gender on the work environment—access to training, organisational culture, supervisor support, and subordinate support.

4.2.1. Access to training

Of the 30 studies that I reviewed concerning sex/gender, training, and the work environment, 17 analysed gendered access to training. Analysing data across 20 societies from the Programme for the International Assessment of Adult Competencies (PIAAC) of the Organisation for Economic Co-operation and Development (OECD), a study showed that women are less likely to participate in employer-financed training but more likely to participate in non-employer-sponsored training (Dämmrich, Kosyakova, & Blossfeld, 2015). It found a lower training disadvantage for women in employer-financed training in countries with family policies supporting females' continuous and full-time labour force participation, such as childcare and parental leave, and more gender egalitarian cultures. Boll and Bublitz (2018) confirmed the importance of the institutional environment; they used data from the EU labour force survey wave from 2013 to analyse the impact of working hours and household context on job-related training in Germany, Italy, and the Netherlands. The study measured the relationship between training incidence/duration and earnings position in the household, gender, and workplace characteristics (e.g. full/part-time work). The findings are diffuse, with neither male nor female workers appearing to be systematically affected by their earnings positions in the household context in the Netherlands and Italy. However, the findings showed significant gender differences in job-related training in Germany. The authors concluded that, next to the institutional environment, different work and training cultures and gender roles in the labour market impact training incidence and duration.

The importance of understanding access to training at a detailed level is highlighted by the following three studies. The first study is based on a random sample selected from all German companies registered at the German Federal Employment Agency (Wotschack, 2019). This study also highlighted that family-friendly policies, at a country level, influence females' training participation, and organisational policies and practices supporting gender equity are crucial to training participation. In the cross-section of German employees, although there was no gender training gap at an aggregate level (between the percentage of females and males receiving firm-sponsored training), the case differed at an organisational level. Only a small number of companies reported no gender training gap, either disadvantaging women or men. The research reported strong regional, sectoral, and organisational level differences and a strong evidence that the gender training gap can be prevented through formalised organisational policies, a more gender-equal workforce and management composition, and employee organisations. However, the authors highlighted the limited explanatory

power of the model and showed that training participation is marginally impacted by organisational and sectorial analysis, supporting a model that allows considering other factors such as personal context and characteristics. The second study used data from the survey on adult population involvement in learning activities (AES), the Spanish counterpart of the European adult education survey, co-ordinated by Eurostat. Aisa, Gonzalez-Alvarez, and Larramona (2016) showed that an aggregate-level observation does not provide an accurate perspective. Overall, although no gender gap was detected in training participation in non-formal training in Spain, the gap was present in work-related and firm-financed training. As the motivation for training and the aspired benefits are the same for females and males, the authors argued that gender discrimination contributed to the female gap in access to firm-financed training. Since firm-financed training delivers significantly higher returns in terms of promotions, salary, and wages, underrepresentation in firm-financed training puts women in a disadvantageous position. The importance of looking beyond an aggregate level is confirmed by a third study that was based on the workplace and education survey (WES), a longitudinal survey of workplaces and their employees conducted by the Statistics Canada (Dostie & Javdani, 2020a). This study revealed that in the for-profit sector, women are less likely to receive training, while, in the non-profit sector, women are more likely to receive both classroom and on-the-job training. The results suggested that part of the gender–wage gap in the for-profit sector, which is twice as large as that in the non-profit sector, can be explained by gender differences in training. The authors found that these differences cannot be explained even by considering potential gender differences in personal and job characteristics and sorting into different occupations and industries. Hence, the results are driven by differences in working conditions, stereotypes, and discriminatory behaviour.

The importance of the role of intersectionality in understanding the role of sex/gender in access to training is highlighted in a study that also used WES data (Dostie & Javdani, 2020b). For the for-profit sector, the authors found that visible-minority immigrants of all genders experience significant disadvantages in the probability of receiving classroom training as well as the number and duration of training courses versus white immigrants. For males, the reason was selection into workplaces that offer fewer training opportunities. For females, it was a lack of within-workplace opportunities offered.

The study by Sutherland (2016) is the only one that did not report a statistical difference in the incidence and number of training days between females and males. The study extracted data from the 2011 workplace employment relations study in Britain. It suggested that the training premium traditionally accrued by males is diminishing if not disappearing as a result of changes in the industrial and occupational distribution of employment in Britain. The study suggested that a balanced picture can be obtained by including better controls in the dataset for industrial sectors and types of workplaces with a high concentration of females. It would be beneficial to elaborate on how controls in the dataset can impact the results in terms of training incidence and number of training days for females and males, especially since Dieckhoff and Steiber (2011, p. 153) argued that 'controlling for sex segregation patterns in the labour market has therefore helped to unveil (rather than explain) the sex gap in training to the disadvantage of women'. Another study reporting the lack of gender-based (and age-based) difference is based on a convenience sample of employees from different occupations, companies, and workplaces in Germany. This study focussed on the impact of gender, age, and occupational standing on the level of workplace support that is important for learning at work, arguing that workplace learning is not limited to formal training. Workplace support for learning was measured as the level of demanding work activities, job control, and social support in the work environment (Harteis, Billett, Goller, Rausch, & Seifried, 2015). Although the study did not find an impact of gender or age, it did show that the status of occupation crucially impacts opportunities for workplace learning. Given that the majority of senior roles are occupied by men, an age × gender × occupational analysis may have provided different insights on the role of sex/gender. The authors did not consider the workplace context but mentioned it as an important focal area for future research.

To better understand the factors creating disparities in female participation in firm-sponsored training, the following studies researched the impact of, for example, working hours, childbirth, parental leave, and firm size on training participation. In their sample of full- and part-time employees in Switzerland, Backes-Gellner, Oswald, and Tuor Sartore (2014) found that more than 50% of the females work part-time, while only 6% of the males work part-time. Being female negatively impacts participation in employer-provided training, with very little difference between part-time and full-time working women. However, in the case of male employees, the part-time nature of work, as opposed to full-time employment, significantly impacts the probability of men to engage in training. In their longitudinal Internet studies panel in the Netherlands, Picchio and van Ours (2016) also found that part-time work is highly disadvantageous for men. The study identified the influence of working hours on receiving firm-sponsored training for men, but not for women. The authors speculated that this difference may be attributed to social norms. In the Netherlands, although half of the women work part-time, it is less common to see part-time male employees, a prevalence of which may signal part-time male employees' lower career attachment or interest. Unlike the study of Backes-Gellner et al. (2014), the aforementioned study found no difference between full-time females and males in terms of firm-sponsored training. However, considering the research of Wotschack (2019), aggregate-level research may not show the differences existing at the organisational and sectorial levels.

The importance of the intersectionality between age and gender, which was previously discussed in the section on motivation of training participants, is also found in access to firm-sponsored training. A study analysed employee and training records of a large German firm (Fitzenberger & Muehler, 2015). It showed that, in the beginning, the level of training participation remains the same for females and males; after 25 years, the training incidence and duration diverges, with a peak or *dip* at the 35th year, after which the participation converges again between females and males. This finding is attributed to gendered career progressions in terms of childbirth, parental leave, and part-time work. The authors suggested the provision of active support for the career development of women, especially for part-time women workers, to narrow the gender training gap.

