Radboud University

Master Thesis

The use of e-learning as a valuable technology for the quality of work performance

A qualitative research about the influence of the use of e-learning on the quality of work performance of employees in public organizations

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Preface

Dear reader,

At the beginning of February, I started writing my Master Thesis for my master Organisational Design and Development at the Radboud University. In the past five months, I have been working hard on my Master Thesis and now I am proud to say that I have finished my Master Thesis. After a couple of months, when I started to interview employees, I really enjoyed working on my Master Thesis. I am grateful that I could write my Master Thesis at UWV. This offered me the possibility to speak with interesting employees of UWV and come in contact with employees of the SVB.

I would like to thank the people who supported me during the process of writing my Master Thesis. First of all, I would like to thank my colleagues at UWV who were always willing to help me with my questions and introduced me to people who could help me further with my research. Especially my company supervisor Marga Oostindie, who helped me search for a suitable subject and research question and my company mentor Kim Haekens, who helped me during the whole process of writing my Master Thesis. I am also thankful for the support of my supervisor Dr. M.C. Herkes, who let me think about things I had never considered. Lastly, I would like to thank my second examiner Dr. M. Moorkamp for the useful feedback on my research proposal.

I hope you will enjoy reading my Master Thesis.

Manon Warrink,

Nijmegen, 17th of June, 2019

Abstract

Nowadays, more and more e-learning is used for employee training and development. However, little attention in the scientific literature has been paid to the use of e-learning in work environments and the effect of it on employees' work performance. Therefore, this research gained insights into the influence of the use of e-learning on the quality of work performance of employees in public organizations. Eleven employees of two public organizations were interviewed. The data was collected and five themes that emerged from the data were discussed. These themes are: knowledge provided in e-learning, motivation to use e-learning, influence of the use of e-learning on task performance, job satisfaction and work flexibility. A theoretical e-learning model was developed and showed that information quality and perceived usefulness of e-learning influence the quality of work performance of employees in public organizations. The aspects task performance and adaptability in dynamic work situations could be influenced by the use of e-learning. The aspect well-being could not be influenced by the use of e-learning. The results of this study contribute to the scientific knowledge about the influence of the use of e-learning on the quality of work performance of employees in public organizations.

Key words: use of e-learning, quality of work performance, public organizations, employee training and development

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Chapter 1: Introduction

Background

In the last twenty years, there has been an increase in the use of technology for employee training and development (Brown & Charlier, 2013). Through the developments in telecommunication technologies, a new form of learning emerged, namely e-learning (Aparicio, Bacao, & Oliveira, 2017). E-learning can be defined as making use of technology as a mediating tool for learning through electronic devices which enable users to readily access information online (Mohammadi, 2015, p.362). E-learning makes it possible for learners to choose where and when they will follow the e-learning, so they are not restricted to specific training locations or training dates and times (Brown & Charlier, 2013; Ghirardini, 2011). Technology utilization like e-learning enhances the effectiveness of employee training and the efficiency of achieving the desired learning objectives (Kimiloglu, Ozturan, & Kutlu, 2017). The importance of the use of e-learning for employee training has been widely recognized and accepted by many organizations (Cheng, 2010). It is seen as a tool to help to solve learning and performance problems in organizations (Shyong Ong, Yu Lai, & Shun Wang, 2004).

E-learning systems are often used at universities, schools, government departments and other organizations to provide educational services (Alsabawy, Cater-steel, & Soar, 2016). Most scientific literature about the use of e-learning focuses on school environments (Chiu & Hsiao, 2010; El-Deghaidy & Nouby, 2008; Ozkan & Koseler, 2009; Turvey, 2010). The study of Farid, Ahmad, Niaz and Itmazi (2014) showed that the use of e-learning improves the learning capabilities of students and as a result improves the performance of the students. However, little attention in the literature has been paid to this link between the use of e-learning by employees and their individual job outcomes (Tsai, Shih, & Feng, 2008).

One of the studies that focused on the use of e-learning in work environments, was the research of Stoffregen, Pawlowski and Pirkkalainen (2015). They did research about the barriers of the use of e-learning in the public sector. A contextual barrier framework was developed, which showed more than 40 barriers that were present in the organizational context and the social and technical dimensions. Furthermore, the research of Kimiloglu et al. (2017) examined the attitude of Turkish companies toward the use of e-learning in corporate training. It showed that most companies have a hesitant attitude toward the use of e-learning, but companies who are familiar with the use of e-learning have a more positive attitude toward the use of e-learning than companies who have never used e-learning. Mohammadyari and Singh (2015) also did

research about the use of e-learning in the work environment. They hypothesized that performance expectancy has a positive effect on the intention to continuously use e-learning and this hypothesis was supported. Performance expectancy referred to the extent that individuals believe that continued use of e-learning will enhance their performance (Mohammadyari & Singh, 2015, p. 16). Employees used the e-learning more often when they thought it would lead to improved work performance.

Gap in literature

The use of e-learning for educational purposes has increased in the last decades at schools, public organizations and other organizations (Brown & Charlier, 2013; Alsabawy et al., 2016). Although e-learning systems are used in the work environment, the scientific literature on the use of e-learning focuses mainly on the school environment (Chen, 2010). Therefore, this research will focus on the use of e-learning in the work environment. Furthermore, much scientific literature has focused on the intention of individuals to use e-learning (Alsabawy et al., 2016; Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012; Cheng, 2010; De Melo Pereira, Ramos, Gouvea, & Da Costa, 2015). However, little attention has been paid to the influence of the use of e-learning on the quality of work performance of employees (Tsai et al., 2008). The study of Farid et al. (2014) showed that students who used e-learning improved their academic performance. Thus, it is interesting to investigate what influence the use of e-learning has on the quality of work performance of employees, because there is not much literature available about this subject. Therefore, this research fills this gap in the scientific literature about the influence of the use of e-learning on the quality of work performance of employees. This research will give insights on how the use of e-learning influences the quality of work performance of employees.

Researched organizations

For this research, UWV and the SVB are chosen as organizations to investigate the influence of the use of e-learning on the quality of work performance of the employees. UWV and the SVB use e-learning as a tool to educate their employees, so they obtain the required knowledge to perform their job well. UWV and the SVB are interesting organizations to investigate for this research, because they are public service organizations and operate in a dynamic environment that influences the execution of the work processes. Employees of UWV and the SVB have to execute their job according to the Dutch legislation when they assess the requested social security benefits. UWV and the SVB work for the Ministry of Social Affairs and Employment and have to stick precisely to the assessment procedures to minimize the number of mistakes in

the assessments. However, these procedures can change when some adjustments in legislation are made. UWV and the SVB have to adapt constantly to these changes when it influences the procedures for assessing the requested social security benefits. Besides that, UWV and the SVB have to deal with complicated processes and a great variety of tasks and clients when assessing the requests for a social security benefit. Here fore, the employees need to possess the required knowledge and skills and keep these up to date. Therefore, UWV and the SVB are interesting organizations to investigate how the use of e-learning influences the quality of work performance of employees.

Research objective and research question

The aim of this research is to contribute to the knowledge about how the use of e-learning influences the quality of work performance of employees by gaining insights into the influence of the use of e-learning on the quality of work performance of employees in public organizations.

The research question is as follows:

How does the use of e-learning influence the quality of work performance of employees in public organizations?

The sub-questions give an answer to the research question and are:

- *How is e-learning used by employees in public organizations?*
- *Which aspects of the quality of work performance can be influenced by the use of e-learning?*

Academic and social contribution

This research contributes to the scientific knowledge about the influence of the use of e-learning on the quality of work performance, because it gives insights on how the use of e-learning influences the quality of work performance of employees in public organizations. In the existing scientific literature little attention has been paid to the influence of the use of e-learning on the quality of work performance of employees (Tsai et al., 2008). Even though, much scientific literature is available about the intention of individuals to use e-learning, little literature is available about the influence of the use of e-learning on the quality of work performance of employees (Alsabawy et al., 2016; Bhuasiri et al., 2012; Cheng, 2010; De Melo Pereira et al., 2015). Therefore, the insights of this research contribute to the scientific knowledge about the

influence of the use of e-learning on the quality of work performance of employees in public organizations.

Besides the academic contribution of this research, it also brings a contribution to society. This research offers insights for public organizations on how the use of e-learning influences the quality of work performance of their employees. Public organizations can use these insights to take a close look at the use of e-learning in their organization and analyze how these influences of the use of e-learning on the quality of work performance can be used to have a high quality of work performance in the organization.

Especially for UWV and the SVB, it is useful to know how the use of e-learning influences the quality of work performance of their employees. UWV and the SVB employees need to possess the required knowledge and skills to perform their job and keep these up to date. Here fore, it is important to know how the use of e-learning influences the quality of work performance of employees, so that these influences can be taken into account to obtain a high quality of work performance.

Structure

In the next chapter, the theoretical concepts are outlined and the theoretical framework for this research is introduced. In chapter three, the methodology of this research is discussed. The choices for the research method, data collection, data analysis and research ethics are explained. Chapter four describes the results of this research and answers the sub-questions of this research. The last chapter shows the conclusions of this research that answer the research question and mentions in the discussion the implications and limitations of this research.

Chapter 2: Theoretical background

In this chapter, the theoretical concepts of the use of e-learning and the quality of work performance are discussed. First, the definitions of the use of e-learning are presented and afterwards the definitions of quality of work performance. Furthermore, the different perspectives about the use of e-learning and the quality of work performance are discussed. Lastly, a proposed e-learning model is introduced. This proposed e-learning model is developed to investigate the relation between the use of e-learning and the quality of work performance of employees in public organizations.

Use of e-learning

The use of e-learning is a particularly important socio-technical phenomenon. The use of e-learning is perceived more like a pervasive activity of technology-mediated learning than as a learning management system (Arafat, Aljohani, Abbasi, Hussain, & Lytras, 2019). E-learning ties learning and technology together. Learning concerns the cognitive process for achieving knowledge and technology is the tool that enables this learning process (Aparicio, Bacao, & Oliveira, 2016). E-learning can be defined as learning through the internet that makes information available to users overcoming time restrictions and geographical issues. E-learning concepts are explained with a technological and functional focus (Aparicio et al., 2016; Chen Sun, Tsai, Finger, Yang Chen, & Yeh, 2008, p. 1184).

