

# The relationship between emotional intelligence and workplace learning: An Experience Sampling Study

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### **Abstract**

Currently the workplace environment is challenging and ever-changing. In order to adapt and to keep their job positions, individuals must continuously learn and develop their skills. The demands and decisions of organizations may cause distress in employees, which can further invoke different emotional states. Managing those emotional experiences is important, in order to further develop and to continue to learn, not only for the individuals but also for the organizations. Being able to manage one's own emotions is a part of being emotionally intelligent. The topic of workplace learning and emotional intelligence is a relatively new area of inquiry. To gain more insight an experience sampling study for five working days was conducted in order to investigate the relationship between the two constructs. Further analyses examined what kind of learning activities emotionally intelligent people engage in. The participants consisted of 33 individuals. They filled in a general questionnaire measuring emotional intelligence as a trait and consequently five daily questionnaires measuring workplace learning and the application of emotional abilities. The data was gathered in SPSS Statistics for analyses. It was found that the relationship between emotional intelligence and workplace learning is significant but not mediated by applying emotional abilities on a daily level. Furthermore, the results showed that individuals mostly learn by experiencing or doing something, by reflecting and by discussing something with others. When asked what other people were involved in the learning participants mostly indicated their colleagues. Emotional intelligence also predicted learning by reflection, but a non-significant result was found in regards to emotional intelligence and social learning. Having found mostly non-significant results, it is proposed to gather a more representative sample and execute a qualitative diary study in order to study the variables, their relationships and the factors that influence them in more depth.

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## Introduction

Society and the economy are rapidly changing and growing nowadays, employees and organizations are continuously seeking means by which to adapt to this challenging environment. Currently, the world is characterized by competitiveness and technological advancements. As the conditions always change, working individuals need to learn and develop continuously in order to not only perform well in their jobs, but to support their employment security (London & Sessa, 2006). Changes can be viewed as event triggering and emotion eliciting (Cartwright & Pappas, 2008). The positive effect of change is that people can be provided with development and growth opportunities, the negative effect is that there can be costs in having to develop new relationships, skills and patterns of activity (Kiefer, 2005). One such cost is emerging negative states and emotions. Emotions are critically important for performance and the productivity of working people (Pekrun & Stephens, 2010). If the emerging emotions are not managed they could have a negative effect on the work performance of employees.

Being able to manage one's own emotions is a part of being emotionally intelligent, the definition of the concept is "the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions" (Salovey & Mayer, 1990). Within their working environment people mostly face some challenging situations connected to interaction with others and the social environment - miscommunication, employees or employers who are not able to understand the impact of their action or inaction and problems within the organizational culture (Fernandez, 2007). People with high levels of emotional intelligence possess the ability to understand the challenging situations that occur by interacting with others, to amend them and to move forward constructively (Fernandez, 2007). For this reason, companies are currently actively seeking training in order to raise EI in employees with the aim to increase sales and improve customer service - activities, which are again connected to social interaction (Cavelzani et al. 2003). EI has been positively related with organizationally relevant behaviors, such as leadership, job performance and emotional labor (Daus & Ashkanasy, 2005). Emotional intelligence, more specifically one of the EI abilities - managing others' emotions was found to predict leader emergence and furthermore, transformational leadership was connected with the EI ability to understand emotions (Daus & Harris, 2003; Daus & Ashkanasy, 2005). In terms of job performance, research suggests that possessing EI abilities predicts job

performance for at least some types of jobs - such as customer service, retail sales and police officers (Daus & Ashkanasy, 2005). Jobs, which are characterized by high interaction with people.