Based on data from 23 countries as part of the European Social Survey (ESS), Dieckhoff and Steiber (2011) analysed the impact of childbirth and caregiving to small children on the participation in continuous training. Reflecting on the human capital theory, the authors hypothesised that women with fertility plans and/or small children will participate less in training, while males with fertility plans/small children will engage more in training. The research did not find the predicted negative effect for females but found the

positive effect of fertility plans/small children on the training participation of males. When controlling for the composition of the male and female samples, the authors asserted that female workers face discrimination in training opportunities. Even after controlling for a higher incidence of part-time work and past unemployment as well as for the slightly lower average firm size (factors typically associated with lower training opportunities), women were found to be less likely to train than men, all else being equal. The authors confirmed the presence of a sex gap in training in Europe. The firm size's impact is further researched by Waddoups (2011), who used the 2001 instalment of the Australian Bureau of Statistics' survey of education and training to understand the impact of firm size on training participation. The study found that although the incidence of training is roughly comparable for male and female workers, males tend to train significantly more hours than their female counterparts along much of the firm-size spectrum. Finally, a gendered impact was measured on the time spent initially on-the-job training (OJT) (Halldén, 2015). The author used data from the 2000 Swedish level of living survey and matched firm registry data provided by the Statistics Sweden and concluded that the time spent in initial workplace training is gendered. Men have greater chances of receiving a long initial OJT than women, even after controlling for factors such as labour market experience, socioeconomic status, part-time work, the educational requirements of the job, and the proportion of women in the occupation and firm.

Overall, females seem to be disadvantaged in their access to employer-sponsored training, especially in the private sector, irrespective of working hours, career history, or firm size. The core issues driving female underrepresentation in employer-supported training are gender stereotyping and sex discrimination. This is confirmed by research among Japanese female and male workers regarding the perceptions of training received, co-worker support, future prospects, and an understanding of operations and goals and objectives (Duignan & Iaquinto, 2005). Males scored significantly higher than females in regard to the training received, future prospects, and understanding operations. The authors interpreted that these findings support the stereotypical Japanese workforce where female workers hold a lower status; hence, there is a substantially higher level of investment in training males versus females in Japan.

The final two studies on the access to training are qualitative and focus on female expatriate managers. Linehan and Scullion (2001) interviewed 50 female expatriate managers from a broad spectrum of industries in Ireland, the United Kingdom, Belgium, and Germany. The interviewees believed that the career development process for women is more complex and difficult than that for men and that barriers are experienced at all levels of career, career planning, and management development. The study showed a lack of predeparture training for female expatriate executives; this is based on the finding that only 10% of the sampled females received preparation training, which is believed to have been very helpful in the absence of female role models. Concerning international assignments, female participants described their benefits in terms of increased self-confidence, visibility, and promotional prospects. An absence of these benefits puts female employees at a significant disadvantage. The authors recommended international management development programmes tailored to the needs of female executives. Nineteen years later, a second study interviewed current female expatriates and human resource employees in two oil and gas exploration firms (Shortland & Porter, 2020). Female expatriates still perceive that their male colleagues gain access to relevant training more easily; they also reported a lack of transparency in the distribution of training resources. Organisations emphasise providing relational training to females instead of the more important technical skills training, based on the idea that, within a masculine work environment, relational training provides females access to the more important programmes.

4.2.2. Organisational culture

Organisational culture refers to the shared values, beliefs, and attitudes that affect how employees behave and organise work (Burke, 2014). Several qualitative studies have expanded on how organisational culture may impact training and learning for females; they have described how male and male-dominant organisational practices and behaviours impact the ability of females to learn and apply knowledge and skills. Windels and Mallia (2015) explored how sex and gender influence female identity development and learning trajectories in the male-dominated creative industry. They situated their study within learning as a social practice, instead of an individual, cognitive endeavour (Lave & Wenger, 1991), and described the experiences of females as they move from the periphery of the creative department to the centre. The gendered construction of the department acts as the major obstacle to the learning trajectory of females. Women lack the power, legitimacy, status, and community membership, which impacts job assignments and raises questions about their competence and ability. These challenges reflect the importance of the willingness to change and the strong group norms, as highlighted in the learning transfer system inventory (Holton et al., 2000). Martin, Lord, and Warren-Smith (2018) reflected how organisational learning depends on sharing knowledge and insights gained and how the 'otherness' of being a female, marginalised by male norms, results in a struggle to share experiences, with credibility as female managers questioned, voices of females unheard, and their presence unnoticed. They argued that organisational learning is not neutral and should be recognised as based on a masculine normative model. Instead of focusing on managerial women, a third study concentrated on work experiences and training opportunities for women in lower organisational hierarchies (Wallace, 2001). The author highlighted a self-fulfilling prophecy, as per which these women are positioned as having no career path and low-work affiliation owing to demands in private lives and/or job status. This expectation limited their access to part of the training curriculum earmarked for managerial positions (i.e. reserved for males), thereby maintaining a key dividing practice.

Similar barriers to training and learning are described in three more studies, with organisational practices favouring the training and learning of men over women. These experiences are positioned within a broader macro-perspective of the social culture in Arab societies characterised by patriarchy, male dominion, strong gender role segregation, hierarchies, and male power and female restraints. These factors impact the *meso* organisational cultures negatively impacting women's career development in a micro-individual-level experience (Metcalfe, 2006, 2007; Tlaiss & Dirani, 2015). These studies confirmed the earlier finding that societal culture and norms impact female training participation and opportunities (Dämmrich et al., 2015). As per Metcalfe (2006), 57% of the

respondents shared that limited training opportunities posed obstacles to female managers in the Middle East. Women are not encouraged to apply for training as they are expected to leave employment and have children after marriage. Hence, the author suggested developing women-management training, cultural training, and mentor programmes supporting positive role models for women (Metcalfe, 2006, 2007). Situated in the Middle East, Stalker and Mavin's (2011) study interviewed self-initiated female expatriates (expatriation not initiated by a company or organisation) and provided an important intersectional perspective. The interviews revealed how gender strongly interacts with nationality, in the experiences of the marginalised other (both foreign and female). Despite the presence of different role opportunities, compared to national women, female expatriates experience gendered workplace cultures, gender discrimination, and high levels of vulnerability. The interviewees experienced little access to formal workplace learning and development and relied on informal and relational learning. The societal context of female training participation is also highlighted in research on women in junior positions at a mobile telecommunications network in South Africa. This study confirmed the importance of workplace training and learning as a defence against sexual harassment, discrimination, disbelief in women's suitability as managers, a lack of mentoring, and male managers' active counteractivities (Dosunmu & Adeyemo, 2018). Hence, the study suggested that lifelong learning and ongoing organisational support are crucial to female employees' success.

A different research approach was taken in the case study by Sjöberg-Forssberg, Parding, and Vänje (2020). They involved women and men in the discussion and conducted document analyses and semi-structured interviews with workers and managers from two gender-segregated workplace contexts within a Swedish municipality—female-dominated homecare and male-dominated technical maintenance. Their study found a difference in expectations regarding professional identity; this is because homecare, unlike technical roles, is not perceived as a skilled professional role. It found that gendered organisational structures and cultures create enabling- and constraining learning environments, in male- (technical maintenance) and female-dominated workplace contexts (homecare), respectively. The challenges with identity were confirmed by a study with an opportunity sample of women attending a management development course in a business school in the North of England (Bryans & Mavin, 2003). Six female managers shared their experiences on how they learned to become a manager, highlighting issues pertaining to the identity as the 'other manager' (p. 128), status, access to information and exclusion, the need for negotiating their identity and fit. Importantly, for this review, the interviewees shared that the training was 'not very' or 'not at all' helpful (p. 123) in their efforts to become a manager.