Sangrà, Vlachopoulos and Cabrera (2012) did a literature review on the definitions of e-learning. They categorized the different definitions of e-learning in four categories: 1) technology-driven, 2) delivery-system-oriented, 3) communication-oriented, and 4) educational-paradigm oriented. Technology-driven definitions of e-learning focus on the technological aspects of e-learning and portray e-learning as a technological tool for learning. A technology-driven definition of e-learning is: "E-learning is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters" (Sangrà et al., 2012, p. 148). The delivery-system-oriented definition of e-learning presents e-learning as a means of accessing knowledge. The focus is on the accessibility of resources and not on the results of e-learning. An example of such a definition is: "E-learning is an online education defined as the self-paced or real-time delivery of training and education over the internet to an end-user device" (Sangrà et al., 2012, p. 149). The communication oriented definitions of e-learning consider e-learning to be a communication, interaction, or collaboration tool. An example of

this definition is: "E-learning is defined as learning facilitated by the use of digital tools and content that involves some form of interactivity, which may include online interaction between the learner and their teacher or peers" (Sangrà et al., 2012, p. 149). The last category is the educational paradigm oriented definition of e-learning. This category defines e-learning as a new way of learning or as an improvement of an existing educational paradigm. A definition of this category is: "E-learning is the use of new multimedia technologies and the internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration" (Sangrà et al., 2012, p. 149). The definition of e-learning that is used for this research, is a combination of the definition of Aparicio et al. (2016) and the technology-driven and educational paradigm definition of Sangrà et al. (2012). This combination for the operational definition of the use of e-learning is chosen, because it fits best with a socio-technical definition of e-learning. These definitions cover the technical and social aspects of e-learning. The operational definition of the use of e-learning for this research is:

> The use of e-learning is the use of new multimedia technologies for a variety of learning purposes to improve the quality of learning by facilitating access to resources and services that makes information available to users overcoming time restrictions and geographical issues.

Mohammadi (2015) integrated the information systems (IS) success model of DeLone and McLean and the technology acceptance model (TAM) into a new model to investigate the use of e-learning systems by the users. The willingness of users to use an e-learning system is an important indicator of the success of an e-learning system. Mohammadi (2015) examined the effects of six quality features of e-learning on students' satisfaction and intention towards the use of e-learning. These quality effects are educational quality, service quality, technical system quality, information quality, perceived ease of use and perceived usefulness on students' satisfaction and intentions towards the use of e-learning. Educational quality is the extent to which an information system provides a conducive learning environment for learners for collaborative learning (Hassanzadeh, Kanaani, & Elahi, 2012; Mohammadi, 2015). Service quality concerns the quality of the support that users receive from the information system such as training and helpdesk (Petter & Mclean, 2009; Wang & Wang, 2009). Technical system quality refers to the technical success, accuracy and efficiency of the communication system that produces information (Mohammadi, 2015). Information quality measures the quality of the information that the system generates and its usefulness for the user (Petter & Mclean, 2009). Perceived ease of use is defined as the degree to which a person believes that using a particular

system would be free of effort. The last variable is perceived usefulness and is the belief of the user that a particular system would enhance job performance (Mohammadi, 2015). Almost all quality features of e-learning had a positive effect on users' satisfaction and users' intention to use e-learning. Only the quality features educational quality and ease of use did not have a positive effect on the intention to use e-learning. The unsupported positive effect of educational quality on the intention to use e-learning could be explained by the obligatory aspect of using e-learning at schools. The effect of ease of use on the intention to use e-learning was also not supported, but did have an indirect positive effect on the use of e-learning. This effect was mediated by the perceived usefulness of the e-learning by the users (Mohammadi, 2015). For this research, it is interesting to investigate how these quality features of e-learning also have an influence on the use of e-learning by employees in public organizations.

Rockinson-Szapkiw, Courduff, Carter and Bennett (2013) used Bloom's taxonomy to measure the efficacy of traditional print and electronic textbooks for students. Bloom's taxonomy consists of three dimensions: cognitive, affective and psychomotor learning. The results showed that there was no difference in cognitive learning for printed books and e-books, but there was a difference in the affective and psychomotor learning. The affective and psychomotor dimensions of learning consist not only of knowledge about a topic but also the feelings and attitudes about that topic and the tendency to behaviorally engage in the topic related experiences (Rockinson-Szapkiw et al., 2013). Wang and Hwang (2012) also made use of Bloom's taxonomy to assess students' cognitive ideas during online discussions. The discussion content was posted by students on the networked system and was analyzed with Bloom's taxonomy. Bloom's taxonomy consists of six cognitive levels, ranking from: (a) knowledge, the recall of previous learned information, (b) comprehension, the understanding of the meaning of a concept, (c) application, the ability to use learned knowledge in a new situation or context, (d) analysis, the ability to classify concepts into component parts and to make analysis, (e) synthesis, the ability to integrate ideas into a product or new concept and (f) evaluation, the ability to judge the value of material or knowledge on a basis of specific standards (Wang & Hwang, 2012, p. 683). Data showed that the students generated ideas only at the levels of knowledge, comprehension and application when they developed an income tax estimating system (Wang & Hwang, 2012). The knowledge dimension can be further divided into four general types of knowledge that learners are expected to acquire: (a) factual knowledge, basic elements that needs to be known, (b) conceptual knowledge, interrelationships among basic elements, (c) procedural knowledge, know-how, skills, techniques, and methods and (d)

metacognitive knowledge, knowledge of one's own cognition (Lau et al., 2018, p. 12). The developed e-learning framework of Lau et al. (2018) incorporates different stages of learning and usage of learning resources based on Bloom's taxonomy. Learning in different stages can be more effective with the support of appropriate learning resources. Low-order learning needs resources that facilitate remembering and understanding of factual knowledge. Higher-order learning needs resources that facilitate analysis and evaluation which are necessary to help users acquire conceptual and procedural knowledge (Lau et al., 2018). For this research, it is interesting to investigate which cognitive levels are used with e-learning and which resources are used in e-learning for employees in public organizations.

Quality of work performance

Individual work performance is a much discussed topic in the scientific literature. Many scholars from different disciplines did research about the quality of work performance (Koopmans et al., 2011). Viswesvaran and Ones (2000, p. 216) defined work performance as "scalable actions, behavior and outcomes that employees engage in or bring about that are linked with and contribute to organizational goals". Hameed and Waheed (2011, p. 228) named it employee performance and defined it as: "the productivity and output of an employee as a result of employee development". Another definition of work performance found in the literature is: "the total expected value to the organization of the discrete behavioral episodes that an individual carries out over a standard period of time" (Choudhary, Naqshbandi, Philip, & Kumar, 2017, p. 1088). The operational definition of the quality of work performance in this research is a combined definition from the above-mentioned definitions, and is as follows:

> Quality of work performance is the extent to which actions, behavior and produced outcomes of employees as a result of employee development help to achieve the organizational goals.

Several studies have shown that work engagement can improve the quality of work performance. Work engagement is suggested to be beneficial for both the individual and the organization because it influences how individuals do their job and fulfill their work tasks. Engaged workers perform better than non-engaged workers, because they often experience more positive emotions and are more open to exploring new information (Bakker, Demerouti, & Ten Brummelhuis, 2012). Furthermore, employee well-being has a positive effect on work performance. Employee well-being refers to employees' subjective experiences at work such as job satisfaction and positive or negative work-related influences. It is also concerned with

the physiological and psychological aspects of employee health at work. For example, job-related anxiety, stress, burnout and exhaustion. Employees who are satisfied with their job because of the positive treatment of the organization, are more committed to the organization, are willing to work hard for the organization and put more effort into their job (Paauwe, Guest, & Wright, 2012).

Additionally, high performance work systems (HPWS) can help to improve the quality of work performance of employees. HPWS are a set of human resource practices and work design practices that can be combined to produce synergistic benefits. These aligned practices can impact employees' performance through improving their ability, motivation and opportunity to perform. Some examples of these practices are: (a) sophisticated selection and training; (b) behavior based appraisal; (c) contingent pay; (d) job security; and (e) employee involvement. These practices aim to motivate human resources to fulfill the organizational goals through creating a fit between the knowledge, skills and capabilities of the employees and the tasks and responsibilities that are required for the job (García, Cortés, Lajara, Sáez & Lillo, 2018).

HPWS should not only be used for the achievement of favorable performances in the present-day context but also for preparing for the challenges the organization might face in new contexts. Therefore, organizations need human resource flexibility, which is the adaptability of organizations to environmental contingency changes (Camps, Oltra, Manzano, Vera, & Carballo, 2016). Human resource flexibility consists of three dimensions: behavioral flexibility, skill flexibility and HR practices flexibility. Behavioral flexibility is the adaptability of the behavior of the employee to respond to changing circumstances (Bhattacharya, Gibson, & Doty, 2005). Skill flexibility is the ability of the employee to work on different tasks under different circumstances and to learn in a short time the skills which are required for performing new functions (Perez-De la Lastra, Alcazar & Gardey, 2014). HR practices flexibility refers to the degree and the speed that these practices can be adapted and applied in different situations (Martín, Puig, Tena, & Llusar, 2008).

Koopmans et al. (2011) constructed a heuristic framework of individual work performance by integrating all existing frameworks of individual work performance. This framework consists of four dimensions which are: task performance, contextual performance, adaptive performance and counterproductive work behavior. Task performance concerns the proficiency at which an employee performs central job tasks. This includes the work quantity, work quality and job knowledge (Koopmans et al., 2011). There are five dimensions of task performance: job-

specific task proficiency, non-job-specific task proficiency, written and oral communication proficiency, supervision and management/administration (Sonnentag & Frese, 2005). Not only task performance is an important aspect of work performance, so is contextual performance (Koopmans et al., 2011). Contextual performance refers to activities that are not task or goal specific, but make individuals and the organization more effective and successful. Such activities are cooperating and helping others, voluntarily performing extra-role activities, persevering with enthusiasm and extra determination to complete assignments successfully, defending the organization's goals, and adhering to organizational policies (Reilly & Aronson, 2014, p. 1). The third dimension is adaptive performance. Adaptive performance refers to the individual's ability to adapt to dynamic work situations (Charbonnier-Voirin & Roussel, 2012). There are eight dimensions of adaptive performance. These dimensions are: dealing with uncertain work situations, handling emergencies or crisis situations, solving problems creatively, handling work stress, learning new tasks, technologies and procedures, demonstrating interpersonal adaptability, demonstrating cultural adaptability and demonstrating physically oriented adaptability (Charbonnier-Voirin & Roussel, 2012, p 281). The last dimension is counterproductive work behavior. This means that someone acts consciously against the interests of the organization. This behavior is harmful to the organization, because it affects its functioning and it hurts other employees which reduces their effectiveness. Examples of counterproductive behavior are absenteeism, being late for work, engaging in off-task behavior, playing cruel pranks, bullying or swearing at colleagues, falsifying expense reports, sabotaging others' work or even theft (Koopmans et al., 2011; Chang & Smithikrai, 2010, p.1273). The dimensions of the heuristic framework of individual work performance from Koopmans et al. (2011) can be used in this research to investigate the quality of work performance of employees in public organizations.

Relation between the use of e-learning and the quality of work performance

Organizational learning improves future firm performance, because learning helps to develop the knowledge and skills that employees need to perform their job. This leads to an increase in firm performance. Therefore, training programs are implemented in organizations to improve the knowledge and skills of employees. Training programs give employees the freedom to choose when they will study and in which sequence they will study the content (Greco, Charlier, & Brown, 2019). E-learning is one of these materials that offers this possibility to learners. The use of e-learning makes it possible for learners to choose where and when they will follow the e-learning, so they are not restricted to specific training locations or training dates and times

(Brown & Charlier, 2013; Ghirardini, 2011). The use of e-learning also enhances the effectiveness of employee training and the achievement of the desired learning objectives (Kimiloglu et al., 2017). Therefore, it is interesting to investigate the influence of the use of e-learning on the quality of work performance of employees in public organizations.