### **Workplace learning**

Emotion does not only play a role in job performance, it also has an effect on the outcomes of social learning (Fineman and Sturdy, 1999; Le Cornu and Collins, 2004; Vince, 2004, as cited in Clarke, 2010). Social learning occurs when people work together to address problems and as a result there is a new collective understanding (Wals, 2007, as cited in Clarke, 2010). As previously mentioned, the workplace is a social environment and thus social learning is a part of learning that takes place at work. Workplace learning can be broadly defined as ‘multiple ways through which employees learn in organizations’ (Manuti, et al., 2015). Tynjälä (2013) summarized it as ”learning at work, through work and for work” (p.12). This type of learning is situated in the workplace environment, unlike learning in the formal educational system, which occurs in university or in school environments. The difference is that the latter is intentionally planned and consists of formal educational activities and the other is mostly informal in nature (Eraut, 2004). There are sometimes formal ways of learning, such as training courses, but mostly employees learn in more informal ways such as learning by doing and autonomously collecting other employment-related knowledge and skills (Kookken, Ley, & De Hoog, 2007). The learning at work depends upon the employee's position and on many contextual factors of the workplace environment. Additionally there are different levels of workplace learning - it can be described on individual level, group level and organizational level (Tynjälä, 2008). The review of Tynjälä (2008) summarizes some of the main activities of learning on “individual level”, thus by which individuals learn informally at the workplace: “by doing the job itself, through co-operating and interacting with colleagues, through working with clients, by tackling challenging and new tasks, by reflecting on and evaluating one's work experiences, through formal education and through extra-work contexts” (p.134).

### **Trait emotional intelligence and ability emotional intelligence**

There are two main approaches in the literature to emotional intelligence. Ability emotional intelligence, which is assessed through maximum performance methods and emotional intelligence as a trait, which is assessed through individual's self-perception of their emotional abilities (Moroń & Biolik-Moroń, 2021). Additionally, there are different models explaining emotional intelligence - personality models (trait), mental ability models and mixed ability models. Mixed ability models, which use a vast array of competencies and skills to define EI and personality (trait) models have recently received criticism because of their broad approach - including different behaviors and dispositions, which in turn questions if the concept offers any new understanding of behavior (Locke, 2005 as cited in Clark, 2011). The mental ability model was chosen for the current study because it has a narrower approach including only four abilities making it more robust - identifying, understanding, reasoning with and managing emotions. First, correctly identifying emotions within oneself and within others. For example, it is crucial that nurses correctly identify the emotions of their patients in the workplace, otherwise interventions which they chose for treatment may be inappropriate. Furthermore, they should be able to identify their own emotions, otherwise having a certain emotion towards a patient can compromise the quality of treatment (Codier, Muneno, Freitas & 2011). Second, using emotions to facilitate thinking requires using both analytical and emotional awareness simultaneously, integrating them into the work, unlike common perception of one being in the way of the other. Third, understanding emotions and finally, managing them in order to prevent them from intervening with the work (Codier, Muneno, Freitas & 2011). In addition, these abilities have been associated positively with organizationally relevant behaviors, which is why the mental ability model was chosen for this study (Daus & Ashkanasy, 2005).

In order to examine emotional intelligence abilities in the workplace context more closely, the mental ability model was adapted to assess daily level EI.

### **Experience Sampling Method**

Berngs, Doornbos and Simons (2006) concluded that the dominant instruments, which are used to study workplace learning are questionnaires and interviews. These methods are retrospective and suggest that respondents are able to accurately remember experiences, to make clear judgements on learning over a period of time (Brandstatter, 1981, as cited in

Rausch, 2014). However, learning at work is often experienced unconsciously by individuals, because it occurs alongside completing work goals and activities (Berings, Doornbos, & Simons, 2006). It is integrated into work and thus it is often difficult for people to recognize when and how it happened, moreover it is difficult for them to express what they have learnt (Rausch, 2014). As a result, with retrospective reports individuals tend to construct plausible answers (Rausch, 2012). The method of experience sampling allows measurement of learning activities and emotional abilities near real-time, which provides the advantage to overcome some downsides of retrospective questionnaires and interviews. Moreover, working people often associate the term 'learning' with the school environment (Rausch & Schley, 2011). And thus, when filling in retrospective questionnaires they might focus on special situations, in which they tried to deliberately learn something, which will leave out all the other moments, in which they have probably also engaged in learning (Rausch, 2012). Collecting data on a daily basis, close to real-time, will overcome those biases (Klumb & Perrez, 2004). Additionally, people's emotional experiences are dynamic and using emotional abilities would be captured more accurately by using a daily diary approach. This method collects data through self-reports at daily level and has been used increasingly in work and organizational research (Ohly et al., 2010).

