Performance and Recovery Through Micro-Breaks: The Interventional Effects of Self-Regulated Micro-Breaks on Performance, Mindfulness, Fatigue, and Stress

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Executive Summary

The present research was administered in collaboration with the mindfulness department of a German automobile corporation. As the ever-growing demand for productivity increases, stress and fatigue are common barriers to performance and can negatively impact health and well-being. To reduce stress and fatigue levels while simultaneously improving performance, a micro-break intervention workshop was designed by the author. Micro-breaks are informal work interruptions that can last anywhere from a few seconds to a few minutes. These breaks are voluntary and therefore taken at optimal opportunities. Past research has proven its effectiveness in reducing daily fatigue and stress, as well as increasing mindfulness and performance. However, a workshop intervention study focusing on employee's empowerment to self-regulated micro-breaks within the work field was not done so far.

In detail, the effectiveness of the workshop on an increase in taking micro-breaks, improvements in performance and mindfulness, and a reduction of stress and fatigue was tested. The experimental design included a pre-questionnaire before the intervention and post-questionnaire four weeks after the intervention. Participants were constituted of an intervention (N= 36) and waiting list control group (N= 37). The investigated outcome variables were micro-break taking, performance, mindfulness, fatigue, and stress. To analyse the workshop's effectiveness, the statistical analysis repeated measures MANOVA (multivariate analysis of variance) was executed.

Findings could not support the effectiveness of the intervention. Therefore, it is suggested to repeat the intervention in an optimized, longer, more individual manner, including leadership positions and structural changes. Proposed structural changes include structural gaps between meetings through having the duration of meetings by default at 25 or 55 minutes or making break

taking obligatory. In addition, it is recommended to provide designated areas or spaces at the workplace where employees can take their micro-breaks comfortably and establish micro-break routines. With that, opportunities can be provided for more productive and healthier employees, and a reduction in absenteeism and presenteeism costs can be established.

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Abstract

Effectively targeted self-regulated micro-breaks have been shown to reduce common hindering factors for work productivity: fatigue and stress. Micro-breaks are informal work interruptions that can last anywhere from a few seconds to a few minutes. According to previous studies micro-breaks have positive outcomes on well-being and performance. The present study investigated the effects of a virtual, two-hour-long micro-break workshop intervention on micro-break taking, performance, mindfulness, fatigue, and stress. The experimental design included a pre-questionnaire before the intervention and post-questionnaire four weeks after the intervention. Participants were constituted of an intervention (N= 36) and waiting list control group (N= 37). The results of the statistical analysis repeated measures MANOVA could not support the effectiveness of the intervention. Limitations are time constraints and bounded possibilities for structural and long-lasting behaviour changes. It is suggested to repeat and optimize the intervention in a longer, more individual manner, including leadership positions and structural changes.

Keywords: Mindfulness, work breaks, micro-breaks, energy management strategy, performance, productivity, stress, fatigue, well-being

When was the last time you took a short break during working hours? How did you feel before? How about after the break? Breaks from work can take various forms, including sabbaticals, vacations, lunch breaks, or very short micro-breaks lasting only a few seconds. In general, taking breaks from work was shown to be imperative. Taking breaks leads to increased recovery, reduced exhaustion, fewer accidents, increased productivity, and improved cognitive performance and well-being (Fritz et al., 2013; Packer, 2021; Tucker, 2003).

Theoretically, breaks are supposed to restore energy resources that have been depleted through working. Hobfoll's (1989) Conservation of Resources (COR) theory assumes limited resources exists to conquer various life demands until the resources are exhausted. Work demands and stressors dissipate those resources. Breaks and other energy restorative activities can recover those resources and reverse adverse health effects of stress (Kim et al., 2017).

The effort-recovery model (ERM) stresses the importance of activities that facilitate restoration of the mind and body, such as short recovery breaks while at work. Resting helps to recuperate those experiencing cognitive and emotional work fatigue and can restore baseline functioning. Recovery allows avoidance of detrimental effects of work stressors. If resting is delayed, however, resources can become too depleted and hinder proper restoration. Hindered recovery can in turn impair mood and lead to fatigue and burnout (Albulescu et al., 2022).