Many theoretical models about the use of e-learning take a pedagogical or design perspective to investigate the use of e-learning (Blondy, 2007; Hassanzadeh et al., 2012; Lau et al., 2018; Nikolić et al., 2018). The proposed e-learning model in this research uses a socio-technical perspective to investigate the relation between the use of e-learning and the quality of work performance of employees in public organizations. The socio-technical approach is known for its focus on the technical and human aspects in the context of the organization (Craig & Kodate, 2018). In this study, this approach is useful, because this study investigates how the use of e-learning, a technical aspect of an organization, influences the quality of work performance of employees, which is a human aspect of an organization. Figure 1 presents the proposed model to investigate the relation between the use of e-learning and the quality of work performance of employees in public organizations.

The proposed e-learning model consists of two dimensions of the use of e-learning and three dimensions of the quality of work performance. The dimensions of the use of e-learning are derived from the theoretical model of Mohammadi (2015). Only the dimensions that are useful to investigate the use of e-learning, are included in the proposed e-learning model. These two dimensions are: information quality and perceived usefulness. Information quality measures the quality of the information that the system generates and its usefulness for the user (Petter & Mclean, 2009). Perceived usefulness is the belief of the user that a particular system would enhance job performance (Mohammadi, 2015). The dimensions of the quality of work performance are derived from the discussed literature and the heuristic framework of individual work performance of Koopmans et al (2011). The dimensions which are most applicable in the context of this research, are investigated. These three dimensions are: well-being, task performance and adaptability in dynamic work situations. Well-being is about the job satisfaction, stress and absenteeism of employees (Paauwe et al., 2012). Task performance refers to employees' work quality, work quantity with regard to deadlines and their job knowledge (Koopmans et al., 2011). Adaptability in dynamic work situations concerns the adaptability in work processes, executing varying tasks, handling different customers and their situations and being able to adapt to changes in legislation which influence the work processes (Charbonnier-Voirin & Roussel, 2012). These dimensions are used to investigate the relation

between the use of e-learning and the quality of work performance of employees in public organizations. The proposed e-learning model is presented below in figure 1.
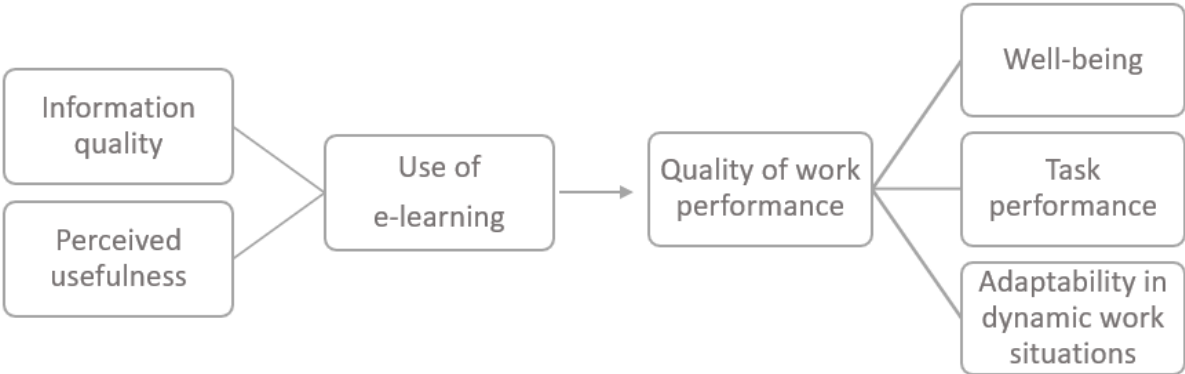

Figure 1: Proposed e-learning model

Chapter 3: Methodology

In this chapter, the choices for the research design are explained. Furthermore, it is explained how the data is collected and how this data is analyzed. Lastly, the research ethics are discussed.

Research design

The aim of this study is to investigate how the use of e-learning influences the quality of work performance of employees in public organizations. Therefore qualitative research is appropriate, because it helps to interpret and better understand the complex reality of a situation that is experienced by someone. It provides rich descriptions of how people experience a certain situation (Rahman, 2016). The experiences of employees in public organizations about the use of e-learning and the quality of their work performance, offers insight into the relation between the use of e-learning and the quality of work performance. This research is an explorative research, which means that this research seeks to find new insights into a phenomenon (Palic, Vignali, Hallier, Stanton, & Radder, 2015). Little is known about the relation between the use of e-learning and the quality of work performance of employees in public organizations and this research offers new insights into this phenomenon (Tsai et al., 2008).

A multiple case study is chosen as research method for this research. A case study is an appropriate research method, when the research wants to explain a contemporary social phenomenon in-depth (Yin, 2018). This is the case with this research, which wants to explain the relation between the use of e-learning and the quality of work performance of employees in public organizations. A multiple case study is chosen, because it offers more insights into the phenomenon in different settings. This leads to a higher transferability of the results to other public organizations (Polit & Beck, 2010). Therefore, the social phenomenon is investigated in-depth by interviewing employees of two public organizations and by comparing and analyzing the results from the interviews. Furthermore, this research is carried out inductively, because the aim of this research is to explain the relation between the use of e-learning and the quality of work performance of employees in public organizations by interviewing employees about their experiences with the use of e-learning and the quality of work performance. Therefore, inductive research is useful, because this is the process by which the collected data is understood through the identification of themes and patterns which are used to formulate a theory or conceptual framework (Bilau, Witt, & Lill, 2018). From the data of the participants, a conceptual framework is developed which shows the relation between the use of e-learning and the quality of work performance of employees in public organizations.

Data collection

An interview is an appropriate method to gain detailed information about a person's thoughts and behavior or for exploring a specific subject in-depth (Boyce & Neale, 2006). In this study, interviews are a useful tool to get information about how the employees of UWV and the SVB experience the use of e-learning and the quality of their work performance. The interviews are semi-structured. The advantage of semi-structured interviews is that there is a prior structure of the interview with specific topics and questions which are related to the phenomenon under study, but at the same time it is possible to deviate from this interview structure to give some space to the participant to offer new meanings to the phenomena (Galletta, 2013). It gives the interviewer the possibility to ask further questions about interesting topics that the participant mentions or when something is unclear.

At UWV, six labor experts and one developer participated in this research and at the SVB three AIO employees and one developer as is shown in table 1. Labor experts from different offices who finished the e-learning in the past six months were interviewed. There might be some differences between the offices, so labor experts from different offices were interviewed. The labor experts who just finished the e-learning are most useful for this research, because they still remember how the e-learning looks like and have just learned the content of the e-learning about how they have to perform their work. The e-learning of the SVB was published in the last week of April, so the employees who followed this e-learning, also finished it recently. It is also relevant to interview the developers of the content of the e-learning. They can give their opinion on how they think that the use of e-learning influences the work performance of the employees. The results of UWV and the SVB can be compared with each other and this will lead to a higher transferability of the results to other public organizations (Polit & Beck, 2010).

Table 1: Data collection: interviews and documents

UWV	Participant	Function	Office
Interview	Participant 1	Developer	A
Interview	Participant 2	Labor expert	B
Interview	Participant 3	Labor expert	C
Interview	Participant 4	Labor expert	D
Interview	Participant 5	Labor expert	E
Interview	Participant 6	Labor expert	F
Interview	Participant 7	Labor expert	F

SVB	Participant	Function	Office
Document		Work guide Poortwachter	
Document		E-learning RIV	
SVB	**Participant**	**Function**	**Office**
Interview	Participant 8	Developer	G
Interview	Participant 9	AIO employee	H
Interview	Participant 10	AIO employee	I
Interview	Participant 11	AIO employee	I
Document		AIO application conditions	
Document		E-learning AIO	

Before the interviews, the documents work guide Poortwachter and the AIO application conditions were studied. The RIV and AIO e-learning were also studied and clicked through to have an idea of how it looked like and what the steps are to assess the RIV and AIO. In short, RIV stands for reintegration report and the employer hands this over to UWV. The labor expert assesses if there have been sufficient reintegration efforts by the employer and employee to get the employee back to work (UWV, 2018). AIO stands for supplementary income provision elderly. The AIO employee assesses if the income of the elderly is below the minimum income. If this is the case, this shortage is supplemented with AIO ("Wanneer krijgt u een AIO-aanvulling?", z.d.).

For this research, the labor experts who registered themselves for the RIV e-learning, were mailed to ask if they liked to participate in this research and were told that they would be contacted by telephone to discuss it further. Several labor experts were called and the appointments with the labor experts were made. The interviews with all employees were held at their offices. The names of the developers were provided by employees of the Education and Development Department at UWV and the SVB. They were approached the same way. At the SVB, a message was placed on the AIO e-learning forum and a few employees mailed that they liked to participate in this research. Some of the semi-structured interview questions are shown in table 2. The complete interview guides of the employees and the developers can be found in Appendix 1 and 2.

Table 2: Interview guide

Question	Interview guide
Topic	**E-learning**
1.	How much time does it take to finish the e-learning?
2.	What is your opinion about the quality of the information in the e-learning?
3.	What sort of knowledge did you gain from the e-learning? *Factual, conceptual, procedural or cognitive knowledge*
4.	To what extent do you think that e-learning is useful to enhance your work performance?
5.	Which parts in the e-learning do you find most important?
6.	How does your ideal e-learning look like?
Topic	**Work performance**
7.	Which job tasks can be learned by the use of e-learning?
8.	To what extent can e-learning be used to guarantee a high quality of the execution of the job tasks?
9.	How can e-learning be used to help you to perform difficult tasks?
10.	How can e-learning be used to prepare you for changes in legislation?
11.	How can e-learning be used to meet your deadlines?
12.	To what extent can e-learning be used to deal with stress?

Data analysis

The interviews were all recorded and transcribed and the findings from the interviews were analyzed. The comparisons and differences in answers of the participants on particular topics were interesting to analyze. To analyze the data, the data was coded using the Grounded Theory which has the goal to build an inductive model that is grounded in the data. It shows the dynamic relationship between the concepts that describe and explain the phenomenon that makes the data to theory connections visible (Gioia, Corley & Hamilton, 2013). Grounded Theory is a useful method to investigate rarely explored phenomena. The data generates novel insights and explains the phenomenon under study (Symon & Cassell, 2012). The first phase to code the data, is open coding. The collected data is analytically broken down in conceptual labels. Events, actions or interactions from the data are investigated to see if there are some similarities and differences. Then, with axial coding, the subcategories that are related to each other, are

put together in new categories. Lastly, selective coding is used to unify the categories around a central core category. This category represents the central phenomenon of the study (Corbin & Strauss, 1990).