Emotional intelligence assists workplace learning, as indicated by the study of Clark (2010), where he found that emotional intelligence is important for team learning, because it assists the processing of emotional information, which is then used for problem solving. In this study, EI also affected individuals' critical reflection, employees were motivated by how they felt in specific team experiences, and this awareness of emotions led them to further reflect upon work and learning processes. Consistently, Gosh (2012) found that EI in work teams was associated with team learning. When the team comprised of individuals with high emotional intelligence they reflected upon each other's emotions and shared learning anxieties. This created a safe environment, which benefited in productivity and better team learning. In addition, a study about organizational learning in trade shows found that emotional intelligence and trust are antecedents for organizational learning (Bettis-Outland, & Guillory, 2018).). There might also be a relationship between emotional intelligence and workplace learning on an individual level since individual learning can be also characterized as highly social activity, which requires interaction and involves reflection on past experiences and future planning of activities similar to team and organization learning (Tynjälä, 2008).

On the basis of the aforementioned previous research, the current study aims to expand inquiry in the area of EI & workplace learning by answering the following research question:

*Is emotional intelligence related to workplace learning in individuals?*

Thus, the following hypothesis were created:

*H1 - Individuals with higher emotional intelligence, on average, engage more in workplace learning than individuals with lower emotional intelligence.*

*H2 - The relationship between emotional intelligence and workplace learning and mediated by the application of EI abilities.*

Experiences that stimulate critical reflection are connected to feelings and emotions (Damasio, 1994, as cited in Clarke, 2010). Thus, when engaging in reflection those attached emotions surface. In order to derive meaning and learning from the experience through reflection, individuals should first manage, understand and work through those emotions (Clarke, 2010). As a result, the present study hypothesizes that people with higher levels of emotional intelligence will learn more through reflection because they will be able to understand and manage the surfacing emotions more effectively than individuals with lower levels of emotional intelligence.

*H3 - Individuals with higher emotional intelligence, on average, learn more often by reflection than individuals with lower emotional intelligence.*

Caruso and Wolfe (2001) suggest that emotional intelligence can be a basis or it can be responsible for people's ability to engage in social interaction. Thus, it is hypothesized that people possessing higher levels of emotional intelligence would engage more in social interaction and furthermore, learn more through this engagement with others.



*H4 - Individuals with higher emotional intelligence, on average, learn more often by social interaction than individuals with lower emotional intelligence.*

## **Method**

### *Design*

A questionnaire survey design was employed, exploring the levels of emotional intelligence of working individuals as a trait. Following, an experience sampling method was employed measuring the learning activities and the application of emotional intelligence abilities on daily level of the same participants in the course of five working days.

### *Participants*

The study comprised a sample of 33 (see Table 1) working individuals ranging mainly from the age 21 to 40 (female: 57.6%, male: 42.4%). 2 participants were Dutch, 30 were Bulgarian and one was of different nationality. 11 of the participants indicated their highest completed level of education as Bachelor's degree, 14 individuals had completed a Master's degree and 7 had acquired a High-school diploma.

All of the respondents participated voluntarily. The participants were collected by inviting them to participate via online platforms such as Facebook, LinkedIn etc. and through snowball sampling, thus the sample was a convenience sample. People were informed in the beginning of the research that they can only participate if they are currently employed, others who did not match this inclusion criteria were instructed to withdraw. Furthermore, participants were included in the study only if they had 3 measurements or more, thus if they had filled in the daily questionnaire less than three times, they were excluded from the sample. This exclusion criteria was based on the study of Scollon, Prieto & Diener (2009), in which they found that in order to achieve stability of measures, three days of daily diary data is required. In the beginning of the research, all participants had to agree to a written consent form (Appendix A). The study was approved by the ethical committee of the Behavioural & Management Sciences faculty of the University of Twente. All participants had to

**Table 1***Demographics of the participants.*

Characteristics	n	%
<b>Gender</b>		
Male	14	42.4%
Female	19	57.6%
<b>Age</b>		
20 years or younger	1	2.4%
21-30	15	43.9%
31-40	7	26.8%
41-50	5	14.6%
51-60	3	7.3%
60 years or older	2	4.9%

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*Note.*  $N = 33$ .