The reviewed studies emphasised female experiences and how corporate masculine cultures exclude women and impact their training, learning, and development. An important and insightful exception is a study by Giazitzoglu and Muzio (2020) who investigated how men brought up in a working-class culture are forced to conform to the hegemonic masculine corporate culture. In order to be accepted, they learn how to behave, interact, and present themselves according to the dominant masculine culture (Giazitzoglu & Muzio, 2020). Specifically, in the following quote, the authors mentioned the induction training programme as one of the occasions where the rules of the game are learned:

> *At inductions, participants are introduced to what form of masculinity they are expected to enact, and what cultural capital they are expected to display and enact, as part of their professional roles. In other words, at induction, participants learn what an ideal man looks like, acts like, and sounds like to be seen as a credible employee. (*Giazitzoglu & Muzio, 2020*, p. 11).*

This research highlighted that while organisational culture can exclude minorities from accessing training, learning, and development, training can also be an important tool to reinforce corporate culture and teach people the 'rules of the game'—training as an enculturation.

4.2.3. Supervisor support

Supervisor support has been consistently mentioned as an important variable in the training system and transfer research (Ford et al., 2018). Supervisor support is discussed in the context of development opportunities, such as training, provided for females. In their thorough research on female managerial aspiration, Hoobler, Lemmon, and Wayne (2014) found that managers (both female and male) rate the career motivation of females lower than that of males, despite many control variables such as job performance and educational level. This perceived lower career ambition yields fewer development opportunities (challenging work assignments, T&D, and career encouragement from their managers), which, in turn, dampens career motivation in females. These findings are in line with the gender role bias; importantly, they highlighted the impact of training not only on knowledge, skills, and behaviours but also on motivation. The perceived lower career ambition and, as a result, lower development support is attributed as one of the reasons women are underrepresented at senior levels. From another perspective on gendered supervisor support, a study among female expatriate managers reported that it is much more difficult for women to be selected for an international assignment, especially because the pool is limited to candidates well-known to the selectors, the majority of who are males (Linehan & Scullion, 2001).

4.2.4. Subordinate support

A new element is suggested from a gendered perspective—subordinate support or the support of the people reporting to a manager. To provide an understanding of how the workplace can be different for females and males, one study showed that females are perceived to be less effective at disciplining, especially when delivering discipline to male recipients (Atwater, Carey, & Waldman, 2001). Male recipients were less likely to accept responsibility and more likely to think that discipline is unfair and mishandled. Follow-up studies attributed this attitude to both stereotypical gender bias and difference in behaviours. Notably, both female and male recipients report significantly more anger when disciplined by female managers, males are harsher in their discipline than females, and females receive tougher discipline. Hence, the study recommended special training in discipline delivery for female managers.

4.3. Training design

Training design covers the specifics of the training intervention such as the learning strategies used (e.g. cases, examples, demonstrations and discussions); error management strategies; practice; and difficulty of the learning tasks, retrieval tests and repetition, and setting transfer goals (Ford et al., 2018). Other models have added content validity, which is the extent to which training content reflects the job requirements (Gully & Chen, 2010; Holton et al., 2000). Twenty-three studies have examined the interaction between sex/gender and training intervention as depicted in Fig. 4 on: computer-supported and online learning, the content of the training and training material, group dynamics, and group composition.

Before reviewing the empirical studies, it is worth referring to a meta-analysis of 57 intervention-based leadership studies on the moderating effect of gender on the outcome of leadership interventions, such as leadership development programmes, based on the different expectations of male and female leaders, their style and effectiveness, and the impact of gender stereotypes (Avolio, Mhatre, Norman, & Lester, 2009). The meta-analysis suggested that, overall, there is a limited difference between females and males in terms of the impact of leadership interventions. However, the study described how the difference varies with the nature of the intervention, focus of the intervention impact, the applied leadership theory, sample characteristics, and study setting. Hence, it suggested that leadership programmes should consider gender differences in their design and structure.

4.3.1. Computer supported/virtual learning

Understanding the role of sex/gender in computer-supported learning is very relevant in light of the COVID-19 pandemic and an increase in the virtual training delivery. In a UK-based study, using a quasi-experiment with participants in driver safety training of a private emergency medical service, the researchers varied the design of an online, multimedia learning environment. Keeping the content the same, they measured the differences in the situational interest (Dousay & Trujillo, 2019). The study found no difference between females and males in the initial, triggered, or maintained situational interests. However, females showed a higher maintained interest in a design combining animation, narration, and text. This study is limited owing to the identical (middle) age category of the research participants and the lack of measurements for technological experience and familiarity.

Training System Element	Area	Authors	Year of Publication	Method (Methodology)	Sex/gender impact reported (Y/N)
Training Design	Computer literacy/ e learning/ virtual/ online learning	Dousay & Trujillo	2019	QN (QE/Q)	Y
		Ong & Lai	2006	QN (Q)	Y
		Okazaki & Renda dos Santos	2012	QN (Q)	Y
		Wang, Wu & Wang	2009	QN (Q)	Y
		Chinyamurindi & Louw	2010	QN (Q)	Y
		Yukselturk & Bulut	2009	QN (Q)	N
	Content	Blithe	2019	QL (AE/TA)	Y
		Robertson, Brummel & Salvaggio	2011	QN (DB/Q)	Y
		Sharen & McGowan	2019	QL (TA)	Y
		Thomas & Buckle-Henning	2007	QL (I)	Y
	Group dynamics	Skelton	2002	QL (RA)	Y
		Stead	2014	QL (I)	Y
		Miller	2005	QL (AE)	Y
		Good & Mclean	2001	QN (O)	N
		Honey-Rosés, Canessa, Daitch, et al.	2020	QN (E/Q)	Y
	Group Composition	Bayeck, Hristova, Jablokow & Bonafini	2018	QN (Q)	Y
		Lamsa & Savela	2014	QL (I)	Y
		Clarke	2011	QL (I)	Y
		Debebe	2011	QL (I)	Y
		Debebe	2017	QN (Q)/ QL (I)	Y
		Harris & Leberman	2012	QN (Q)/ QL (I)	Y
		Knipfer, Shaughnessy, Hentschel & Schmid	2017	QN (Q)	Y
		Selzer, Howton & Wallace	2017	QL (AE)	Y

Method

QN - Quantitative method, QL - Qualitative method

Methodology

S - Surveys (data distilled from existing databases), Q - Questionnaires (research specific). Includes use of diagnostic tools based on questionnaires, QE - Quasi experiment, E - Experiment, I - Interviews, TA - Text Analysis, AE - Auto etnography, RA - Reflective account, O - Observations, DB - Database analysis (f.e. member database, employee records), GD - Group discussion

Fig. 4. Overview of reviewed articles – training design.