Research ethics

It is important to carefully handle the information the participants provided for this research. Therefore, the records have to be saved at a place where unauthorized people don't have access to (Yuko & Fisher, 2015). Furthermore, the interviews have to be anonymized so that the participants feel free to speak their mind and formulate their opinions. This will significantly decrease the chance of interviewees providing socially desirable answers during the research. Equal opportunity to participate in this research is also important in conducting ethical research. Employees should not be excluded from this research because of their age, gender, nationality or religion (Williams & Anderson, 2018). The emails were randomly sent, so all employees had the chance to participate in this research. Another important aspect is that the participants know what the subject of the study is, wherefore they collaborate and how their information will be used. The participants should be provided with all information that is necessary to make an informed choice to participate in the research (Yuko & Fisher, 2015). In the emails that were sent to the potential participants, information was provided about the subject of the study, how the results will be used and how confidentiality of their answers will be guaranteed. Participants have to be informed that they are allowed to withdraw from the research at any time and should be told about their rights to do so (Mallia, 2018). This was also mentioned in the email and before the start of the interview. After the interviews were held, the transcripts were sent to the participants for a member check. This offered the participants the chance to check if the data was interpreted correctly and that the participants' views were accurately captured by the researcher (Symon & Cassell, 2012).

Chapter 4: Results

In this chapter, the results are presented. The results answer the two sub-questions of this research. The collected data from UWV and the SVB are analyzed to identify patterns and themes that are used to develop the theoretical e-learning model.

How is e-learning used by employees in public organizations?

First, this sub-question discusses the similarities and dissimilarities between the e-learning of UWV and the SVB. Subsequently, the themes that emerged from the data are used to analyze the similarities and differences between the participants. The two themes that are discussed are the knowledge provided in e-learning and the motivation to use e-learning.

The use of e-learning at UWV and the SVB

UWV and the SVB both use e-learning in combination with a practical session. The e-learning has to be finished before the employees attend the practical session. At UWV, the practical session takes the whole day and at the SVB just two hours to discuss some cases. At UWV, the e-learning and training day are compulsory for employees who are following the educational program to become a labor expert at UWV. Employees who are already employees at UWV and want to keep their knowledge up to date, can make the e-learning and follow the training day voluntarily. When they sign up for the course, they gain points to keep their registration as a labor expert. At the SVB, it is not obligated for employees to register for the e-learning and practical session. They can sign up for every e-learning they are interested in. At UWV, the e-learning is offered to gain the basic knowledge to be sufficiently prepared for the training day. On the other hand at the SVB, the e-learning plays the most important role and the practical session just complements the e-learning. Another difference is that the e-learning of the SVB is developed on the initiative of the employees. They talked with each other about the difficult parts in their job and liked to have an e-learning about these difficult subjects. With the input of the employees, the AIO e-learning was developed. At UWV, the teachers who give the training days to the labor experts, choose the information that should be included in the e-learning and not the employees. Furthermore, the e-learning of UWV has a sequence in which the topics are discussed and this sequence has to be followed by the user. However, the e-learning of the SVB has more freedom in choosing which parts of the e-learning the employees want to do first. It is possible to start with the theoretical questions and read the theory afterwards instead of reading the theory first and then making the questions to test their knowledge. That is all up to the user of the e-learning.

Knowledge provided in e-learning

The first theme that is discussed, is the knowledge that is provided in the e-learning. The opinions about the quality of the information in the e-learning differs. Most participants thought that the quality of the information was correct, but a few participants of UWV sometimes doubted if the information they read was correct. The following quote illustrates this:

> That something with respect to the content, that this and that was claimed, but that we still doubted if that was right and then you get confused and before you start doubting yourself, then I also would say, I stop with it, because what I know now, is correct and then I will be put on the wrong track (UWV, participant 6).

Many employees already had some basic knowledge about the subject, so they could be critical on what they read in the e-learning. One participant mentioned that the e-learning was a bit outdated and that the information in the e-learning was not up to date anymore.

The employees of the SVB were satisfied with the quality of the information. The main reason for this was that the employees of the workplace were involved. A try-out was organized to give experts and users the opportunity to give feedback on the e-learning about parts that were unclear or should be presented in another way. The employees found it important that there were no weird exceptions presented in the e-learning and that it was focused on situations that often occurred. This feedback was used to improve the e-learning before it was published.

Furthermore, the participants of UWV mentioned that the information was to the point, which was sufficient, but the question behind the question was missing and more in-depth information would be appreciated by some participants. This is explained in the next quote:

> I sometimes find it too concise. I understand that you do not write a whole story about what it is and how it works, but for some aspects, I think four of five sentences is not enough. It may also be that I need to have that information to master it, but sometimes I have the idea that more could be explained and that the theory could be discussed in more detail (UWV, participant 7).

A few participants of UWV liked to know more about the subject and wanted to have more in-depth information in the e-learning. Another participant agreed that the information was not very extensive, but it included everything that was needed. Many participants did not mind that the information was not very detailed and thought that the training day was a good way to discuss the information in more detail and to put the knowledge into practice.

On the other hand, at the SVB, the e-learning contained too much detailed information, which was not necessary for everyone to know. Later on, when the employees provided feedback on the e-learning, the developers removed some information from the e-learning. One of the employees said this about it:

> They had put everything together in one e-learning. For example, people who own a house, that requires very specialized knowledge and these specific cases are assessed only by a little group of employees. They had put the part about owned houses in the e-learning, but not everyone assesses this sort of cases. So someone who did not assess these cases, reads these questions and thinks what are they talking about (SVB, participant 9).

One participant of the SVB liked to have much detailed information in the e-learning and have many examples of different situations which are not very common. On the other hand, another participant thought that the information was too much.

From the knowledge that was provided in the e-learning, most participants who used the e-learning gained factual and procedural knowledge. Little was learned about how the knowledge can be put into practice. This was discussed during the practical session. A participant said the following:

> I think that the factual knowledge in the e-learning is very important. We cannot come up with anything, we must proceed from the facts, so that is always important. And also procedural knowledge in the e-learning, how to do something. This is really just a protocol that you follow which is explained in the e-learning, so that is very procedural (UWV, participant 3).

This participant mentioned that mainly factual and procedural knowledge were present in the e-learning and were gained from the e-learning. The practice is more difficult to learn with e-learning, but the process steps can be learned by e-learning. The e-learning of the SVB gave some direction how to assess the AIO applications and how to interpret the rules for the assessments. One of the participants found that it is very important to put the knowledge that is learned from the e-learning into practice. If the employees do not immediately practice what they have learned, they forget it and they do not benefit from the gained knowledge. To remember the knowledge that is gained from the e-learning, employees should not wait too long before they put their knowledge into practice.

The e-learning is not used often as a reference book by the participants of UWV. Just a few participants used the e-learning as a reference book. One of the participants never looked back at what the e-learning looked like and thought that using the e-learning was a one-off thing.

Another participant mentioned that the reason for not using the e-learning as a reference book, was because it is not easy to use. First, employees have to log in and then they have to search for the information in the e-learning. A printed version is easier to use as a reference book, because the employees can write down some notes. Furthermore, the e-learning does not provide a useful summary with the procedural steps, which can be used for the assessments. At the SVB, in contrast to UWV, the whole e-learning can be printed with all exercises and employees often make use of the e-learning as a reference book. One of the participants explained how the e-learning is used as a reference book:

> If it is really about complex processes or work types, then I will look back at the e-learning again, because some cases with specific situations do not occur daily. In the e-learning were quite some complicated examples, so you can put it next to your work and look how they did it and how it worked exactly, because things like that are not really well explained in Paradocs, so then you use the e-learning as a sort of reference book (SVB, participant 10).

Almost all participants at the SVB mentioned that the e-learning was useful as a reference book, because of the exercises and the explanation it included. The employees printed it and wrote down some notes.

Motivation to use e-learning

The second discussed theme that emerged from the data, is the motivation of employees to use e-learning. The most important motivation to make the e-learning, was to be prepared for the training day. The participants of the SVB spent approximately eight hours on the e-learning, which was longer than the estimated time for the e-learning which was three to five hours. The reason for this was that they had to look up some information that was open to different interpretations and they had to find out what was meant by it to understand it well. That takes a lot of time and also the exercises with many calculations took a lot of time. The participants of UWV finished the e-learning in three to four hours and did not want to spend more time on e-learning, but that also depended on the knowledge and experience they already had and the subject of the e-learning. One participant of UWV finished the e-learning in one hour and read it globally, because the participant had enough knowledge about the subject and had many years of experience. This quote illustrates it:

> I don't think beforehand an hour is enough, it depends on what comes at me, but yes, most of what was in it, I already knew that, sometimes just the tightening, and what I take most to me and what takes the most time, is the case that is described. It is not in advance that I say, it must

Another participant of UWV finished it in two hours, but had to read the e-learning again after the training day, because the participant still had some questions of which the answers could be found in the e-learning. Because of the difference in prior knowledge about the subject, some employees needed more time to complete the e-learning than others and could read it through faster.

There was also a difference between the participants how they made the e-learning. Some participants just studied the information briefly and other participants studied it more extensively and also made the intermediate exercises and the cases that took a lot of time. One of the participants mentioned the following:

> I knew most of it, so I was able to get through it faster. I especially found the intermediate tests useful to make. I have not always done the larger assignments. I think that the larger exercises are not really manageable. They should be finished within an hour (UWV, participant 3).

For some employees time played a role to not make certain exercises that took too long. The intermediate exercises were made by almost all employees, but the larger assignments often not. The larger assignments should be discussed during the training day, but that was not always the case. Employees who did make the case assignments which were not discussed, demotivated them to make the case assignments next time, because it took much time to make it and afterwards they did not know if they made it correctly. At the SVB, the employees got the explanation of the exercises, so they could see which questions they answered incorrectly and what the right explanation was. Some employees made all tests of the e-learning, but others not, because it took too much time.

Furthermore, the concentration of the employees of UWV and the SVB has influence on the time that employees spend on e-learning. The e-learning should not take too long, because after a couple of hours, the focus becomes less to make the e-learning. Reading from a computer screen for longer than two hours was perceived as intensive and too long by the participants. Then they lost their concentration and started to wonder where they left off. A few participants did not finish the e-learning at once, but divided the parts of the e-learning over a couple of days. They started with the e-learning for a few hours and continued with it the next day to finish the e-learning. One of the participants mentioned that it is pleasant to have some variety

in their work. People get tired of it when they have to look at a computer screen for more than two hours to read some texts and make some exercises.

The main reasons for employees to make the e-learning, was to prepare them for the training day and to keep their knowledge up to date. Employees updated their knowledge with the e-learning. Some participants of UWV and the SVB told that it was useful to get on the same level with colleagues in terms of their knowledge, so the differences in performing the tasks are as little as possible. The developer of UWV mentioned that e-learning is useful because it gives everyone the same fundamental knowledge, so everyone starts at the same point. It is teacher independent. Everyone learns the same knowledge and there are no differences in interpretation or explanation of the information. E-learning makes sure that everyone has the same basic knowledge and that is useful in educating employees according to the developer.

Furthermore, employees told that e-learning is useful to test their knowledge and to know which information they do not possess sufficiently. They can check with some tests which subjects they should read again to gain the information. An example is given by the following participant:

> There is also a test in the e-learning and that starts with theoretical questions. At the end of the test that consisted of thirty questions, you can see the number of mistakes. If you have twenty of the thirty questions answered incorrectly, then the e-learning shows on which subjects you do not score well. So in the e-learning there is always a theoretical part with a number of questions about the subject and at the end you see which questions you answered wrong. Then you get an explanation of what it should have been and why it should be that way (SVB, participant 9).