Micro-breaks

To ensure regular recovery, micro-breaks may be a useful strategy. Micro-breaks are voluntarily taken, informal work interruptions, lasting a few seconds up to a few minutes (Albulescu et al., 2022). Micro-breaks can be classified as an energy management strategy (EMS) that aids in recovery from the negative consequences of continued working (Bosch &

Sonnentag, 2019; Kim et al., 2018). As micro-breaks are taken voluntarily and shorter, they are distinguishable from institutionalized breaks like lunch or other formally scheduled breaks. Experiments on micro-breaks could demonstrate reductions in stress and cognitive exhaustion but also improved concentration, reduced fatigue and increased overall performance (Albulescu et al., 2022). Overall, it was demonstrated that short breaks of approximately ten minutes alleviate fatigue and therefore energize, but also boost the subjective and perceived performance and can be seen as a panacea for well-being during worktime (Albulescu et al., 2022).

Important to consider are also the different types of micro-breaks. Surveys on full-time employees showed that micro-breaks that involved relaxation, socialization, and cognition without nutrition intake predicted more positive affect and therefore better performance (Kim et al., 2018). Like a correlational study by Trougakos and Hideg (2009) investigated, other kinds of micro-breaks such as completing chores, appear to be restorative for some people depending on the enjoyment of the specific task. Another study tested the impact of 40 seconds of watching a green rooftop compared to a concrete roof. University students that watched the green rooftop made significant lower omission errors and showed more consistent responding in comparison to the control group (Lee et al., 2015). Also, other really short breaks like taking a few deep breath, were shown effective, as demonstrated in an experiment, which examined the improved performance (Khng, 2017). An intervention on police offices listening to their favorite music demonstrated also reductions in fatigue and stress (Kim & Kim, 2017). Another study by Hopfer et al. (2023) proved that a five-minute body scan intervention increased state mindfulness. Additionally, experiments on park walks have shown to improve concentration and reduce fatigue (Sianoja et al., 2018). An experiment involving pet interaction also showed that short breaks consisting of cuddling or caring for one’s dog or cat led to improved recovery and daily

task-and-adaptive performance (Junça-Silva, 2022). Overall, various types of breaks were proven successful in increasing performance and mindfulness and decreasing fatigue and stress. The following sections will discuss the relevance of micro-breaks for these variables in more detail.

Performance

As has been demonstrated, micro-breaks are highly influential on an increase in performance (Albulescu et al., 2022; Hennfng et al., 1989; Kim et al., 2018). In today's corporations, one of the most critical drivers for success is their employees and their productivity. Therefore, performance is also appraised as the ultimate criterion in human resource management (Organ & Paine, 1999). In the context of this work, efficient work behavior is defined as energized, focused and task-completing. Inefficient working, however, is suggested to be related to fatigue and stress (Michie, 2002; Shigihara et al., 2013). Task performance being a subvariant of performance will be used to measure the influence of micro-breaks on work achievements (Wendsche et al., 2016).

Mindfulness

The growing appreciation for the benefits of mindfulness in corporations can be seen in companies like SAP and Google, having departments that focus solely on training their employees in mindfulness (Greiser & Martini, 2018). Mindfulness is a non-religious, non-judgmental practice of awareness of the present moment and has been proven to enhance daily employee performance, health, and wellness (Aránega et al., 2020; Hilton et al., 2019). Many of the micro-break options discussed in the workshops are based on mindfulness and therefore expected to increase mindfulness state (Díaz-Silveira et al., 2020). There is a growing body of research and relevance in western society for mindfulness, with promising results in reducing stress and improving performance (Shonin et al., 2014).

Fatigue

Following the proposed ERM and COR, using up recourses through work will lead to fatigue (Hobfoll, 1989). Fatigue is defined as tiredness, lack of energy, and exhaustion due to prolonged mental or physical work. It can impair work performance by hindering one's ability to remain focused and productive, but also in the sense that fatigued workers are more prone to accidents or dangerous errors (Sadeghniiat-Haghighi & Yazdi, 2015). In a study by Zacher et al. (2014) micro-breaks were used as an EMS and negatively predicted fatigue and positively predicted vitality. In alignment with the named theories, micro-breaks have been shown to allow recovery that reduces fatigue (Albulescu et al., 2022; Zhu et al., 2019).