*Materials*

The participants of the study were asked to fill in the first questionnaire, which was created via “Qualtrics”. It measured emotional intelligence as a trait on a person level with the Wong and Law Emotional Intelligence scale (WLEIS). Wong & Law used the conceptualization of Salovey and Mayer (1990) to form this 16 item scale and it is one of the most widely used to measure EI (Kong, 2017). The items can be answered by using a five-point Likert scale (1 = “Strongly Disagree” to 5 = “Strongly Agree”). They are categorized into the four emotional intelligence abilities - self-emotion appraisal, others emotion appraisal, use of emotion, regulation of emotion. One example of these items is “I am a good observer of others’

emotions.”. EI trait on person level was calculated as a mean score of all five daily questionnaires of each participant.

Following, the participants were asked to fill in for five working days a daily diary study, which was created again via Qualtrics. The questionnaire measured workplace learning activities and daily emotional intelligence abilities. The Learning Moments app (Endedijk, 2012) was adapted and used for measuring the learning activities working individuals engage in. Two of the items were used in the study (Appendix B). They were chosen in order to get a general understanding of participants' workplace learning activities - what types of activities they learned through and if somebody else was involved in the learning experience. One example of an item is “Choose the activity/activities through which you learned. I learned by...?”. The first four items measure if participants learned during the day and what they learned. One example of an item is “Today I learned from my work. (Likert 1-5)”. The scores for learning moments were calculated as a mean score of item 2 (Appendix B) of the 5 daily questionnaires. For learning through reflection, the scores were calculated by dividing the number of times respondents learn through reflection with the number of times they reported a learning moment. The scores for learning through social interaction were calculated in the same manner.

Furthermore, an adaptation of the previously mentioned WLEIS scale was used to measure people's use emotional intelligence abilities on daily level (Appendix B). The questions were rephrased in order to apply to participants' daily experiences, one example of these items is “Today I had a good sense of why I was having certain feelings”.

### *Procedure*

The questionnaires were constructed in Qualtrics, the first one contained 25 items in total and took approximately five to ten minutes for the participants to fill out, the second one contained 11 items and took 5 min daily. After the study was approved by the ethical committee, the participants were recruited. An electronic link which led the participants to the website Qualtrics was used to assess the questionnaire. To find participants devices such as social media sources like Facebook and Instagram and snowball sampling were used. Moreover, people in the researcher's environment were personally, or by email invited to participate. When the participants used the link to open the questionnaire, they were first welcomed and shortly informed about the topic, confidentiality and anonymity of the study.

Furthermore, they were informed that they could withdraw from the study without any consequences at any time and then they were asked to give their informed consent for the study. After the informed consent was given, the participants had to answer questions regarding their demographic data, for instance, age, gender and nationality: Afterwards, the questionnaire about EI as a trait began. Here, the participants needed to answer each question. If they forgot one answer, Qualtrics automatically reminded them to give an answer and the participants could not continue until an answer was given to every question. The second questionnaire was sent by mail or phone (using WhatsApp) which were provided by the participants in the first questionnaire. Everyday they received the same questionnaire in the afternoon around 17 o'clock.

### **Data Analysis**

After the data collection was finished, the data was transferred in IBM SPSS Statistics 26 for further analysis. The first step was to scan the data for possible mistakes or missing values. It showed that 4 out of 60 participants did not finish the general questionnaire, they and one additional participant who named “motherhood” as their profession were excluded from the study. Participants who filled in the general questionnaire but did not start the daily assessments were excluded as well as participants who had less than 3 measurements as this was an exclusion criteria, which made the final sample of 33.

Furthermore, the data from every questionnaire of the daily assessments was scanned and cleaned separately before all questionnaire data was merged. Questionnaires which were partly completed were excluded, some had filled in a daily questionnaire twice, thus the data was also screened for duplicate responses. These values of the participants would distort the data, thus they were excluded before further analyses.

Next, from the data of the general questionnaire the total scores of Emotional Intelligence as a trait were calculated. After that the data of the 5 daily questionnaires was merged into one dataset. The total scores for emotional intelligence ability on daily level were calculated as a mean score for every day. Further the scores were aggregated into mean scores on person level. To calculate workplace learning, total scores were aggregated from the daily ratings of the statement “Today I learned from work” on a Likert point scale.