Other studies reflected a lower computer literacy of females and, as a result, a more prominent role for self-efficacy and the ease of the use of technology for females than males. Ong and Lai (2006) examined gender differences in e-learning acceptance among the employees of six international companies in Taiwan and found that males scored higher than females on self-efficacy, perceived usefulness, the perceived ease of use, and the behavioural intention to use e-learning. It also showed how women and men differ in their decision-making process; while females' decisions to use e-learning are based on self-efficacy and the ease of use, males consider the perceived usefulness of e-learning. A study among faculty members of three Brazilian universities confirmed that females rely on the ease of use, based on the lower level of computer literacy, while males emphasise perceived usefulness to determine the intention to use (Okazaki, 2012). Another study with the employees of corporations and universities in Taiwan emphasised mobile learning using wireless Internet and mobile devices (Wang, Wu, & Wang, 2009). Females differed from males in that social influence was a significant determinant for males but not for females. In the light of the age × gender discussion, it may be interesting to note that social influence and effort expectancy—'the degree of ease associated with the use of the information system' (Wang et al., 2009, p. 98)—were only significant for older users. This finding was attributed to a higher perception of self-efficacy and self-worth of younger people.

Unlike the previous studies, a study among employees from four large companies in South Africa, which had implemented e-learning for more than 5 years, examined the impact of gender on e-learning and showed a higher level of computer self-efficiency (CSE), the perceived ease of use (PEU), the perceived usefulness (PU), and the behavioural intention to use (BI) for female than male participants. This was an unexpected finding (Chinyamurindi & Louw, 2010). The authors highlighted the need for qualitative research to understand the results and recommended including age as a variable in future research. A Turkish study conducted during an online information technologies certificate program did not find any difference between female and male participants' motivational beliefs, self-regulated learning variables, and achievement, despite dissimilar responsibilities for females as mother, wife, and employee (Yukselturk & Bulut, 2009). A gender difference was reported for variance in achievement; while test anxiety was attributed to the variance in the achievement of females, for males, this variance was explained by self-efficacy and task value. The study recommended not to differentiate online programmes between females and males.

4.3.2. Content

Four studies discuss the gendered content and competencies of training. Training programmes are often developed around a set of competencies, or the knowledge, skills, and behaviours needed to perform a role successfully. They also compare the required versus the current level of competencies (Salas & Stagl, 2011). Hence, a gendered perspective on competencies may differently impact the learning and training outcomes for females and males. The review starts with two studies assessing how competencies are (unconsciously) gendered and, subsequently, presents two studies analysing how females are presented in the training content.

4.3.2.1. Gendered competencies. Although competencies may be positioned as gender-neutral and objective in training programmes (Salas & Stagl, 2011), the following studies provide a different perspective. Blithe (2019) reflected on her work as a strength-based trainer and found that, although the programme texts did not reveal any explicit gendering, in practice, strengths were valued disproportionately and linked to binary gender categories, perceived as a male or female strength by the trainees. Trainees drew on their existing binary views of femininity and masculinity and the skills associated with females and males, and the consumption of the material and the training were not in line with the actual training text. Focusing on 10 managerial and executive competencies, another study examined whether these competencies were perceived to be masculine or feminine and communal or agentic (Robertson, Brummel, & Salvaggio, 2011). It found that the femininity and masculinity competency rating differed between women and men, but the communal and agentic ratings were the same for all the 10 competencies. The feminine competencies were rated as more important by both women and men, but the agentic competencies were more important than the communal competencies. It suggested that managerial positions may be less covertly but more subtly gender-stereotyped in terms of agentic and communal, which may be less value-laden. This research presented an intriguing scenario, with directors named Jack and Jill possessing similar work habits. Jack and Jill had the same competency ratings, but Jack was preferred to Jill for promotion. The authors referred to the theory suggesting that females face higher standards and to schemas representing men as more capable than women; they suggested including training content on gender schemes and gender bias.

4.3.2.2. Absence of females in training content. A study analysed 266 business cases published by a large Canada-based publisher between August 2013 and 2014 (Sharen & McGowan, 2019). In 19% and 37% of these cases, a woman featured as the leading character and a solo leading character, respectively, versus the 65% of the cases that had a male lead character. The presence and voice of the female lead was less dominant than in the cases with male leads. In terms of quality, women lead characters were represented as less visionary and creative, risk averse, less rational, and less decisive, with fewer interorganisational collaborations and less challenging experiences to develop an identity; they were also portrayed as less agentic, more emotional, cautious, less certain, more ethical, and more detail-oriented at the expense of the bigger picture. However, they were considered assertive. There was a strong need to establish the credibility of the female lead character, unlike that of the male lead characters. The authors argued that, although the cases are positioned as neutral, they reflect a hidden curriculum reinforcing gender stereotypes, and hence they maintain the status quo of female underrepresentation in leadership. Hence, a trainer's role is not limited to teaching skills to do a job but also to recognise and address the social context in which the skills will be applied. Highlighting gendered training materials, another study examined the lived experiences of a (small) group of successful project managers (Thomas & Buckle-Henning, 2007). Despite the formal body of knowledge overemphasising masculine project management skills, project managers balance masculine and feminine cognitive styles and behaviours in practice to manage a project successfully. The study found that junior project managers depend on the masculine

models, in line with the official body of knowledge, again confirming the age × gender dynamics in training.

4.3.3. Group dynamics

Small-scale qualitative research examined group dynamics, feminine and masculine behaviours and norms, and power and privilege. A reflective account explored the meaning of an inclusive learning environment (ILE) and discussed how this was reflected in a development course for university lecturers (Skelton, 2002). The study discussed the difficulties associated with moving outside of the traditional (theoretical) forms of knowledge and challenging normative assumptions and practices and marginalised viewpoints limited by race, gender, class, and sexuality. Specifically, it explored the impact of, and silent responses to, comments and jokes about sexuality and gender during the group discussions, and recommended discussions on themes like power, discrimination, and oppression during learning.

Discussing group dynamics and social interaction during training, two articles focussed on gender within an action learning approach. Stead (2014) interviewed six women experiencing action learning as part of a leadership development programme. Action learning focuses on peer learning and solving real business cases and challenges. The female experiences highlighted the perceptions of gendered power dynamics in action learning and the dominance and conformance to masculine norms, which impacted the leadership development of the women interviewed. The women were unable or unwilling to share their feelings about gender power dynamics, possibly driven by the dominant principle of trust and togetherness in action learning, making it difficult to raise differences and gender challenges. The author emphasised the high demands on facilitators (and arguably trainers) to discuss the issues of gender, power, and interests. The challenges associated with these discussions are explored in an autobiographical account of a group process in which an all-male group of hegemonic masculine managers completed a 12-month action learning programme, challenging masculine ways of working and discovering a more feminine style of behaving and managing (Miller, 2005). The descriptions showed the difficulties these managers faced in giving up old habits and behaviours and exploring new ways of working. The importance of this research is that, typically, gender and leadership literature highlights how females can develop and perform more senior roles and how organisations can support female development. This research emphasised how men can develop a wider repertoire of behaviours and feminine styles of leading, which is equally important for the development of inclusive female and male leaders.

Two studies discussed the impact of gender on verbal interaction. An observation study recorded and analysed the number and type of verbal interactions (praise, acceptance remediation, and criticism) between the trainer and the trainees during 13 selected business and industry training sessions across the United States. It found no difference in verbal interactions, based on gender, between the trainer and the trainee (Good & Mclean, 2001). Unlike school-based research, which found less verbal participation in the case of girls versus boys, the absence of difference in the aforementioned study is attributed to the self-confidence of the well-educated females and their maturity/seniority. The authors concluded that the inclusion of non-verbal interaction and peer interactions is important for future research. In addition, although the study measured gender composition, it has not been reported as a variable, which I would suggest might be another opportunity for future research. Another study on verbal interaction involved a different setting—a regional workshop on the participatory environmental governance for sustainable natural resource management in the Latin American and Caribbean Region, organised by the United Nations Development Programme (UNDP) in Panama City (Honey-Rosés et al., 2020). This study involved a field experiment comprising two parallel sessions with contrasting facilitation approaches—structured and unstructured facilitations and pre- and post-workshop self-reported surveys. The authors reported that male participants perceived women to have spoken more during the workshop, while females perceived that females spoke less, irrespective of the facilitation approach. However, the study did not explore the reasons or impact of this finding.