The tests are present in both the e-learning of UWV and the SVB. Employees perceived it as useful to test their knowledge with some exercises to know if their knowledge is sufficient and up to date. The difference between the e-learning of UWV and the SVB is that the e-learning of UWV does not tell where the information could be found if someone answers many questions about a specific topic incorrectly. It would be more useful if this is included in the e-learning. Employees would more often read the text again if they do not have to search for the information, but know exactly where they can find the information.

Many participants thought that the e-learning was useful to prepare them for the training day. They gained the knowledge they needed for the training day and deepened their knowledge on certain topics they did not have much knowledge about. It is also a handy tool to test what you

already know and which questions you still have, which can be answered during the training day. The participants thought that they learned most when they were well prepared for the training day. It gives them the chance to put the knowledge into practice and without the knowledge it is not possible to apply it in practice. The combination of the e-learning and the training day was valuable for many participants. One of the participants said this about the usefulness of e-learning:

> I see the usefulness of e-learning, but in combination with a training day and that has to do with the fact that the e-learning itself remains fairly dry and factual material, because it is not very practical. Without that training day it remains a theoretical matter and it comes to life when I spend a whole day working on it and when I can also test it more in practice (UWV, participant 7).

E-learning is useful to gain the factual knowledge which can be applied in practice during the training day. The training day offers the practical value and insights of the knowledge that was learned from the e-learning.

Overview

The first sub-question: *How is e-learning used by employees in public organizations?* is answered with the themes that emerged from the data. Two themes were identified. The first theme was the knowledge that was provided in the e-learning and the second theme was the motivation to use the e-learning. The e-learning is not considered as a stand-alone and is used in combination with a practical session. The structure of the e-learning at UWV is very structured, but at the SVB, the employees can choose in which sequence they like to make the different parts of the e-learning. Furthermore, the e-learning of UWV was developed by the teachers and at the SVB, the e-learning was developed on the initiative of the employees and they were involved in the development process of the e-learning.

The quality of the information that was provided in the e-learning was found to be correct by most participants. Just a few participants of UWV doubted if the information was correct and up to date. Those participants already had some basic knowledge about the subject, so they read the information more critically. The employees of the SVB were all satisfied with the information in the e-learning, because the employees were involved in the development process and gave feedback on the e-learning. With their feedback, the right and most useful information was included in the e-learning and the exceptional situations were removed from the e-learning. This was in contrast to UWV, where some employees wanted more in-depth information in the

e-learning, whereas employees of SVB thought that the information in the e-learning in the beginning contained too much detailed information and later on the information was good, but still too much. A balance should be found in which information in the e-learning should be included and excluded. The e-learning provided mainly factual and procedural knowledge. It is difficult to learn the practice with e-learning. Therefore, the gained knowledge should be put into practice. Employees should not wait too long before they put their gained knowledge into practice, otherwise they forget what they have learned. The e-learning was not often used as a reference book by the employees of UWV. The employees thought that making the e-learning was a one-off thing before the practical session and they rarely looked back at the e-learning afterwards. The e-learning was not easy to use as a reference book, because they have to log in and have to search in the e-learning where the information is. It was also not a handy summary with the procedural steps that could be used for the assessments. A printed version of the e-learning would be an option for employees to use the e-learning more often as a reference book. At the SVB, the e-learning was used often as a reference book, because all exercises with explanation could be printed on paper and could be used to know how a complex situation was assessed in the exercises.

The time that was spent on the e-learning differed between the participants. Employees of the SVB spent approximately eight hours on e-learning, which was longer than the estimated time of three to five hours. Most participant of UWV finished it in three to four hours, but other participants finished it faster. This depended on the prior knowledge of the participants about the subject. Some participants studied the e-learning briefly and others read it extensively and made all exercises and cases. Employees mentioned that their concentration weakened when they looked at a computer screen for more than two hours, so the e-learning should not take too long to complete it. Some participants did not finish the e-learning at once, but divided their time they spent on e-learning over a couple of days. The main reasons to use e-learning was to prepare for the training day and to keep their knowledge up to date. E-learning was perceived as useful, because it gets everyone on the same level in terms of gained knowledge, so the differences in performing the tasks could be minimized. The e-learning was also perceived as useful by the employees to test their knowledge and to know which knowledge they did not possess sufficiently. The difference between UWV and the SVB was that the e-learning of the SVB shows where you can find the information of the topics on which you scored badly and UWV does not do this. Many participants found the combination of the e-learning with the training day useful. During the training day, the knowledge can be put into practice, which is

not possible without making the e-learning, because the knowledge should be possessed first before it can be applied. Thus, the combination of e-learning and a training day was perceived as valuable.

Which aspects of the quality of work performance can be influenced by the use of e-learning?

This sub-question is answered with the themes that emerged from the collected data. Three themes are identified which give insights into the aspects that can be influenced by the use of e-learning. These themes are the influence of the use of e-learning on task performance, job satisfaction and work flexibility.

The influence of the use of e-learning on task performance

The first theme is task performance. This is one of the aspects that can be influenced by the use of e-learning. Participants mentioned that they could work more efficiently, because they gained knowledge about the way they had to perform their tasks. One of the participants of UWV had already many years of experience and still learned something that could help to efficiently perform the job tasks. Because of the e-learning, the participant learned that some steps did not have to be taken to complete the assessment. Nowadays, the participant does not do this anymore and can finish the reports faster, because the participant learned what should be included in the assessment report and what not. Other participants of UWV mentioned that e-learning is useful to learn which process steps should be taken and which information should be included in the report. Currently, this is not yet concisely presented in the e-learning. If this is the case, it would help the employees to work faster, because they do not have to search for the information, but know where they can find the information about what should be included in the report. Some employees of the SVB mentioned that they gained new insights from the e-learning how they should do their work. They learned how to interpret some rules and changed their way of working. This helped them to do their work in a better way, which is more according to the guidelines. Calculating someone's equity could be done in different ways, but the new way that was learned, was easier to use. It was also easier for colleagues to understand how equity was determined by another colleague, because many employees used this new way of calculating it. This helps them to work more efficiently and to make the calculation reproducible for other colleagues who sometimes have to answer the questions of clients about the application which they did not assess themselves. Another participant of the SVB thought that if they keep their knowledge up to date, they do not have to search for the information and

can do the assessments easier. Then, they do not have to ask as much to colleagues and can do the assessments on their own, which saves a lot of time. The developer of the e-learning at the SVB thought that e-learning can contribute to an improvement of the work performance, but in combination with for example performance support. This is explained in the next quote:

> That can definitely contribute to it, but not only. It is not just e-learning, as with everything, it is a combination of it. But that can be improved even more if it is used as performance support, learning in the workplace. Then you are talking about 70%. E-learning as workplace support, then I am more convinced of that than just 10% digitally. It must be more than just an education. Also your practice support should be digital. And that can also be e-learning. That you can find the digital information you need at your workplace very easily. And that e-learning also supports you when you actually need it and not just in preparation for your work (SVB, participant 8).

The developer used e-learning in the broadest sense of the word. E-learning as performance support could be possible in the near future at the SVB. Then, employees are supported in their workplace digitally. When they assess the applications and do not know what they have to fill out, the computer system notices it and directs the employee to the right information to know what should be filled out.

Many participants of UWV and the SVB thought that e-learning is useful to update their knowledge, so they can perform their job correctly. However, only e-learning is not sufficient to learn how to perform a task. E-learning is useful to gain the required knowledge to perform the job, but it does not learn the employees how this knowledge can be used to perform the tasks in practice. Here fore, practical sessions are useful to learn how to apply the knowledge in practice. One of the participants said the following about the combination of e-learning and the training day:

> It is good to discuss it with each other on that day and I think it is useful with e-learning that you do it in preparation for such a course day. It is nice to discuss it with each other, how do you see that, why are there differences, that is the nice thing about the job of labor expert, that it is not always 100% closed. Multiple solutions and answers are possible, so it's nice to discuss that with each other on such a day (UWV, participant 2).

The participant mentioned that practicing with each other and listening how others think about the subject, is very valuable. Another benefit of the practical session was the possibility to ask questions, because one of the participants of the SVB mentioned that some questions remained unanswered after the e-learning. So, the combination of e-learning and a practical session can have together more influence on the task performance than they have separately.

The influence of the use of e-learning on job satisfaction

The second theme that was identified in the data about the quality of work performance, is job satisfaction. The workload and work pleasure can have an influence on someone's job satisfaction. All participants mentioned that the workload is high and that they all sometimes experience stress in their work. One of the participants mentioned the following about experiencing stress:

> Yes, of course, but every person experiences it differently. I think it really matters how things are arranged at your office. How timely do you get things delivered so that the lead time is acceptable, you can't say anything about that. But yes, it can sometimes cause stress. There are some things that you can do very well, but I have a pile of files in my closet and that can make me very nervous, but I don't, because I can't do more than I do and I also know that I'm doing the best I can (UWV, participant 3).

Some other participants also mentioned that they sometimes depend on other departments, before they can do their job. If someone does not deliver the work on time, one of the participants would work a litter harder to complete it on time, but there were limits to that. If the participant did not have any influence on it, there was no need to worry too much about it. The participant got frustrated about it and often informed the manager if it could not be finished on time. Other participants thought that the extent to which you experience stress also depends on the pressure you put on yourself. The participants of the SVB mentioned that they experienced stress if they knew that there was too much work to do which could not be finished on time and that no one could help them because everyone is busy. All participants thought that stress is something personal and that the use of e-learning could not influence their stress for example by reducing their stress or learning how to deal with stress.

Employees of UWV and the SVB have to meet their deadlines which are determined by the Ministry. UWV and the SVB are obliged to let the client know within a certain period what is going to happen, so the assessments should be completed within a specified time. The employees of UWV are a little more flexible with the deadlines than the employees of the SVB. The quality of the assessments with the right argumentation is more important to them than the deadlines. The employees are still in training, so the deadlines are not very strict for them. At the SVB, the deadlines are very important and the management also emphasizes the importance of meeting the deadlines. Some employees of UWV and the SVB thought that e-learning has no influence on meeting the deadlines. Experience can help to meet the deadlines. Participants with experience have done the assessments many times and can do it faster. Some employees

of UWV and the SVB thought that if you have the information how you have to assess the reports and applications, it is easier to do it and it helps to do the work faster and meet the deadlines. Reports of colleagues can be used as an example or the e-learning can be used as a reference book to find the information that is needed. One of the participants explained the usefulness of e-learning to meet the deadlines:

> I think the purpose of e-learning is to give you the knowledge and to use that knowledge to meet your deadline. You have to acquire knowledge and with the knowledge you have to do your work and then you have to make pace. Then you have to switch very quickly. You simply have to master those facets to be able to perform your work (SVB, participant 11).

The use of e-learning can have an influence on meeting the deadlines. E-learning offers the knowledge to do the job and in this way it can help to work faster and meet the deadlines.