Stress

Stress, a normal response to life, can be described as the feeling that arises when we must react to a demand for our energy. It accompanies positive and negative changes in our life (Bickford, 2005). Stress is highly related to employee health (Ganster & Rosen, 2013), increases mistakes (Khayyer et al., 2014), and reduces creativity. Mindfulness-based micro-breaks can reduce stress (Díaz-Silveira et al., 2020), but other forms of breaks have also been shown to decrease stress. For example, one experimental study demonstrated that seven minutes of listening to nature sounds reduced muscle tension (Largo-Wight et al., 2016). Another study compared outdoor to indoor work breaks. Both reduced perceived stress, but the outdoor breaks reduced stress significantly more (Largo-Wight et al., 2017).

Long breaks are vital, but sometimes not feasible. Effectively taken micro-breaks may be the solution to integrate recovery at work when there is little to no time for longer breaks. This applies especially if breaks are taken when needed and not as reward or procrastination. However, studies among a broad range of regular working full-time employees demonstrated

that most breaks are not taken when those signals for the need of recovery occur, but rather when one wants to reward oneself or does not like the task (Bosch & Sonnentag, 2019). Research showed that loss of focus, stress, and fatigue function as signals for the need of a break. These signals are quite common, with 60% of the tested employees reporting being tired and having problems focusing because of fatigue, and 63% report being stressed at work (Berez, 2019; presseportal.de, 2021). On the other hand, several barriers hinder employees from taking recovering micro-breaks. A pre-study through a Design Thinking (Plattner et al., 2010) workshop with employees in the intervention organization could pinpoint three main barriers that are supported by the so far presented findings from studies by Berman and West (2007) and Gilson et al. (2011). One reason that employees mentioned is that they do not feel safe taking breaks and are afraid of the looks and judgement of other employees. In addition, they need help prioritizing breaks compared to tasks that need to be done, especially when other colleagues depend on them to finish those tasks. Lastly, a schedule fully packed with appointments leads to lack of time even for short breaks.

So far, no study has demonstrated the effects of a work-field intervention that aims to tackle specifically these challenges and is targeted on empowering the employees to take self-regulated, efficient micro-breaks. Moreover, an important difference to the present study is that previous studies tested for benefits of various breaks with externally and not self-initiated breaks.

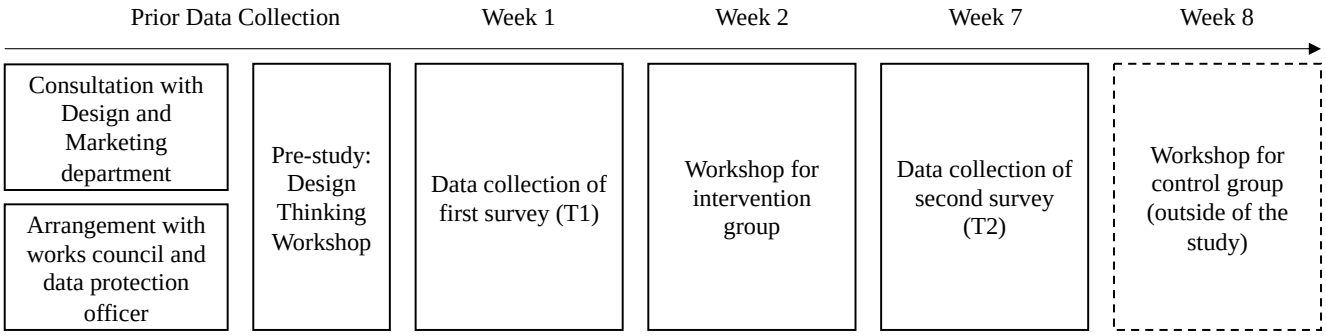
The Present Research

With an ordinary working day consisting of multiple appointments, e-mails, deadlines and operational work, many employees within a German automobile organization struggle with symptoms of stress and fatigue. Employees of the corporation have problems focusing on their work, as demonstrated in a pre-study (Appendix A). Increasing employee well-being through the

reduction of stress and fatigue while increasing productivity benefits for both the employee and the company. The insights gained through this work can therefore also be used in follow-up interventions, and the intervention could be offered in other departments. This intervention aims to improve EMSs to take self-regulated micro-breaks efficiently while reducing absenteeism and presenteeism costs.