4.3.4. Group composition

I reviewed a study among female and male participants in a creativity, innovation, and change massive open online course (MOOC) that explored views on the importance of working in single-sex versus mixed groups (Bayeck, Hristova, Jablokow, & Bonafini, 2018). It confirmed that group composition is culturally situated based on the finding that although single-sex groups are unimportant in gender-equal regions, these groups are important in gender-unequal regions. Within gender-unequal regions, single-sex group formation was ranked as more important by male than female participants from the same region. However, no difference was found in gender-equal regions. Age also influences the single-sex grouping; younger participants were found to be comfortable working with any gender-group formation. The authors recommended that group composition is an important consideration in learning and teaching strategy, supporting the view that learning is a social activity. Group composition has received considerable attention with the rise of female-only leadership programmes (Debebe et al., 2016). Studies have examined the participants of all-female MBA or leadership programmes whose core outcomes were increased assertiveness, self-confidence, self-efficacy, self-awareness, the feeling of credibility as a leader, and the development of a female leadership identity (Clarke, 2011; Debebe, 2011; Harris & Leberman, 2012; Lämsä & Savela, 2014). Research among female participants of a formal women-only training described how females face the double bind of facing both gender norms and leadership role norms. To be effective leaders, females need to respond to dual demands of context and authenticity—defined as an ongoing process of becoming—which is reflected in a dual contingency model of women's leadership effectiveness (Debebe, 2017). The dual demand of authenticity and context are also highlighted in an evaluation of a pilot female leadership programme for aspiring academic leaders, situated within the context of a highly masculine and higher academic culture and the need for female leaders to stay authentic (Knipfer, Shaughnessy, Hentschel, & Schmid, 2017). It highlighted the need for female-only training that can give women a voice and enables them to share experiences about gendered career barriers and role conflicts. Interestingly, it focussed on the relational component of authenticity, given that followers should identify and accept the leader's value, in line with the importance of subordinate support discussed in the context of female leaders (Atwater et al., 2001).

The aforementioned studies show that women-only settings create a safe, open, honest, trusting, and supportive atmosphere; a

feeling of belongingness; and an acceptance to share gender-related concerns and experiences. These experiences are difficult to find in a mixed gender environment and may be avoided for the risk of being perceived as weak or uncommitted (Clarke, 2011; Debebe, 2011; Lämsä & Savela, 2014). Clarke (2011) reported that the women perceived the invitation to attend a female leadership programme as an indication that management valued their contribution. This finding confirmed the strong motivational influence of training participation (Hoobler et al., 2014). It must be noted that programme participation does not immediately impact career plans or progress; a majority of women believe that the actual progress and implementation of learning depends on personal circumstances, work context, and organisational culture (Clarke, 2011; Debebe, 2017). The final research reviewing female-only programmes moved beyond an uncritical evaluation of the women-only leadership programme (WLP) in which the authors participated (Selzer, Howton, & Wallace, 2017). This study adopted the perspective of connected knowing, valuing emotions, intuition, and personal experiences (Belenky, Clinchy, Goldberger, & Tarule, 1997). Learning is positioned as relational, in line with previously reviewed studies (Lämsä & Savela, 2014; Windels & Mallia, 2015). It recommended addressing the three interrelated levels to develop female leaders—the personal, interpersonal, and organisational levels. Intersectionality and identifying and exploring multiple identities, such as racial and motherhood identities, are positioned as key ingredients of any WLP. It also emphasised the need to be critical about the term 'women' in women leadership development, which was missing in this WLP. The core question suggested is what is meant by 'women', to which women is this programme speaking, and who is excluded.

4.4. Training outcome

In the training literature, the training outcome is approached from different perspectives such as generalisation and retention (Ford et al., 2018); proximal and distal outcomes (Kozlowski & Bell, 2009); skill expansion (short-term), transfer (mid- and long-terms), and organisational success (long-term) (Tonhäuser & Büker, 2016); and affective reactions, utility reactions, declarative and application-based knowledge (Tracey et al., 2001). An encompassing perspective in the model of Gully and Chen (2010) (based on Kraiger, Ford, & Salas, 1993) suggested three training outcomes—cognitive outcomes (knowledge and the knowledge structure); behavioural outcomes (training transfer, skill generalisation, and adaptation); and affective outcomes (attitude, motivation, satisfaction, self- efficacy, and perceived utility). Fig. 5 depicts the 11 studies reviewed in sex/gender and training outcomes—training transfer, affective outcomes, behavioural outcomes, and career moves.

4.4.1. Training transfer

Velada, Caetano, Bates, and Holton (2009) tested the validity of the learning transfer system inventory (Holton et al., 2000), measuring 16 factors influencing the training transfer process through 89 items. This study sampled participants enrolled in various training courses in Portugal. Results showed that females and males produce a statistical difference in the perceptions of five factors: positive personal outcomes, transfer effort—performance expectations, performance–outcome expectations, openness to change, and personal capacity for transfer. Males have higher perceptions on these factors than females. Importantly, this study demonstrated the influence of the work environment and dominant norms and practices on the motivation for training and the ability to implement and benefit from training. It suggested that one of the rationales for the differences between females and males is the higher level of workplace support provided to males than females in organisations. Al-Swidi and Al Yahya (2017) examined training effectiveness, transfer intention, and learning styles among university staff in the Kingdom of Saudi Arabia. They found that males are more inclined

Training System Element	Area	Authors	Year of Publication	Method (Methodology)	Sex/gender impact reported (Y/N)
Training Outcome	Training Transfer	Velada, Caetano, Bates & Holton	2009	QN (Q)	Y
		Al-Swidi & Al Yahya	2017	QN (Q)	Y
		Gegenfurtner, Knogler & Schwab	2020	QN (Q)	N
		Gegenfurtner	2020	QN (Q)	N
	Affective	Bradley & Lee	2007	QN (Q)	Y
		Fragoulis & Phillips	2008	QN (Q)	Y
		Giangreco, Carugati, Sebastiano & Bella	2010	QN (Q)	Y
		Tabvuma, Georgellis & Lange	2015	QN (S)	Y
	Behavioural	An & Meier	2020	QN (E/Q)	Y
		Chen, Takeuchi & Wakabayashi	2005	QN (Q)	Y
	Career moves	Banush	2020	QN (DB)	Y

Method

QN - Quantitative method, QL - Qualitative method

Methodology

S - Surveys (data distilled from existing databases), Q - Questionnaires (research specific). Includes use of diagnostic tools based on questionnaires, QE - Quasi experiment, E - Experiment, I - Interviews, TA - Text Analysis, AE - Auto etnography, RA - Reflective account, O - Observations, DB - Database analysis (f.e. member database, employee records), GD - Group discussion

Fig. 5. Overview of reviewed articles – training outcome.

towards transfer training and attributed the difference to the perceptions and attitudes among the male and female groups. They did not address the likely influence of gendered work environments. They also found that men have a stronger belief than women that a match between learning styles and consistency with training technique is important for the transfer intention. The authors suggested that females are more willing (or arguably are forced) to learn new things, despite the learning not matching their preferred learning style.