The employees of UWV got the most pleasure from their work when they talked to the clients. They liked to explain the situation clearly to the client, because it is complicated to understand and therefore important to explain it in a simple way. They also liked to analyze the reports and to puzzle with the information to come up with a correct assessment. At the SVB, the employees got the most pleasure from their work when they could do something for the client and heard from the client that he/she was helped very well. Another employee said that working together with colleagues was very pleasant. Furthermore, the variety in tasks was mentioned as pleasant by one of the participants of UWV and the SVB. The different tasks made their work interesting. Overall, none of the participants thought that work pleasure could be influenced by the use of e-learning.

The influence of the use of e-learning on work flexibility

The third theme that emerged from the collected data, is work flexibility. The employees of UWV thought that they had enough freedom and flexibility in how they do their job. It is difficult to know what is right or wrong, because there are many interpretations and different views of different employees, so the employees mentioned that it is important to substantiate their judgment. One of the participants of UWV said the following about it:

> I have enough experience to understand a situation quickly, but in the beginning it took some searching to know if the answer was correct or wrong. Multiple answers can be correct in the profession of a labor expert. It's about the reintegration, the substantiation that I give, so I trust that now. Based on those documents, I have this judgement. And someone else could come to a

The employees have the freedom to formulate their own judgements and if it is well substantiated, then it is less of a problem if someone else has another judgement about it. It depends on the information in the report that the employee receives from the employer and how this information is interpreted by the employee. At the SVB many participants mentioned that it is sometimes difficult to interpret the legislation. One employee can read it differently than another employee and has a different understanding of what it means. At the SVB, they talked with colleagues if they did not know how something had to be interpreted. The employees also thought that the practical session was useful for this, because it offered a moment to talk with each other about their own interpretations and in the end they got some new insights and had a more similar interpretation of the legislation. At UWV, there is a special reporting e-learning, which learns employees what they have to include in their report and how they have to substantiate it. One of the employees still had to do this e-learning and expects to learn some tips about how a report can be completed faster and thinks that this will help in performing the job more efficiently. In general, many employees of UWV and the SVB thought that practical sessions are more useful to learn how to interpret the legislation than e-learning. E-learning could be used to learn how to make a report with good substantiation.

Changes in legislation sometimes happen and influence the execution of the job tasks. Employees have to be informed about the changes in their work and have to adjust their job tasks to the new changes. At UWV, the employees are rarely informed about changes in legislation by e-learning. However, e-learning was used for changes in the use of systems. So, e-learning is used to learn employees to work with new systems, but it is not often used to learn about changes in legislation. The next quote illustrates this:

Another participant also mentioned that e-learning was used for the new system, but changes in instructions or processes are not learned by e-learning. Here fore, the newsletter or the intranet is used. At the SVB, e-learning was also not used to be informed about changes in

legislation. Changes are posted on the intranet. There is a page where all changes are published, so the employees have to read this page frequently.

It also depends on the impact of the change and how employees are informed about it. At UWV, a training day or more training days will be organized if there is a fundamental change in legislation. Then, employees can discuss the change with each other and share their opinions about the change. Together they can think about how the change can be applied in practice and how they have to change their way of working. Employees did not mind to be informed about a change by a news message on the internet if the change did not have a great impact on their work. If it had a great impact on their work, for example when a new law would be implemented, then they liked to learn about it by a training day and e-learning. One of the participants of the SVB mentioned the following about the impact of the change:

> It depends on the size. All changes are published on Paradocs and then you will automatically receive a message via intranet if something will be changed. Then the texts in Paradocs will be adjusted and that changes your work instruction. That is more informative learning. Until you digitally deliver something major about this change that has such an impact on the work that someone has to perform or has such an impact on the assessment process. That requires more information than just a link to the text that has been adjusted (SVB, participant 8).

Small changes in legislation are shared with employees via intranet. For changes that have a great impact on the work processes, only a news message is not sufficient. Then, e-learning and especially a training day should be organized. E-learning does not play a great role in learning employees about changes in legislation. Only if there are bigger changes that have much influence on the work execution, then e-learning can be used to learn employees more about the changes in legislation and after the e-learning it should be discussed in a training day.

Overview

The second sub-question that is answered, is: *Which aspects of the quality of work performance can be influenced by the use of e-learning?* This question is answered with the three themes that emerged from the data. These themes are the influence of the use of e-learning on task performance, job satisfaction and work flexibility.

Most participants thought that e-learning was useful to gain knowledge to perform their work more efficiently and faster. It would help the participants of UWV if the process steps were explained clearly in the e-learning and if it showed which information should be or should not be included in the report. Then, the employees know exactly what they have to do and do not

have to search where they can find which steps should be taken and which information should be included. Some employees of the SVB changed their way of working because of the insights they got from the e-learning. They learned how to interpret some rules and this helped them to work in a better and more uniform way. E-learning also helped to keep their knowledge up to date, so they did not have to search as often for the information and could do their job faster. However, e-learning is not sufficient to learn how to put the knowledge into practice. Here fore, practical sessions are needed to apply the knowledge in practice. The practical sessions also offered the possibility to ask questions which still remained unanswered after finishing the e-learning.

The workload at UWV and the SVB is high and the employees all experienced sometimes stress in their job. They did not always have influence on what caused the stress. They were dependent on other departments who delivered some documents too late, which caused them stress, because they also had to meet their own deadlines. All participants thought that the use of e-learning could not influence the experienced stress, because stress is person-dependent. The deadlines are a little more flexible for UWV employees than the SVB employees, because they are still in training. At UWV, the argumentation in the reports is more important than the deadlines. Some employees of UWV and the SVB thought that the use of e-learning did not have influence on meeting the deadlines, but that work experience can help to meet the deadlines. On the other hand, some employees did think that the use of e-learning could help to gain the required knowledge to perform the job faster, which results in meeting the deadlines. The employees of UWV got the most pleasure from their work by talking to clients and analyzing the reports. Employees from the SVB enjoyed their job, because they could mean something to someone and liked the variety of tasks. None of the participants thought that the use of e-learning could influence their work pleasure.

The employees of UWV and the SVB mentioned that they had enough flexibility and freedom to decide how they perform their job. There are many different interpretations and views from different employees, so it is important for UWV employees to substantiate their judgement. The employees of the SVB also had to deal with different interpretations of the legislation. Practical sessions were useful to talk with each other about everyone's own interpretation and to get a more similar interpretation of the legislation among the employees. Most employees of UWV and SVB thought that the practical sessions are more useful to learn how to interpret the legislation and e-learning is more useful to learn how to make a good report with a good substantiation. Changes in the legislation were mostly communicated on the intranet of UWV

and the SVB. It depended on the impact of the change. When the change has a big impact on their work, then only e-learning would not be sufficient, but a practical session would be useful to talk with each other about the impact of the change. All employees were fine with it when they were informed about small changes on the intranet. For bigger changes, they liked to have e-learning about it and a training day to discuss it with each other. Thus, e-learning could be used to learn employees about the changes in legislation, but this depends on the impact of the change.

Theoretical e-learning model

This research is carried out inductively. Inductive research is used to identify themes and patterns from the collected data, which are used to formulate a theory or conceptual framework (Bilau et al., 2018). In this research, a proposed e-learning model was developed. After the collected data was analyzed, the results showed that the use of e-learning did not have influence on the proposed dimension well-being. Therefore, an adjusted theoretical e-learning model is developed, which is grounded from the collected data. This theoretical e-learning model is shown in figure 2.
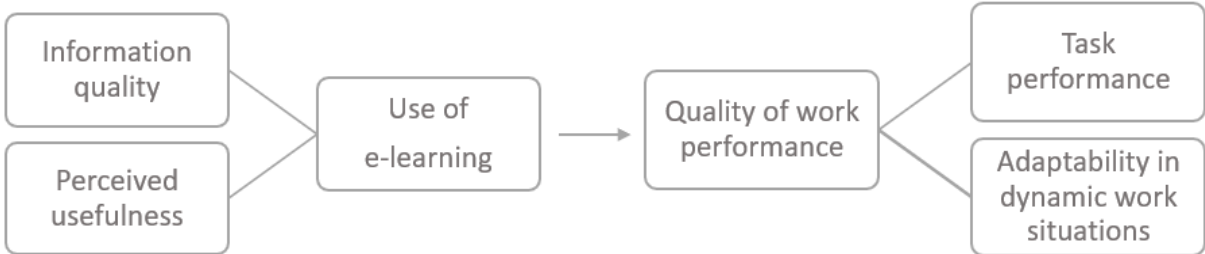

Figure 2: Theoretical e-learning model

Chapter 5: Conclusion and discussion

First of all, the conclusion of this research is presented. In the discussion, the contributions and limitations of this research are discussed. Lastly, some recommendations for future research are mentioned.

Conclusion

The aim of this research was to contribute to the knowledge about how the use of e-learning influences the quality of work performance of employees by gaining insights into the influence of the use of e-learning on the quality of work performance of employees in public organizations. This research is carried out by two public organizations, namely UWV and the SVB. Seven employees of UWV and four employees of the SVB were interviewed. The research question is as follows: *How does the use of e-learning influence the quality of work performance of employees in public organizations?* The two sub-questions have answered this research question. The first sub-question is: *How is e-learning used by employees in public organizations?* and the second sub-question is: *Which aspects of the quality of work performance can be influenced by the use of e-learning?* The results showed that information quality and perceived usefulness of the use of e-learning can influence the quality of work performance of employees in public organizations. These two factors of the use of e-learning can influence the task performance and adaptability in dynamic work situations of employees in public organizations. The conclusion of this research is presented below.

The quality of the information that is provided in the e-learning can influence the quality of work performance of employees in public organizations. If the information is correct and up to date it can positively influence the quality of work performance. The information in the e-learning should balance between in-depth information and too much unnecessary information to have a positive influence on the quality of work performance. The answers of the exercises should also be explained to have a positive influence on the quality of work performance. The knowledge that was provided in the e-learning was mainly factual and procedural knowledge. This knowledge learned employees the required knowledge to perform their job tasks and this has a positive influence on the quality of work performance.

Furthermore, the perceived usefulness of employees can also influence the quality of work performance of employees in public organizations. E-learning was perceived as useful, because it helps employees to keep their knowledge up to date to perform their job well and to test their knowledge, so they know what knowledge they do not possess sufficiently. This has a positive

influence on the quality of work performance. It was also mentioned that e-learning was perceived as useful, because it prepares employees for the training day. They need the knowledge from the e-learning to participate in the training day to learn how they have to perform their job, which has a positive influence on the quality of work performance.

Two aspects of the quality of work performance can be influenced by the use of e-learning. These aspects are task performance and adaptability in dynamic work situations. The use of e-learning can influence the task performance of employees in public organizations. The use of e-learning can help employees to work more efficiently, because they gain knowledge about how they have to perform their job in the best way, which has a positive influence on the quality of work performance. The use of e-learning also supports employees in keeping their knowledge up to date, so they do not have to search for the information about how they have to perform their job tasks, which helps the employees to do their job faster. This has a positive influence on the quality of work performance, because their productivity is higher, when they are able to perform their work faster.