Figure 1

Study Design



Manipulation check (M1)

To test the overall effectiveness of the intervention, a manipulation check was included which tested the amount of taken micro-breaks. It was expected that participation in the micro-break workshop is linked to taking more self-regulated micro-breaks during work time.

Hypotheses (H1-H4)

Corresponding to the manipulation check the effects of the intervention will be measured and the following hypotheses have been formed:

1. Taking self-regulated micro-breaks leads to an increase in performance (Albulescu et al., 2022; Kim et al., 2018)

2. Taking self-regulated micro-breaks leads to an increase in mindfulness (Chong et al., 2020; Díaz-Silveira et al., 2020; Jamieson & Tuckey, 2017)
3. Taking self-regulated micro-breaks leads to a decrease in work stress (Chong et al., 2020; Kim et al., 2022)
4. Taking self-regulated micro-breaks leads to a decrease in fatigue (Albulescu et al., 2022; Zacher et al., 2014)

Method

Pilot study: Design Thinking workshop

For better understanding of the current situation in the automotive corporation and the employees' needs, a pilot study in the form of a Design Thinking workshop was administered (Plattner et al., 2010). A group of 16 employees were invited to give insights about their EMSs in daily work life. They were asked to provide examples of signals they used to identify when a break was needed and specifically what breaks they performed. In addition, they wrote down aiding and hindering factors of taking breaks and made the distinction between home-office and office. The results of the pilot study can be found in Appendix A. Insights from employees in the corporation about barriers to micro-breaks and their kind of micro-breaks improved the quality of the main intervention.

Main study

The author created and administered the workshop as part of the corporation's mindfulness department. From a power analysis it was concluded that with a medium effect size of 0.25 and a power of 0.8, a total sample size of at least 48 participants was required. Considering attrition, 480 employees were invited with the goal of attaining at least 100 study participants.

Participants

To recruit participants, the workshop's scope was proposed to several departments via email. Two departments offered their employees participation. One department was chosen as the participation group, and another as the waiting list control group. Each employee could voluntarily sign up for one suitable workshop date and participation was under consent without a reward. Every respondent received a link to the questionnaire and the workshop via mail. The workshop was given during regular working hours and no costs for the participants were involved.

In total, 62 employees signed up for the study. 37 participants answered the first survey, from which 19 belonged to the intervention group and 18 to the control group. After 4 weeks, 30 employees answered the second survey, from which 12 belonged to the intervention group and 18 to the control group.

Procedure

Following the corporate-specific procedure, the research was approved by the works council and an internal data security officer. Following the corporate policy, an external provider, sent the questionnaire. A week before the workshops, participants received a link to the first questionnaire (T1) via their work e-mail. The link could only be accessed up until one day before the workshop started. To provide anonymity but still allow for a connection of the questionnaires, the external questionnaire provider used a tool that assigned an individual code to each participant.

The second questionnaire (T2) was sent four weeks after the workshop and needed to be answered within a week. For anonymity reasons, demographic data was not collected. All items were in German. The author translated the fatigue and performance items, applying a translation-

back translation procedure (Brislin, 1970). A template of the complete questionnaire used can be found in Appendix B.

Measures

To investigate the present hypotheses, a survey with 35 items in the first questionnaire and 51 items in the second questionnaire was compiled. The second questionnaire was longer as it included more specific questions regarding micro-breaks, though they were not mandatory to be answered. Specifically, it asked what micro-breaks were executed and how long they lasted. The participants were asked to base their answers on the past month's experience. The detailed questionnaire can be found in Appendix B.

Micro-breaks

The manipulation check consisted of the statement “I take micro-breaks” and was measured on a 7-point Likert scale ranging from 0 (less than once per week), 1 (once per week), 2 (several times per week), 3 (daily), 4 (two times per day), 5 (three times per day) to 6 (more than three times per day). In T2, additional questions for specific types of micro-breaks were added. One example is “I do the micro-break *going for a walk*”.