A different instrument to measure the trainees' interest in training content and training transfer, the transfer interest questionnaire (TIQ), is introduced by Gegenfurtner, Knogler, and Schwab (2020). In the study, trainees attending one of 14 training courses in Germany completed the TIQ; the authors found a strong statistical correlation between the interest in training content and training transfer. There was no difference between males and females in the interest in training content and training transfer. Another study by the same lead author focussed specifically on the difference between female and male trainees in their reaction to training, specifically subjective task value and the motivation to transfer training (Gegenfurtner, 2020). The study did not find any difference between female and male trainees, except for the attainment value. The author argued about the unproductivity of theoretical models on training effectiveness, which consider gender as a prominent factor, the redundancy of gendered training strategies, and the exaggerated and costly claims of gender differences. Given these strong statements and based on the reviewed literature on the impact of sex/gender in the training system, it is worth examining this study in more detail. First, given that the trainees voluntarily entered the programmes, they may have passed a selection process that would have determined which course content and approach would fit their training need. Second, attainment value is an area where one could theoretically expect a difference in the measures between females and males; it is related to the importance of doing well on a task related to the sense of self. The sense of self and identity work are critical to female development (Clarke, 2011; Debebe, 2011, 2017). However, the difference between females and males found on this measure, with higher estimates for men in this study, has not been explored. Finally, this research measured interest, intent, and motivation, and not the actual implementation, which is when considerable barriers may arise for females, and training effectiveness and relevance for females is questioned, as has been shown in many of the studies discussed. This study argued that it confirms the gender similarity hypothesis. The gender similarity hypothesis strongly advocates the importance of context in understanding differences and similarities between females and males (Hyde, 2014). However, this study emphasised only the sex category and not gendered contexts.

4.4.2. Affective outcomes

A study investigating training satisfaction and implementation found significant differences in training outcome between females and males (Bradley & Lee, 2007). Results showed that the training satisfaction of the employees of an US university on an enterprise resource planning (ERP) system implementation was crucial to the use of the ERP system. There was a significantly lower level of training satisfaction for females than males and a stronger need for more training for females than males. The authors questioned whether the training methods are appropriate for females and males or whether the use of the system is different for females and males, which would contextualise the research and become an important consideration in future research. Considering in-house training programmes, another study surveyed the beliefs towards experiential learning of senior employees and managers of companies working in the financial services sector in Greece (Fragoulis & Phillips, 2008). The study indicated that males are less satisfied than females, specifically with the organisation and the delivery of the programmes, which is attributed to the critical nature of males and their tendency to attend more management development programmes than females. An alternative explanation could be that females are more flexible, as suggested by Al-Swidi and Al Yahya (2017). The same rationale is used to explain why younger trainees are more satisfied than the older trainees; there seems to be a missed opportunity to understand the age × gender dynamic. It would be interesting to understand satisfaction levels in terms of the content and the utility of the training, not just its organisation and delivery.

A third study surveyed participants enrolled in 1230 courses, involving 3047 companies in Italy. The study hypothesised that female participation (as percentage of female trainees participating in a single course) increases the overall training satisfaction, driven mainly by anecdotal evidence from human resources practitioners that women exhibit high levels of commitment when participating in courses to counterbalance their contextual discriminatory circumstances (Giangreco, Carugati, Sebastiano, & Bella, 2010). Results showed that a higher presence of females is associated with greater training satisfaction. The recommendation is to ensure a significant presence of female trainees in the target audience, whenever possible, to increase overall satisfaction ratings. It is unclear whether females are more satisfied or whether more diverse groups result in greater training satisfaction for males and females. A finding that may provide an interesting perspective is that the relationship between trainer performance and overall training satisfaction increases with a higher percentage of female trainees. The authors noted that 70% of the trainers were male. Hence, this aspect may have driven the alternative conclusion that male trainers perform better in the presence of a higher number of females. Tabvuma, Georgellis, and Lange (2015) analysed data from the British Household Panel Survey 1999–2008. They found that orientation training, which facilitates workplace socialisation, is a strong predictor of job satisfaction. However, although the positive effect of orientation training on the job satisfaction of newcomer male employees is present in both the private and public sectors, females experience this satisfaction only in the public sector. The authors suggested that this may be reflective of public sector employers ensuring that HR practices encourage work-life integration and that newcomers are accepted in the workplace. This outcome may confirm the finding that orientation training can be perceived as an enculturation, showing how the game is played (Giazitzoglu & Muzio, 2020), with rules that may not fit the needs of female employees in the private sector.

4.4.3. Behavioural outcomes

Conducted with Danish leaders, an experiment analysed behavioural outcomes regarding gender and the effectiveness of leadership training (An & Meier, 2020). It included three treatment groups and a control group in leadership training—transformational,

transactional, and combined leadership training. The study found that, in general, employees perceived female managers to be more likely to use transformational leadership and verbal rewards than male managers, before the leadership intervention. Despite these pre-existing differences, the leadership training improved the skills of both male and female managers. However, female managers improved their leadership skills further over time, and hence the authors concluded that female leaders improved their skills to a greater extent as result of the training, irrespective of the form of the training. The second behaviour-outcome study argued that men are instrumental types (independent, self-confident, and self-oriented), while women are expressive types (concerned for others and focussed on interpersonal relationships) (Chen, Takeuchi, & Wakabayashi, 2005). The authors believed that these traits represent essential, stable differences between men and women. Conducted among workers at Chinese state-owned corporations, this study found a stronger positive effect of a supportive work environment on the utilisation of managerial skills for females than for males (explained by the argument that women are more expressive). An alternative perspective to these findings could be that women face a more challenging work environment than that of men. Hence, women must have a more supportive work environment than men to implement the skills learned in training.

4.4.4. Career moves

A study provided data on the impact of gender on career moves after training. Based on the membership database of the Association of Research Libraries Leadership Fellows Program (ARLLFP), the data spanned from the programme's inception in 2004 through 2019 (Banush, 2020). At the aggregate level, male participants in the ARLLFP were disproportionately more likely to take a different role than that of the female participants. After the programme, 61% of all the women performed the same role. The study concluded the presence of a glass ceiling effect.