Lastly, the use of e-learning can influence the adaptability in dynamic work situations of employees in public organizations. E-learning can be used to learn employees to make a good report with a clear substantiation of their judgement for different client situations. In this way, they can ensure high quality of their reports for all the different cases. This has a positive influence on the quality of work performance. E-learning can also inform employees about changes in legislation, which influence the execution of the job tasks. Especially for major changes, the use of e-learning can learn employees how they have to change their way of performing their job tasks. The use of e-learning learns employees how to adapt to changes in legislation and this has a positive influence on the quality of work performance.

Discussion

In the discussion, the scientific and social contribution of this research are discussed. The practical implications to implement the new insights in the organizations are also mentioned. Lastly, the limitations of this research are described and some recommendations for future research are proposed.

Scientific contribution

This study contributes to scientific knowledge, because it offers insights into the influence of e-learning on the quality of work performance in public organizations. Much scientific literature is available about the intention to use e-learning, but not about the influence of the use of e-

learning on the quality of work performance (Alsabawy et al., 2016; Bhuasiri et al., 2012; Cheng, 2010; De Melo Pereira et al., 2015). This study showed how e-learning can influence the quality of work performance of employees in public organizations. Many scientific studies mainly focused on the use of e-learning in school environments, while e-learning is also used in work environments (Chen, 2010). This study attempted to gain more scientific knowledge about the use of e-learning in public organizations. It has been investigated that the use of e-learning helps students to improve their academic performance, but this effect has not yet been investigated for the work performance of employees in public organizations (Farid et al., 2014). Therefore, this study offered insights into the influence of the use of e-learning on the quality of work performance of employees in public organizations. It showed that task performance can be influenced by the use of e-learning by learning how the tasks can be performed more efficiently and faster, which has a positive influence on the quality of work performance. It also showed that well-being cannot be influenced by the use of e-learning. Lastly, this research contributed to the scientific literature, because it showed that adaptability in dynamic work situations can be influenced by the use of e-learning. The use of e-learning can learn employees how they have to perform their job tasks after the changes in legislation. This has a positive influence on the quality of work performance.

Social contribution

The social contribution of this research, is that it offers insights to public organizations on how the use of e-learning influences the quality of work performance of employees in public organizations. For many organizations, it is important to keep the quality of work performance of their employees high. Employees need to possess the required knowledge to perform their job and this research offers insights on how e-learning can be used to influence the quality of work performance of employees in public organizations. Public organizations can use these insights to make some adjustments to their e-learning to influence the quality of work performance more positively. This research provided knowledge about the aspects of the use of e-learning that can be taken into account to influence the quality of work performance. Public organizations for example, can take a look at the quality of the information in the e-learning and check if it is up to date and correct and if it can be improved to influence the quality of work performance even more positively. These insights from this research can also be used by public organizations who like to develop an e-learning that influences the quality of work performance of their employees. They can look at the aspects that can influence the quality of work performance and they can integrate these aspects into the new developed e-learning.

Lastly, these insights are most applicable to UWV and the SVB, so they can use these insights also to improve their e-learning which has a positive influence on the quality of work performance of their employees.

Practical implications

There are some implications for organizations to implement these insights from the results. For instance, it might be difficult and very time consuming to update all e-learning if there has been a change in the legislation and the e-learning has to be adjusted. Then, they have to know in which e-learning this legislation was explained or was discussed in exercises. Especially, when employees print the exercises of the e-learning and use it as a reference book, it is important that the exercises are up to date. If employees use outdated and incorrect exercises as an example to assess the same situation, they will make mistakes in the assessments. This has a negative influence on the quality of their work performance. Therefore, it might be an option to not offer a printed version of the e-learning with the exercises. It could also be that it is expensive to convert the e-learning to a PDF file, which can be printed. Furthermore, time might play a role in developing e-learning about a major change in legislation. If employees have to be informed about the change in legislation, which has much influence on their way of doing their job, there should be enough time to develop the e-learning. In practice, there is often not enough time to prepare for a major change, so organizations might prefer to inform the employees about the change in other ways than e-learning. It might also depend on the costs of developing e-learning. If a change has influence on the execution of the job tasks of a few employees, organizations might decide not to make an e-learning about it, because it is relatively expensive to develop e-learning for a few employees.

Limitations

This research has been conducted in two public organizations. Seven employees of UWV were interviewed and four employees of the SVB. This study tried to gain insights into the influence of the use of e-learning on the quality of work performance of employees in public organizations. This study is too small to generalize the results to all public organizations. There was not sufficient time to interview more employees of other public organizations. However, the main goal of qualitative research is not to generalize the results to all other contexts, but to study a specific phenomenon in a certain population (Leung, 2015). The results are probably not generalizable to all public organizations, but it is generalizable to two public organizations, namely UWV and the SVB. The results of this research are generalizable to employees with

the same profession in the same context and who have finished the same e-learning. The researched organizations are described in detail, so organizations in other contexts can judge if the results are generalizable to their organizational context (Symon & Cassel, 2012).

Furthermore, the operationalization of the use of e-learning and the quality of work performance were derived from the scientific literature. This study is an inductive research, but some scientific knowledge was used to develop a theoretical framework, which is not exactly how inductive research should be conducted. This lead to interview questions that were derived from the literature. A question as: *How can e-learning be used to prepare you for changes in legislation?* was based on the scientific literature about the quality of work performance. Some other questions were more open and less directed, so the participants could think for themselves how e-learning could influence the quality of work performance. One of these questions was: *To what extent do you think that e-learning is useful to enhance your work performance?* From these sort of questions the data showed that employees also think that not only e-learning, but the combination of e-learning and practical sessions are very useful to improve their work performance. After the first interview, more questions were asked about the practical sessions. The standard interview questions were asked to all participants, so the answers on these questions could be compared between the participants. Other additional questions were asked when a participant mentioned something useful to ask questions about in the other interviews.

The data was coded inductively according to the Grounded Theory. However, during the coding process, the coded data was affected by the preconceptions and the interpretations of the researcher (Symon & Cassell, 2012). If another researcher had coded the same data, different themes could have been emerged from the data. The data could have been coded unconsciously more in line with the theoretical dimensions, so it fitted with the dimensions of the proposed e-learning model.

Moreover, at UWV, the participants were not selected randomly. The emails were sent to all employees who were on the list of participants for the e-learning and training day. Two employees mailed back to make an appointment for the interview, but other employees did not respond to the e-mail. The other employees were selected on the basis of the place they worked, so the selected participants worked at many different offices. This might not be ethical, because not everyone had the chance to participate in this research, but the benefits of interviewing employees of different offices, outweighed the ethical issues for participation. The employees were called to participate in the interview, and this might also have given them the feeling that they had to participate and felt the pressure to make time for the interview, which is also not

very ethical. However, the participants were informed that they could withdraw from this research at any time, so they were free in their choice to participate.

One of the interviews was not transcribed, because the participant did not want the interview to be recorded. This decreased the internal validity of this interview, because the interpretation of the answers could be different from what the participant mentioned (Symon & Cassell, 2012). To minimize the chance of wrong interpretations, the transcripts of the interviews were sent to the participants for member checks. However, not all participants responded to the e-mail, so it might be assumed that they were fine with the interpretation of the results or did not take the time to read the transcripts. Fortunately, almost half of the respondents responded to the member check e-mails, so some small changes were made to the transcripts after the member checks. The member check was especially useful for the interview that was not recorded and transcribed.

Recommendations

Future research about the influence of the use of e-learning on the quality of work performance of employees in public organizations is recommended. This research investigated two public organizations, but to generalize the results to all public organizations, more public organizations should be investigated. Besides, the interview questions were derived from the scientific literature, so other factors of the quality of work performance that were not derived from the literature or were not mentioned by the participants, have not been included in this research. For future research, it might be an option to interview more employees from different public organizations to investigate if there are other factors of the quality of work performance that can be influenced by the use of e-learning, which were not included in this research. Then, these other factors can be investigated to know how the use of e-learning can influence these factors. Furthermore, one e-learning at UWV and the SVB was examined for this research, while there might be some differences in all e-learning and in the use of e-learning by different employees of different professions. For future research, other e-learning for different professions at UWV and the SVB could be examined to investigate if there are many differences in how the e-learning looks like and how it is used by the employees. Lastly, during the interviews, it became clear that the combination of e-learning and a practical session was perceived as useful to improve the quality of work performance. For future research, the influence of the combination of e-learning and a practical session on the quality of work performance could be investigated. It could also be useful to investigate the influence of a practical session on the quality of work performance. Then, the use of e-learning, the practical session and the combination of both can

be compared with each other to get insights into which one of the three influences the quality of work performance of employees in public organizations the most.

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Appendix 1: Interview guide employees

Name participant:

Company:

Function:

Work place:

Introduction +/- 5 minutes

- ✓ Introducing myself
- ✓ Time of the interview, approximately 60 minutes
- ✓ Ask permission to record the interview
- ✓ Confidentiality collected data
- ✓ Right to withdraw at any time
- ✓ Aim of this research and research question
- ✓ Questions or comments in advance?

Topic e-learning +/- 20 minutes

- How much time does it take to finish the e-learning?
- How much time do you like to spend on e-learning?
- What do you think about the time spent on e-learning in proportion to the time spent on other education activities?

- What is your opinion about the quality of the information in the e-learning?
- What sort of knowledge did you gain from the e-learning? *factual, conceptual, procedural or metacognitive knowledge*
- What sort of knowledge would you like to gain from the e-learning?
- What do you learn from the e-learning? *remember, comprehend, apply, analyze, synthesize or evaluate*
- What do you want to learn from the e-learning?
- To what extent do you think that e-learning is useful to enhance your work performance?
- How do your colleagues think about the usefulness of e-learning?

- Which parts of the e-learning do you find most important?
- Which parts would you erase from the e-learning?
- Which parts in the e-learning are you missing or are not sufficiently present?
- How does your ideal e-learning look like?

Topic work performance +/- 30 minutes

- What are your job tasks?
- Which job tasks can be learned by the use of e-learning?
- To what extent can e-learning be used to guarantee a high quality of the execution of the job tasks?
- Which parts in your work do you find difficult?
- How can e-learning be used to help you to perform difficult tasks?
- How can e-learning be used to learn you the job knowledge?

- How do you adapt in your work to different customers and their situation?
- How can e-learning be used to learn you how to adapt to different customers and their situation?
- How do you adapt to new legislation that influences your execution of job tasks?
- How can e-learning be used to prepare you for changes in legislation?

- How do you meet your deadlines in your work?
- How can e-learning be used to meet your deadlines?
- To what extent do you experience stress in your work?
- To what extent can e-learning be used to deal with stress?
- To what extent are you satisfied with your job tasks?
- To what extent can e-learning be used to be satisfied with your job tasks?

End +/- 5 minutes

- ✓ Thank you for your participation
- ✓ Questions or comments?
- ✓ Member check
- ✓ Interested in the results of this research?