Performance

Task performance being one of the three main dimensions of job performance can be measured with five items of the Individual Work Performance Questionnaire (Fernández-del-Río et al., 2019). The dimension was shown to exhibit internal consistency, internal validity, and discriminant validity. The original items for task performance were shown to have a composite reliability of 0.91 and adequate factor loading. The items, which were translated by the author from English to German, consist of a 5-point Likert scale rating ranging from 0 (seldom) to 4 (always). They have a recall period of the last four weeks as this was the intervention timeframe.

An example item is “I managed to plan my work so that I finished it on time” (Fernández-del-Río et al., 2019; Jakada et al., 2020; Koopmans et al., 2011).

Mindfulness

Mindfulness was measured with the German version of The Mindful Attention Awareness Scale (MAAS). The 15 items consisted of a 6-point Likert scale rating ranging from 1 (almost always) to 6 (almost never) and were measured to constitute an internal consistency of 0.83. An example item is: “I could be experiencing some emotion and not be conscious of it until sometime later” (MacKillop & Anderson, 2007; Michalak et al., 2008).

Fatigue

The author translated the Shortened Fatigue Questionnaire (SFQ) from English to German. The questionnaire was administered to evaluate the fatigue level. Internal consistency of the original questionnaire was found to be excellent in almost all studied groups, with good sensitivity (0.98) and specificity (0.82). The questionnaire contained four items and was assessed as a 7-point Likert scale ranging from 1 “yes, that is true” to 7 “no, that is not true”. The four items are: “I feel tired”, “I tire easily”, “I feel fit” and “I feel physically exhausted” (Penson et al., 2020).

Stress

The German version of the Perceived Stress Scale (PSS-10) examined stress. A specific validation of the German version of the Perceived Stress Scale showed good internal consistency (Cronbach alpha = 0.84) and construct validity (Klein et al., 2016). All ten items were measured on a 5-point Likert scale ranging from 1 (never) to 5 (very often). An example item is “In the last month, how often have you been upset because of something that happened unexpectedly?” (Cohen et al., 1983; Schneider et al., 2020).

Materials

The participants were offered four different time slots of which they could choose the most fitting. The workshop had a duration of two hours.

Each workshop was facilitated online with a maximum of twenty participants. In total, 80 slots were offered. The participants were invited to answer the questionnaires, however whether they followed the invitation could not be controlled for anonymity reasons. The workshop was administered via Microsoft Teams and with the whiteboard tool Mural for visual aid. It consisted of theoretical input regarding work break behavior, stress, and recovery. Most time was spent on individual reflection of signs that show the need for a break and the development of individual fitting EMSs. For this, breakout rooms and interactive plena as well as a workbook were used.

The developed insights were deepened with visualizations and possible obstacles were reduced with the mental contrasting WOOP-technique developed by Oettingen & Reininge (2016). The acronym WOOP describes the four steps: Wish, Outcome, Obstacle, and Plan. Thus, one first formulates the desire and the positive outcome of that wish by expressing the reason and vision for the behaviour. Next, the obstacle to achieving that dream is considered and a plan for overcoming the given obstacle is formulated. Experiments could show that people using this short technique were more successful in shifting their habits like smoking, improving relationships, or self-improvement (Oettingen, 2015).

The workshop's content was chosen based on the current scientific literature regarding micro-breaks. A pilot session was administered on the mindfulness team and feedback was integrated into the actual intervention workshop. A detailed agenda and the corresponding workbook can be found in Appendix C and D.

Data Analysis

The data files from both surveys were sent to the researcher by an external company. Reversed-coded items of the fatigue and mindfulness questionnaire were recoded. After doing so a higher score indicates a higher rate for each variable. The analysis was performed with SPSS Statistics version 29. All assumptions that are necessary to perform the repeated measures MANOVA were met. Normality could be assumed due to the sample size. Further, statistical tests like the Box's Test of Equality of Covariance Matrices allowed to assume homogeneity of covariance matrices. In addition, the data was investigated for multivariate outliers with Mahalanobis' distance. No critical values could be detected. The statistical analysis repeated measures MANOVA (multivariate analysis of variance) was performed to analyze the effect of the independent variables on the dependent variables according to the given hypotheses. In this case, the influence of time and the group on taking micro-breaks, performance, mindfulness, fatigue, and stress was tested. The mean scores for each outcome variable on both time points were calculated for each participant.