Having estimated total scores on person level for emotional intelligence as a trait, emotional intelligence abilities application and workplace learning, the data was ready for mediation analysis. First, to get an overview of the data, descriptive statistics were performed to estimate the mean, standard deviation, maximum and minimum. Skewness and Kurtosis were computed to check the normality of the data.

To perform a mediation analysis SPSS PROCESS macro was further used.

This computational procedure includes bootstrapping - a method in which a part of the dataset is selected thousands of times to increase the statistical power in order to compensate for the small sample size (Field, 2018).

Finally, two linear regression analyses were performed to assess whether EI predicts the way participants learn.

## Results

The results computed with IBM SPSS Statistics 26 are presented below. First, general descriptives are displayed, followed by a simple linear regression and further mediation analysis computed with SPSS PROCESS between EI trait and workplace learning, EI ability application as a mediator. Finally, two linear regression analyses are presented with the EI trait as an independent variable and learning through interaction and learning through reflection as dependent variables.

### Descriptive Statistics

Around half (56.1%) of the study population identified as female and the others as males (43.9%) (see Table 1). Based on the scale 1-5, it can be expected that individuals scoring 1-2 have low levels of EI and low application of EI abilities on daily level, consequently scoring 3 would mean an average level and scoring 4-5 would mean high levels of the constructs. The participants' mean score on EI trait and EI ability application were high. All of the scores of the study sample were between 3-4, which indicated average to high levels of emotional intelligence. The mean score for Workplace Learning can also be viewed as average (see Table 2). The mean scores of the constructs were approximately normally distributed. A correlation matrix shows the relationship between all the variables in the study, indicating a significant relationship between workplace learning and EI trait, WL and learning by reflection and EI trait and learning by reflection (see Table 3). Overall, participants mainly learned through experiencing or doing something, through reflecting and through discussing something with others (see Table 4). When others were involved in the learning activities of the participants, it was mainly a colleague from their workplace/organization or secondly, a client or a customer (see Table 5).

**Table 2**

*Means, standard deviations, and minimum and maximum scores.*

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	Mean	SD	Minimum	Maximum
EI Trait	4.04	.424	3.06	4.69
EI Ability	4.03	.503	3.09	4.78
WL	3.56	.914	1.33	5.00
RL	.373	.367	.00	1.00
RS	.923	.923	.50	1.00

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**Table 3**

		WL	EIAbility	EIttrait	LR	LS
<i>Correlations</i>						
WL	Pearson Correlation	1	.249	.348*	.375*	-.143
	Sig. (2-tailed)		.163	.047	.041	.451
EIAbility	Pearson Correlation	.249	1	.737**	.354	-.194
	Sig. (2-tailed)	.163		.000	.055	.304
EIttrait	Pearson Correlation	.348*	.737**	1	.440*	-.040
	Sig. (2-tailed)	.047	.000		.015	.835
LR	Pearson Correlation	.375*	.354	.440*	1	-.122
	Sig. (2-tailed)	.041	.055	.015		.521
LS	Pearson Correlation	-.143	-.194	-.040	-.122	1
	Sig. (2-tailed)	.451	.304	.835	.521	

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).



**Table 4***Frequencies of Learning Activities*

	N	Percent
Experiencing or doing something	54	20.4%
Experiencing or testing something new	31	11.7%
Reflecting on my work experiences	39	14.7%
Looking up information (book,internet)	29	10.9%
Observing how others did something	29	10.9%
Discussing something with others	39	14.7%
Seeking help or information from others	32	12.1%
Participating in a workshop, training or course	11	4.2%
Other	1	0.4%

**Table 5***Frequencies of others involved in the learning activity*

	N	Percent
A colleague from my workplace/organization	54	35.3%
A colleague outside my workplace/organization	21	13.7%
My superior	22	14.4%
A customer, client or user of my product or service	29	19.0%
Other	4	2.6%
No other people were involved	9	5.9%

### Mediation Analysis

Before conducting the mediation analysis a simple regression analysis was employed to test the relationship between EI trait as a predictor and workplace learning as an outcome variable. The effect was found to be significant ( $R^2 = .121$ ,  $F(1,31) = 4.260$ ,  $p = .047$ ).