Appendix 2: Interview guide developers

Name participant:

Company:

Function:

Work place:

Introduction +/- 5 minutes

- ✓ Introducing myself
- ✓ Time of the interview, approximately 60 minutes
- ✓ Ask permission to record the interview
- ✓ Confidentiality collected data
- ✓ Right to withdraw at any time
- ✓ Aim of this research and research question
- ✓ Questions or comments in advance?

Topic e-learning +/- 20 minutes

- Why is e-learning used?
- What are the learning objectives in the e-learning?
- What should be discussed in the e-learning?
- Which aspects are important to think of when you develop e-learning?

- How much time does it take to finish the e-learning?
- How much time do you think that employees spend on e-learning?
- What do you think about the time spent on e-learning in proportion to the time spent on other education activities?

- How do you think that employees learn best?
- What sort of questions are used to learn employees the theory?
- How do you ensure good quality of the information in the e-learning?

- What sort of knowledge is gained from the e-learning? *factual, conceptual, procedural or metacognitive knowledge*
- What sort of knowledge do you find important to gain from the e-learning?
- What is learned from the e-learning? *remember, comprehend, apply, analyze, synthesize or evaluate*
- Which of these are the most important to learn from the e-learning?
- To what extent do you think that e-learning is useful to enhance work performance?
- How do employees think about the usefulness of e-learning?

- Which parts of the e-learning do you find most important?
- How does your ideal e-learning look like?

Topic work performance +/- 30 minutes

- Which job tasks can be learned by the use of e-learning?
- To what extent can e-learning be used to guarantee a high quality of the execution of the job tasks?
- How can e-learning be used to help you to perform difficult tasks?

- How can e-learning be used to learn employees how to adapt to different customers and their situation?
- How can e-learning be used to prepare employees for changes in legislation?

- How can e-learning be used to meet deadlines?
- Do you think that e-learning is most appropriate to learn something new or to refresh employees' knowledge?
- How can e-learning be used most efficiently?

End +/- 5 minutes

- ✓ Thank you for your participation
- ✓ Questions or comments?
- ✓ Member check
- ✓ Interested in the results of this research?

Appendix 3: Codebook

Selective codes	Axial codes	Open codes	Quotes
Lay out	Structure of the e-learning	Sequence of making the parts	You can decide how you want to organize it. If you say, I start with the theoretical part, yes fine, and others think I already master the theory, I will start with the questions straight away. That is also possible. It is just what you want of course (SVB, participant 9).
		Splitting it up into logical parts	Well, with an e-learning it is important that you don't throw all kinds of questions together, like a mix. It is important that you make a breakdown of certain components. Someone with an AOW background may have difficulty with questions in the area of unemployment benefits (SVB, participant 9).
	Design of the e-learning	Old dated	In general I am quite satisfied with the e-learning. Only the layout could be better. This is a bit old-fashioned (UWV, participant 5).
		User friendly	The design of the e-learning, I think, well terrible, that may be a bit exaggerated, but it is not really pleasant to browse through (UWV, participant 6).

Knowledge	Quality of information	Correctness	That something with respect to the content, that this and that was claimed, but that we still doubted if that was right and then you get confused and before you start doubting yourself, then I also would say, I stop with it, because what I know now, is correct and then I will be put on the wrong track (UWV, participant 6).
		In-depth information	I sometimes find it too concise. I understand that you do not write a whole story about what it is and how it works, but for some aspects, I think four of five sentences is not enough. It may also be that I need to have that information to master it, but sometimes I have the idea that more could be explained and that the theory could be discussed in more detail (UWV, participant 7).
	Reference book	Used afterwards	If it is really about complex processes or work types, then I will look back at the e-learning again, because some cases with specific situations do not occur daily. In the e-learning were quite some complicated examples, so you can put it next to your work and look how they did it and how it worked exactly, because things like that are not really well explained in

			Paradocs, so then you use the e-learning as a sort of reference book (SVB, participant 10).
		Summary	It is not a useful summary that I can put next to my work, it is just a story of how you are guided through a topic, once an introduction, a digression and I do not think that is handy when I have to do my work. Then I want to have ten steps in a row doing this, that and that (UWV, participant 6).
		Process steps	Well I also got this on the course day itself and I think it is not in the e-learning, the process steps. Well, this is really perfect to keep with you when you're on the phone with the employer (UWV, participant 5).
	Gained knowledge	Facts	I think that the factual knowledge in the e-learning is very important. We cannot come up with anything, we must proceed from the facts, so that is always important. And also procedural knowledge in the e-learning, how to do something. This is really just a protocol that you follow which is explained in the e-learning, so that is very procedural (UWV, participant 3).
		Procedures	The practice is more difficult to learn with e-learning. But the whole process, thus the process steps that

			are there to assess the RIV, can be learnt by using e-learning (UWV, participant 5).
		Practice	Just reading, I wonder if you, you also have to get started with it in practice. Otherwise, you have already forgotten it. You must apply it immediately in practice, otherwise I think you do not have much benefit from reading through the e-learning before the training day. But that applies to everything, you have to put it into practice (UWV, participant 4).
Exercises	Sort of questions	Cases	And for testing the knowledge we have a case assignment, a case of Mr. and Mrs. go abroad and this happens to them, what is your idea here, that is more a case, a description. They can answer it and as soon as they have answered that, the answer appears, so it is more a matter of testing the theoretical knowledge a little bit and during the classroom session we will deal with that a bit more (SVB, participant 8).
		Intermediate knowledge testing questions	I knew most of it, so I was able to get through it faster. I especially found the intermediate tests useful to make. I have not always done the larger assignments. I think that the larger exercises are not really

			manageable. They should be finished within an hour (UWV, participant 3).
	Explanation	Feedback on wrong answers	If you have to give an answer to a question and you click on one then you get it is incorrect. Then you have to do it again and then you get you have had your attempts and then you get the correct explanation or not. Doing wrong isn't bad, but what did I do wrong and why, that is a bit the irritation (UWV, participant 6).
		Different interpretations	Testing one's own knowledge with sums is very easy, it is right or wrong, but when it comes to weighting and interpretation, it is difficult to provide feedback via e-learning (UWV, participant 1).
Motivation	Time spent on e-learning	Prior knowledge	I don't think beforehand an hour is enough, it depends on what comes at me, but yes, most of what was in it, I already knew that, sometimes just the tightening, and what I take most to me and what takes the most time, is the case that is described. It is not in advance that I say, it must take an hour, it may take longer than an hour, but in this case it was like that (UWV, participant 2).
		Concentration	It should not take too long, because after two hours you just feel that the attention is weakening and then you

			are no longer concentrated when making the e-learning. Then you are easily distracted and your focus becomes less and less (SVB, participant 9).
	Perceived usefulness	Testing own knowledge	There is also a test in the e-learning and that starts with theoretical questions. At the end of the test that consisted of thirty questions, you can see the number of mistakes. If you have twenty of the thirty questions answered incorrectly, then the e-learning shows on which subjects you do not score well. So in the e-learning there is always a theoretical part with a number of questions about the subject and at the end you see which questions you answered wrong. Then you get an explanation of what it should have been and why it should be that way (SVB, participant 9).
		Combination with training day	I see the usefulness of e-learning, but in combination with a training day and that has to do with the fact that the e-learning itself remains fairly dry and factual material, because it is not very practical. Without that training day it remains a theoretical matter and it comes to life when I spend a whole day working on it and when I can also

			test it more in practice (UWV, participant 7).
Task performance	Efficiency	Not doing things that are not necessary	Well, with the RIV, I can do it faster now. Because I don't have to do a number of things that I did before. It's nice if you do that, but you don't have to, now I don't do them anymore (UWV, participant 2).
		Way of working	You could determine equity that way, but you could also determine equity in a different way. Your outcome is still the same, but they provide you with just a few more guidelines in this e-learning. In the meantime, everyone has developed their own way to determine it, but now they tell us that this is the best way. I also think that this way is better. In this way, everyone can follow your thinking or working method (SVB, participant 10).
	Required knowledge	Keeping knowledge up to date	The more knowledge you have, the less you have to look up and the easier you can assess the application. So the more you keep your knowledge up to date, the better your knowledge becomes. You have to look up fewer things and ask less (SVB, participant 8).
		Practice with the knowledge	It is good to discuss it with each other on that day and I think it is useful with e-learning that you do it

		65	in preparation for such a course day. It is nice to discuss it with each other, how do you see that, why are there differences, that is the nice thing about the job of labor expert, that it is not always 100% closed. Multiple solutions and answers are possible, so it's nice to discuss that with each other on such a day (UWV, participant 2).
Job satisfaction	Work load	Stress	Yes, of course, but every person experiences it differently. I think it really matters how things are arranged at your office. How timely do you get things delivered so that the lead time is acceptable, you can't say anything about that. But yes, it can sometimes cause stress. There are some things that you can do very well, but I have a pile of files in my closet and that can make me very nervous, but I don't, because I can't do more than I do and I also know that I'm doing the best I can (UWV, participant 3).
		Deadlines	I think the purpose of e-learning is to give you the knowledge and to use that knowledge to meet your deadline. You have to acquire knowledge and with the knowledge you have to do your work and then you have to make pace. Then you

			have to switch very quickly. You simply have to master those facets to be able to perform your work (SVB, participant 11).
	Work pleasure	Variety in work	I get a lot of satisfaction from my work through the variety, the different tasks that I do. Participating in an e-learning or participating in meetings about certain topics. That makes the work interesting. If I just have to concentrate on assessing, I will be done with it quickly. It is important that you do work that you enjoy (SVB, participant 9).
		Talking to clients	I think talking to people is the nicest thing to do. The different stories that you still hear. Most of the time you just want to make it clear to people. It is complicated enough and I hope that I can explain it in a simple way (UWV, participant 4).
Work Flexibility	Flexibility in task execution	Freedom in judgements	I have enough experience to understand a situation quickly, but in the beginning it took some searching to know if the answer was correct or wrong. Multiple answers can be correct in the profession of a labor expert. It's about the reintegration, the substantiation that I give, so I trust that now. Based on those documents, I have this judgement. And someone else could come to a

			different judgement with different or the same information, but I have substantiated my judgement well and I do it with that (UWV, participant 6).
		Interpretation differences	Being able to interpret the legislation properly. That can sometimes be difficult. The way it is written. I can read something very different than you are reading this. I think this is what they mean and you think no, this is what they mean. It is the way of writing the law that makes it difficult to interpret it properly (SVB, participant 9).
	Changes in legislation	Informing about changes in legislation	The new use of CBBS was learned by e-learning. So before it was implemented, we had e-learning to get to know the new system. This was also the case for BRAVO. This is a new reporting system that was going to be used. It was nice to do an e-learning for this to get to know the new systems. But otherwise e-learning has not been used to prepare us for changes in legislation. There have also been no legislative changes in the time that I work here (UWV, participant 5).
		Impact of the change	It depends on the size. All changes are published on Paradocs and then you will automatically receive a

			message via intranet if something will be changed. Then the texts in Paradocs will be adjusted and that changes your work instruction. That is more informative learning. Until you digitally deliver something major about this change that has such an impact on the work that someone has to perform or has such an impact on the assessment process. That requires more information than just a link to the text that has been adjusted (SVB, participant 8).