Results

Descriptive Statistics and Correlations of Outcome Variables

The descriptive statistics of the investigated variables are shown in Table 1. There appears to be a potential pre-existing difference between the intervention and control group. For each variable, it can be stated that higher numbers indicate more prominent variables. The data in Table 2 demonstrates a significant negative correlation between performance and mindfulness, suggesting that more performance is associated to less mindfulness. In addition, the data does suggest a positive correlation between performance and fatigue, where more performance is associated to more fatigue. A negative relationship can be found between performance and

stress, where more performance is connected to less stress. Furthermore, the data demonstrates a negative correlation between mindfulness and fatigue. This suggests that more mindfulness is related to less fatigue, and vice versa. Those correlations with slightly differing significance levels are also found in T1 and are presented in Table 3 above the diagonal. However, the data of T2 shows no significant correlations, as represented in Table 3 below the diagonal.

Table 1

Means for the Dependent Variables per Timepoint, the Standard Deviation Is in Brackets

	1. T1		**2. T2**	
	Intervention (*N*=19)	**Control (*N*=18)**	**Intervention (*N*=12)**	**Control (*N*=18)**
Variable	*M*(*SD*)	*M*(*SD*)	*M*(*SD*)	*M*(*SD*)
Micro-breaks	1.37 (1.71)	2.56 (1.98)	1.5 (1.0)	2.89 (2.19)
Performance	3.03 (.87)	3.38 (.70)	3.3 (.64)	3.42 (.59)
Mindfulness	3.47 (.62)	3.50 (.90)	3.24 (.76)	3.4 (.84)
Fatigue	3.66 (1.55)	3.61 (1.8)	4.83 (1.19)	4.22 (1.85)
Stress	2.82 (.4)	2.73 (.33)	2.83 (.31)	2.81 (.25)

Note. M and SD represent mean and standard deviation, respectively. N = 31 for intervention group, *N = 36* for control group

The second survey consisted of 15 additional questions that went into more detail about the specific micro-break behavior. As answering these questions was optional and the control group was invited to answer them but did not receive the intervention at that time, the results found in Appendix E should be interpreted cautiously.

Table 2

Correlations of the Outcome Variables for T1 and T2 combined

	Microbreaks	**Performance**	**Mindfulness**	**Fatigue**	**Stress**
Micro-breaks	1				
Performance	.063	1			
Mindfulness	-.209	-.416**	1		
Fatigue	.188	.311*	-.451**	1	
Stress	-.134	-.292*	.171	-.168	1

Note. *Correlation is significant at the .05 level (2-tailed) ** Correlation is significant at the .01 level (2-tailed), *** Correlation is significant at the .001 level (2-tailed*)*

Table 3

Correlations of the Outcome Variables for T1 above the diagonal and T2 data below the diagonal.

	Microbreaks	**Performance**	**Mindfulness**	**Fatigue**	**Stress**
Micro-breaks	1	.102	-.285	.237	-.233
Performance	-.028	1	-.496**	.425**	-.452**
Mindfulness	-.102	-.287	1	-.518**	.288
Fatigue	.084	.078	-.352	1	-.242
Stress	.007	.029	.011	-.110	1

Note. *Correlation is significant at the .05 level (2-tailed) ** Correlation is significant at the .01 level (2-tailed), *** Correlation is significant at the .001 level (2-tailed)

Table 4

Results of the Multivariate Test

Variable	***df***	***F***	**η2**	***p***
Time	5	1.14[b]	.09	.35
Group	5	2.97[b]	.20	.02
Time*Group[1]	5	0.16[b]	.01	.98

Note. df indicates degree of freedom. N = 31 for intervention group, N = 36 for control group. Significant at the $p<.05$ level.

Table 5

*Results of the Univariate Tests on time*group*

Variable	***df***	***F***	**η2**	***p***
Micro-breaks	1	.049	.001	.825
Performance	1	.436	.007	.512
Mindfulness	1	.110	.002	.741
Fatigue	1	.472	.007	.495
Stress	1	.188	.003	.666

Note. df indicates degree of freedom. N = 31 for intervention group, N = 36 for control group. Significant at the $p<.05$ level.