For the hypothesis that application of EI ability mediates the relationship between EI trait and Workplace learning, the total effect of the predictor (EI trait) on the outcome (Workplace learning) was tested. The effect of EI trait on EI ability was found to be significant ( $b = .832$ ,  $t = 6.070$ ,  $p = .000$ ). The effect of the mediator on the outcome variable was non-significant ( $b = -.033$ ,  $t = -.065$ ,  $p = .144$ ). The mediation hypothesis was tested and the results show that it is non-significant, with the direct effect ( $b = .805$ ,  $t = 1.421$ ,  $p = .165$ ) and an indirect effect ( $b = -.027$ ). The analyses showed that controlling the mediator application of emotional abilities does not account for the relationship between EI trait and workplace learning.

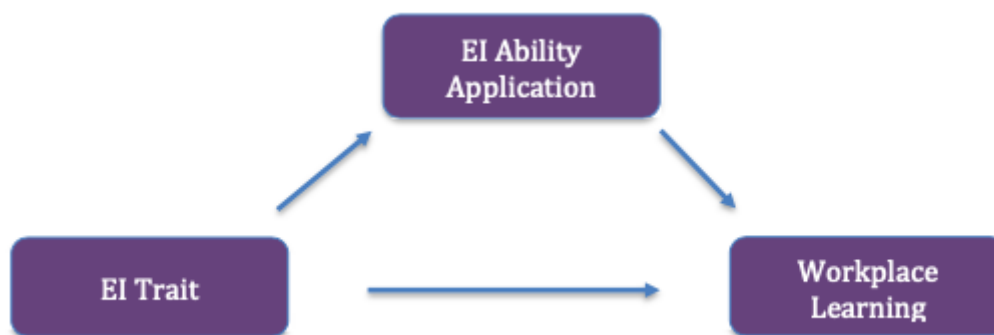


Figure 1. Diagram of Mediation Model

### Regression Analyses

A regression analysis was performed in order to investigate the relationship between EI trait and learning through reflection. The analysis revealed that the relationship is positive and significant ( $R = .440$ ,  $F(1,17) = 2.364$ ,  $p = .015$ ). Furthermore, second regression analysis was performed with EI trait as predictor and learning through interaction as an outcome variable. The results again indicate a non-significant relationship ( $R = .000$ ,  $F(1,26) = .004$ ,  $p = .950$ ).

## Discussion

The purpose of the study was to investigate the relationship between emotional intelligence and workplace learning in employees. More specifically, it additionally examined whether individuals with higher levels of EI as a trait engage more in learning through reflection and learning through interaction. It was tested whether the application of emotional intelligence abilities on daily level mediate the relationship between EI Trait and WL. The results indicated non-significant relationships, only workplace learning and learning through reflection were predicted by emotional intelligence as a trait.

The first hypothesis proposed that *Individuals with higher emotional intelligence, on average, engage more in workplace learning than individuals with lower emotional intelligence*. The results were positive and significant, which confirms the hypothesis. These findings also support studies which found that EI affects team and organizational learning (Clark, 2010; Gosh, 2012; Bettis-Outland, & Guillory, 2018). Other studies also suggest that emotion influences many processes of social learning at work (Fineman and Sturdy, 1999; Le Cornu and Collins, 2004; Vince, 2004, as cited in Clarke, 2010). For future research it is of interest to explore both variables and how they interact on a daily level throughout a longer period of time in a qualitative daily diary, which would prove a more in depth findings.

The second hypothesis proposed that *The relationship between emotional intelligence and workplace learning is mediated by the application of EI abilities*. The findings showed that the relationship between EI trait and workplace learning is not mediated by the application of EI abilities, which contradicts the hypothesis.

The third hypothesis proposed that *Emotional intelligence predicts learning by reflection*. Possessing high levels of emotional intelligence was found to predict learning by reflection. This implies that individuals are able to derive meaning from experiences and at the same time understand and deal with the emotion attached to these experiences (Clarke, 2010). When hiring, organizations could use EI trait tests in order to keep in mind high levels of EI as an advantage in employees. Hiring more employees with high EI would not only have an effect on workplace learning, but on effectiveness, job performance and leadership

(Daus & Ashkanasy, 2005). Further research could place a greater focus, by using a qualitative diary method, on how exactly EI influences reflection and learning, and what contextual factors play a role in the relationship.