5. Summary and discussion

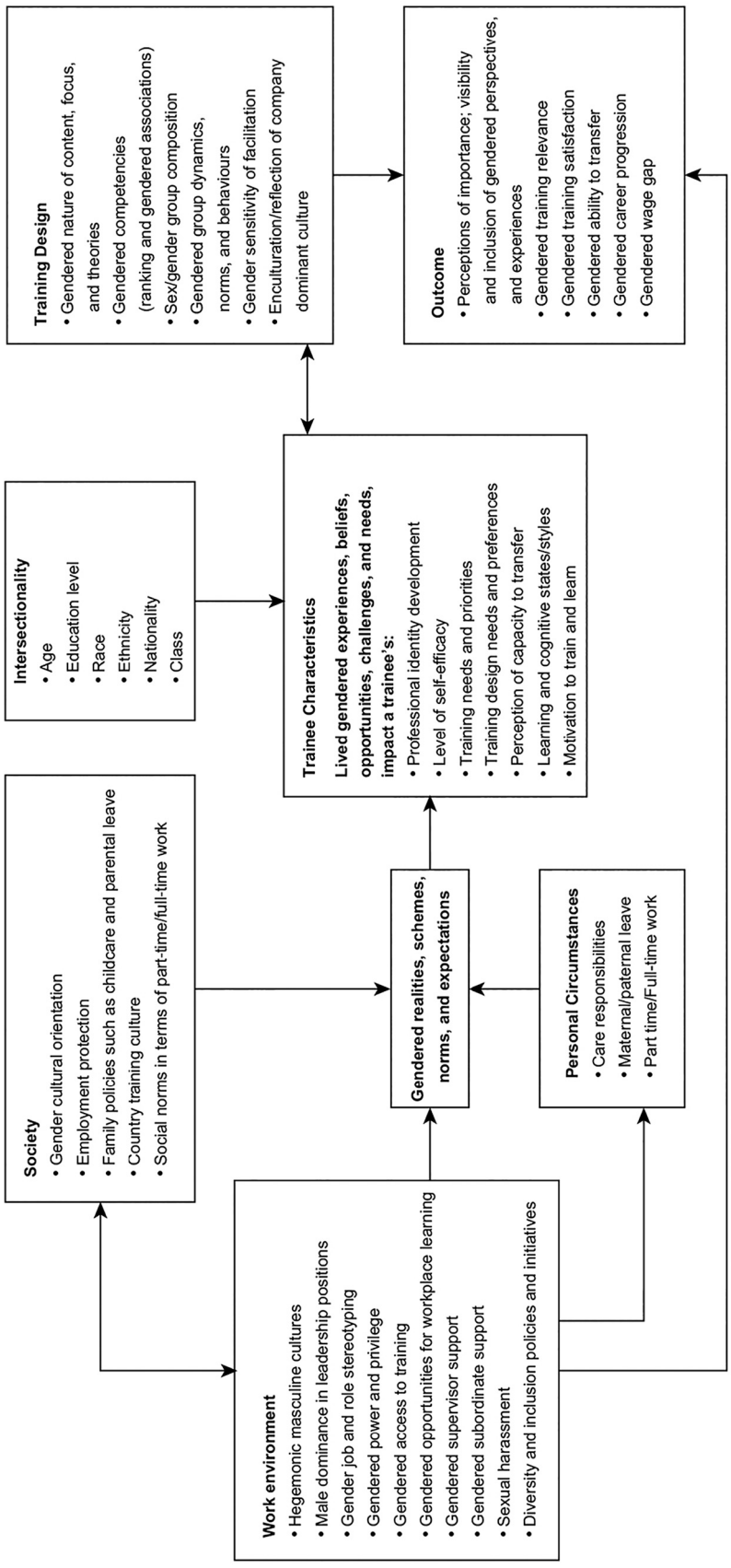
The reviewed literature on sex/gender and training ties empirical research from different disciplinary and regional perspectives on trainee characteristics, work environment, training design, and training outcome. Studies reporting an impact of sex/gender in the training system account for 90% of all studies; this impact stems from the work environment, trainee characteristics, (interaction with) training design and/or outcome.

In terms of trainee characteristics, studies have reported differences between females and males in training needs, motivation, self-efficacy, learning and cognitive styles, interests, beliefs, and values. These differences may impact training content, design, and evaluation. Care responsibility influences the perceived barriers to train and learn; it is an important finding, given that the COVID-19 pandemic disproportionally impacted women and girls, especially because of an increase in unpaid care work (UN, 2020). In terms of motivation and self-efficacy, the results highlight an intersectionality between age and gender, possibly implying that younger generations may be more similar in motivation and self-efficacy, which may cause the differences to disappear in the future (Bausch et al., 2014). The intersectionality between sex/gender and ethnicity was shown when studying the access of immigrants to training (Dostie and Javdani, 2020b).

The concern with the studies discussed is that conclusions imply essential differences between females and males. They do not measure why the differences exist and how gendered realities, stereotypes, norms, and expectations impact these differences. The studies suggest that the reasons behind the differences are socialisation effects, gender roles, social status, power imbalance (Ilie & Cardoza, 2018), masculine work environments, and stereotypical gender roles (Pillay et al., 2011). However, they do not measure these gender-related variables. When they were included, the research comprised only females, and thereby failed to incorporate male perspectives (Gallant, 2014). Hence, their limitation is a focus on individual differences; the studies do not show how the training system creates and reinforces differences between female and male trainees.

The research on work environment provides a more contextualised perspective. Although training research often focuses on the *meso* (organisational) and micro (individual) trainee level, reviewed studies show that the macro (society) level, such as family-friendly policies and gender-equal cultures, strongly influences female training participation in firm-sponsored training. Part-time work and career interruptions at mid-career level impact female training participation. However, organisation-level policies and culture, and especially male-dominated hegemonic masculine cultures, significantly impact the learning and training of females and subordinated masculinities, in terms of the access to training, the application of learning, adjusting to dominant group norms, being heard and being able to implement knowledge and learning—an important factor driving training transfer (Ford et al., 2018). The intersectionality between sex/gender and nationality and class were highlighted in two studies (Giazitzoglu & Muzio, 2020; Stalker & Mavin, 2011). The review highlighted the gendered nature of the work environment and the importance of contextualising training research. Training and learning are not only individual but also social, and training can be positioned as an enculturation or as learning the rules of the game and the profession (Giazitzoglu & Muzio, 2020; Lave & Wenger, 1991). Again, in the quantitative research, the challenge is to include not only sex category but also other measures of gender, such as the impact of the described and prescribed stereotypes regarding being a female or male. In the qualitative research reviewed, this aspect was highly visible. However, this research was mostly limited to females; in one case, it comprised only males, which risks positioning females and males against each other and not giving women and men a voice in the sex/gender and training research.

The interaction between sex/gender and training design was analysed from several perspectives. In terms of online or computer/mobile supported training, a careful conclusion could be drawn that sex/gender influences the attitude towards and use of online or mobile-based technology in training, only when a sex/gendered impact on computer self-efficacy and literacy is measured. Sex/gender, age, education, and country culture are important intersectional considerations impacting the ease of use and self-efficacy for female and male trainees. With younger generations, these sex/gender differences may become less significant. However, considering



(caption on next page)

Fig. 6. A sex/gender-sensitive model of training.

the reliance on online learning and training as result of the COVID-19 pandemic, it is important to be sensitive to the gendered nature of attitudes towards and use of online learning. Concerning content, studies highlight that training content can have a strong gendered meaning, even when perceived as neutral and objective. Trainees operate in a gendered world and have gender schemes that lead them to interpret the training material in a gendered way. A failure to recognise and interpret training material and content on covert gendered meaning and messages does not mean that the training material is gender-neutral. Group composition is another important consideration in training design; it is crucial to understand the gender dynamics, norms, and behaviours. Special attention is paid to female-only leadership programmes positioned as a safe environment for women to learn, build self-confidence, develop identity, and share experiences as females working in masculine, male-dominated work environments. It became clear that females do not share experiences with gendered barriers and role conflicts in mixed gender training to avoid the risk of being seen as weak or uncommitted. However, women-only programmes may be problematic as they run the risk of essentialising 'women', and thereby maintain a gender binary. They may not explore and accept multiple roles and identities of men and women. Questions were raised about the impact of these programmes on female career development and whether personal and organisational contexts allow for the application of learning. A relevant question may be whether women who participated in women-only programmes advanced faster than women who did not participate (Knipfer et al., 2017).