Consequently, the fourth hypothesis proposed that *Emotional intelligence predicts learning by social interaction* and was found to be non-significant. This contradicts what was expected on the basis of the conclusion that EI can be responsible for people's ability to engage in social interaction (Caruso & Wolfe, 2001) and thus individuals might learn more through this engagement with others. Furthermore, the study of Clarke (2010) indicated that people engage in emotional management in order to facilitate social interaction. Because his study was a qualitative daily diary it explored the concepts in a greater depth, which could have been a limitation of the current study. It is suggested for future research to study the relationship of EI and learning by social interaction to see how the concepts interplay and what are the factors that might influence them.

Some of the limitations of the research which could account for the non-significant results are mainly concerning sample size and the collection of the data. One shortcoming is the small sample size of the study with only 33 participants. Furthermore, the participants were mainly Bulgarians, which can also be a potential shortcoming since the target group was working individuals in general. They were recruited from the social network of the researcher, which is also not representative of the general target group. The scores on EI were also very similar, all scoring around 3-4 which could be again due to the way they were recruited and only being from one nationality and social network. Having a more representative and bigger sample could provide a more accurate interpretation of the results, bigger diversity in terms of EI levels and possibly account for significant findings. Furthermore, by using experience sampling self-reports participants may have been biased by culture norms and social desirability leading to possible biased results (Scollon, Kim-Prieto, & Diener, 2003). Self-rated measures of EI are suggested to be weak predictors of EI since they are based on people's perceptions, which are not always accurate. Moreover, the level of EI that people possess may have an effect on their self-reports, for example individuals low in EI could lack metacognitive skills to report on their EI (Brackett et al., 2006). Also, individuals might not feel comfortable reporting how they are able to deal with their emotions.

One strong point of the study is using an experience based sampling method for the measurement of workplace learning and the application of emotional abilities. This way the data is more free from retrospective bias when it is measured near real-time rather than with a

single retrospective questionnaire (Rausch, 2012). The present study also focused on less explored measurement of EI and the topic of EI and Workplace learning.

It is suggested for future research to replicate the study amongst bigger and more representative sample sizes. Recruiting people from different nationalities and backgrounds. Furthermore, to extend the daily diary to a larger span might provide more meaningful data about the learning activities and emotional abilities individuals apply daily.

The current research contributes to the growing research on emotional intelligence and workplace learning. Previous research focused on EI and specific aspects of workplace learning as for example learning on a team level (Clark, 2010; Gosh, 2012; Bettis-Outland, & Guillory, 2018). This study approached the concept of learning at the workplace more broadly, asking employees to report any instance of learning, in a team, as an individual or with another employee/supervisor. This allowed a more general view of the relationship between EI and workplace learning and contributed to the current growing body of literature. For future research, it would be interesting to investigate if the relationship is mediated by different variables as for example emotion regulation (Bucich, & MacCann, 2019) and additionally to replicate the study with mediator EI ability but rather with a more representative sample. Furthermore, the different abilities of EI (recognizing, understanding, reasoning and managing) can be separately explored in connection to workplace learning activities.

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## Appendices

### Appendix A

#### Consent Form General Questionnaire

Welcome to this research study!

The study explores workplace activities and abilities. Working people often associate learning with the school/university environment, however learning occurs almost all of the time at work as well. It can be highly unconscious and it happens through various activities, for example when you learn a new skill from a colleague by observing or you experience new situations which require problem solving.

The target group of the study is working individuals, thus if you are not currently employed, please withdraw from the research.

This study will start with a more general questionnaire, which will take around 5-10 minutes. Following that, you will receive a short questionnaire for 5 working days, after work, to answer some questions about that day.