The training outcome research is all quantitative, sex-category based, and mostly decontextualised in its data collection, though reference is made to gendered environments, stereotype gender roles, and male-dominant cultures to explain the differences between females and males in terms of training satisfaction, post-training behaviours, or career prospects. Some of this research shows the dangers of quantitative, sex-category based, decontextualised research with, for example, the recommendation to add females to increase training satisfaction (Giangreco et al., 2010).

6. Theoretical implications

This review outlined the impact of sex/gender in the training system, as reported through the 78 multidisciplinary studies from all over the world, conducted between 2000 and 2020. Based on this review, a sex/gender-sensitive model of training is proposed, as shown in Fig. 6. The model reflects how the elements of the current training theories and models—work environment, trainee characteristics, training design, and training outcome—are gendered, that is, constructed differently for women and men, and arguably non-binary genders.

Training theory and models to date have focussed on understanding the different areas within each of the training elements and the relationships between them. Consensus has been reached on the importance and impact of several areas, such as supervisor/peer support and the opportunity to perform (work environment);, motivation, and self-efficacy (trainee characteristics); and learning strategies and goals (training design) (Ford et al., 2018). The sex/gender-sensitive model of training highlights that several of these areas are gendered, or in other words, that being a female, male, or arguably non-binary training participant may first impact to what extent these important areas are available to the training participant, for example access to training and supervisory support. Second, the model highlights that areas, such as learning strategies, motivation, and self-efficacy may be different for females and males, dependent on lived gendered experiences, challenges, and needs. This confirms the suggestion by Gully and Chen (2010) that sex/gender may impact training participants' information processing, focus, motivation, and emotions.

The model also includes additional factors, not included in current theories and models that impact training experiences and outcomes, that were reported when studies looked with a sex/gender-sensitive lens, such as societal gender culture, family-friendly policies, gendered norms and expectations, personal context such as care responsibilities, and subordinate support. The importance of these additional factors may mean that current theories and models are mainly applicable to male learners. Finally, the sex/gender-sensitive model highlights the impact of intersectionality as an important additional consideration, addressing that gendered experiences interact with, and are impacted by, for example, the trainee's race, age, class, and ethnicity. Further expanding the understanding of the impact of intersectionality on gendered experiences is recommended for future research, as the question should not just be whether females and males are included in training theory and practice, but which females, males, and non-binary people are included.

The model reflects that the thoughts, beliefs, and behaviours of a training participant are not independent of the environment, but are socially and culturally situated, and constrained or supported by gendered environments, norms and expectations, opportunities, and barriers. Instead of regarding work environment, training design, and trainee characteristics as separate elements impacting training outcomes (Baldwin & Ford, 1988; Burke & Hutchins, 2008; Tonhäuser & Büker, 2016), the trainee characteristics are positioned as embedded in a gendered environment, which allows a reconsideration of a focus on differences between females and males, towards an understanding of how gender is (re)produced in the structure, culture, and processes of knowledge sharing in organisations (Sheerin, Hughes, & Garavan, 2020).

The sex/gender-sensitive model of training suggests that training that positions itself as gender-neutral may in effect be gender blind. It bears the risk of supporting the continuation of sex/gender inequity. In an analysis of the literature on lifelong learning, Rogers (2006) stated that the absence of gender does not constitute value neutrality but 'silent violence', reproducing traditional power (Rogers, 2006, p. 203). A gender-neutral approach to training and training theories may not reflect the reality of sex/gender differences. This will be especially the case when not acknowledging the barriers that females and subordinated masculinities face in a hegemonic masculine, male-leadership-dominated work environment.

7. Impact on future research and practice

Based on the discussion and summary, and to ensure employee training supports and does not hamper sex/gender equity in companies and organisations, the following implications for future research and practice are suggested. First, the impact of sex/gender is not sufficiently reflected in training theories, models, professional training literature, or practice. The sex/gender-sensitive model of training is a first step in carving a more equitable and inclusive direction. Future research should theorise and analyse the role of sex/gender when conducting training research, to ensure the development of sex/gender-sensitive training theories and models. As a result, future research can further develop the sex/gender-sensitive model of training to increase our understanding of the gendered nature of training constructs and the additional constructs that should be added. It will be crucial to include intersectionality in future research, as the question should not only be whether training is equitable and inclusive for women and men but also whether training is inclusive for all women and men, and non-binary people. Future practice should acknowledge that sex/gender plays an important role in training, and should recognise and address this role before, during and after training, for example in needs analysis, training logistics, group composition, and training evaluation, to name a few.

Second, current research supports a binary view on sex and gender, dividing research samples into females and males; the sex/gender of a person is considered a stable, uniform, and determining characteristic—an independent variable. This binary approach fundamentally misrepresents human states and processes (Hyde et al., 2019). The review also recommends recognising the fluidity in sex/gender identities and expressions and exploring the experiences and needs of non-binary and transgender people in relation to the training system, currently not reflected in the reviewed studies.

Third, current research focuses on measuring differences between females and males, while the 'why' or the other facets of sex/gender are sometimes discussed, but not measured. In 60% of the research, sex-category data are not complemented with insights on how descriptive and prescriptive gender roles and expectations impact females and males. Hence, quantitative binary research may lead to false notions of the essential biological differences between females and males, without consideration for the social, cultural, and historic contexts. These differences are not essential but constructed, and hence can be deconstructed. This is aggravated by 35% of the research reviewed as being decontextualised, not measuring how the context may have impacted the differences and similarities between females and males. Another consideration is that self-reported questionnaires may be gendered, with males scoring higher than females (Exley & Kessler, 2019). Hence, different quantitative research methods may be needed to better understand the role of sex/gender in training. Although social category-based research can be helpful and important to show (in)equity, this review urges researchers to move beyond sex-category-based, binary, and decontextualised research and calls for gender research to consider the interrelated facets of gender including but not limited to gendered norms and expectations, beliefs, and values.

Fourth, the 20 qualitative research studies with research participants (not text analysis) provided a contextualised perspective on a wider range of gender facets. It reflected not only on the sex category but also gendered environments and experiences with learning, development, and training. However, only three of these qualitative studies included both females and males. This is a missed opportunity in terms of understanding the perspectives of both females and males (and non-binary employees), reflecting on masculinities and femininities, and identifying excluded training and learning experiences of a wider range of marginalised gender identities.

8. Conclusions

The role of sex/gender in employee training is seldom recognised or addressed in training theory and practice. Based on an extensive literature review, this article argued for sex/gender sensitivity in training theory and practice. The sex/gender-sensitive model of training highlighted that all elements of training, trainee characteristics, the work environment, the training design, and training outcome, are gendered, meaning that being a female, male, or arguably, non-binary training participant, may influence training experiences and outcomes. The core message is that training theory and practice that positions itself as gender-neutral may in fact be gender-blind and may maintain or even strengthen existing sex/gender inequities. Given the significant investments in employee training, and the importance of training for career advancement, ensuring sex/gender sensitivity in training is crucial for organisations to achieve their sex/gender diversity, equity, and inclusion objectives. I hope that this review will increase awareness of the role of sex/gender in employee training and stimulate reflectivity in which training is provided, who has access to these training programmes, whose realities and needs are reflected in the training, and what is the impact of the outcomes of training on sex/gender equity and inclusion.

Authorship contributions

This work is developed by a single author, I.C. Kroese, including but not limited to the conceptualization, methodology, analysis and writing of the manuscript.

Declaration of Competing Interest

None.

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