Please be assured that your responses will be kept completely confidential and your phones and emails will be only used for purposes of the study and afterwards deleted.<sup>[1][2][3]</sup><sub>[SEP][SEP]</sub>

Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the Investigator in the study to discuss this research, please email

a.stoynovski@student.utwente.nl.<sup>[1][2]</sup><sub>[SEP]</sub>

By clicking "I consent", you acknowledge that your participation in the study is voluntary and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

- I consent
- I do not consent

**Appendix B**  
**General Questionnaire**

1	<b>What is your age?</b> 20 years or younger; 21 - 30; 31 - 40; 41 - 50; 51 - 60; 60 years or older
2	<b>What is your nationality?</b> German; Dutch; Bulgarian; Other
3	<b>What is your gender?</b> Male; Female; Non-binary / third gender; Prefer not to say
4	<b>What is your highest completed level of education?</b> High-school; Bachelor's degree; Master's degree; Doctorate / PhD; Other
5	<b>What is your work occupation?</b>
6	<b>For sending the daily questionnaires, we would like to know which days of the week you work. If you do not work from Monday through Friday, please indicate which days you work by selecting the "Other"-option and typing in your workdays.</b>  Monday - Friday; Other
7	<b>Please indicate by which platform you want to receive the daily questionnaires for the next working week.</b> Whats app (Please fill in phone number); E-mail (Please fill in)
8	<b>In order to combine your responses from the daily questionnaires we would ask you to fill in the last three digits of your phone number in every entry.</b>  Please fill them in here...
	Please proceed with the general questionnaire.

	<b>WLEIS - Likert scale - (1-5)</b>
1	I have a good sense of why I have certain feelings most of the time.
2	I have good understanding of my own emotions.
3	I really understand what I feel.
4	I always know whether or not I am happy.
5	I always know my friends' emotions from their behavior.
6	I am a good observer of others' emotions.
7	I am sensitive to the feelings and emotions of others.
8	I have good understanding of the emotions of people around me.
9	I always set goals for myself and then try my best to achieve them.
10	I always tell myself I am a competent person.
11	I am a self-motivated person.
12	I would always encourage myself to try my best.
13	I am able to control my temper and handle difficulties rationally.
14	I am quite capable of controlling my own emotions.
15	I can always calm down quickly when I am very angry.
16	I have good control of my own emotions.
	<b>Thank you for filling in the general questionnaire! :)</b> <b>On your next working day, Questionnaire Day 1 will be sent to you.</b>

## Appendix B

### Daily Questionnaire

	<p><b>Hello,</b></p> <p><b>Thank you for taking part in Day 1 of this 5 day Daily Diary Study.</b></p> <p><b>The following questions will take only 5 minutes of your time.</b></p>
1	Please fill in the last three digits of your phone number.
2	Today I learned from my work. (Likert 1-5)
3	Can you recall something that you learned today from work? (Yes/No)
4	What did you learn from work?
5	<p>Choose the activity/activities through which you learned.</p> <p>I learned by... (multiple answers possible)</p> <ul style="list-style-type: none"> <li>-experiencing or doing something</li> <li>-experimenting or testing something new</li> <li>-reflecting on my work experiences</li> <li>-looking up information (book, internet)</li> <li>-observing how others did something</li> <li>-discussing something with others</li> <li>-seeking help or information from others</li> <li>-participating in a workshop, training or course</li> <li>-other</li> </ul>
6	<p>What other people were involved in this activity?</p> <p>(Multiple answers possible)</p> <ul style="list-style-type: none"> <li>-A colleague from my workplace/organisation</li> <li>-A colleague outside my workplace/organisation</li> <li>-My superior</li> <li>-A customer, client or user of my product or service</li> </ul>

	-Other -No other people were involved
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<b>Daily Application of EI Adapted from WLEIS (Likert - 1-5)</b>	
	<b>Think about your experiences during the day when answering the next questions.</b>
8	Today I had a good sense of why I was having certain feelings.
9	Today I had a good understanding of my emotions.
10	Today I really understood what I felt.
11	Today I was aware when I was happy and when I was not.
12	Today I was sensitive to the feelings and emotions of others.
13	Today I had a good understanding of the emotions of people around me.
14	Today I encouraged myself to try my best.
15	Today I was able to control my temper and handle difficulties rationally.
16	Today I was in control of my emotions.
	<b>Thank you for filling in today's questionnaire!</b>