Main analysis

The results of the repeated measures MANOVA test demonstrated in Table 4 suggest one significant main effect of groups, which means that there was a preexisting difference between the groups (F (5,59) = 2.97, p < .019; Wilk´s Λ = 0.8 partial η2 = .20). Upon inspection of the

[1] Due to the unsuccessful intervention, a multiple regression analysis with T1 and overall data was performed. No significant association with any of the predictors and micro-breaks was found, indicating there is none. All assumptions were met.

descriptive statistics, it becomes visible that overall, members of the control condition took more micro-breaks than members of the intervention condition regardless of the intervention. In addition, there was no significant main effect of time and no interaction effect of time*group. This indicates that the participant's results did not differ based on any effect of time or the intervention. As seen in Table 5, the results of the univariate tests on time*group, testing an interaction to the five variables between time and group were not significant.

Discussion

Given the current challenges of limited time for breaks, fatigue, and stress at work on the one hand and micro-breaks as a proven possible solution for those on the other hand, the present study was set out to investigate the effectiveness of a short micro-break workshop intervention.

Based on previous research an increase in taking self-regulated micro-breaks was expected to reduce fatigue and stress and increase performance and mindfulness (H1-H4). Moreover, in previous research, it was shown that components of the workshop, like the implementation of the WOOP technique, can foster a behavior change (M1). However, the study findings provide no support for the effectiveness of the micro-break workshop intervention.

Micro-breaks

The manipulation check investigated the effectiveness of the workshop intervention on the increase in micro-break taking. The current results could not support this, which means that the intervention was not successful. Characteristics of the study sample may explain the absence of significant effects. As the main effect among groups demonstrates, there is a notable difference between the intervention and control group. The means as shown in Table 1 suggest that the control group performed more micro-breaks even without an intervention. Employees of the marketing department were assigned as the intervention group. The control group was

assembled by employees belonging to the design department. Therefore, no total randomization was executed. It can be assumed that cultural and personal differences are increased in a study set-up like this. The insights gained by the author while facilitating the workshops were congruent to these results. The control group displayed prior knowledge, more interest, and insights about possible types of micro-breaks as well as individual break signals. Moreover, many workshop participants from the control group appeared to have an established micro-break routine.

Other explanations for reduced effectiveness on an increase in micro-breaks could be related to the idea that this sample consisted of people highly perceptive to external norms, and therefore may have felt fear of judgement for taking a break (Berman & West, 2007; Gilson et al., 2011; Strongman & Burt, 2000). This fear would reduce the number of breaks that were taken. Another possible reason could be that the limited time of two hours for a workshop intervention is rather short. This duration was chosen, due to general time constraints. However, like this there was simply not enough time to discuss the theoretical background and implement behavioral changes. Moreover, the online environment possibly did not foster enough active participation, and participants were not receptive or motivated enough (Brown & Liedholm, 2002). A more extended workshop administered in person could improve this lack of engagement. As the workshop targeted a more long-lasting behavior change, more guidance in the implementation of the newly learned skills to daily life may have been necessary. A buddy system that allows for regular feedback and improvement exchange or a diary approach for self-reflection is therefore suggested. As previously discussed, it was shown that leadership and culture are highly influential in implementing behavior change interventions. The result of the

intervention was possibly caused by the lack of leadership integration. Thus, it is suggested to specifically integrate all hierarchies to improve the described intervention.

The manipulation check aimed to test whether there was an increase in the number of breaks taken amongst the participants. However, the intervention was aimed on the efficiency of micro-breaks as opposed to the amount that were taken. One possibility could be that before the workshop, more unnecessary breaks were taken, such as for reward or procrastination (Bosch & Sonnentag, 2019). A successful intervention would have reduced the number of unnecessary breaks but increased break taking when there was a real need for a break. As efficient break taking was not measured it is impossible to infer a conclusion regarding this theory. Future interventions should therefore revise the manipulation check.

Performance

It was hypothesized that participation in the micro-break workshop would lead to an increase in performance. As the manipulation check was not successful, the current study provided no support for this theory. Similarly, no significant bivariate correlation between micro-breaks and performance was found. This displays that at least in the presented sample the extent to which participants took micro-breaks was not associated with their level of performance.

As discussed in the introduction, previous studies suggested that micro-breaks can influence task performance, and thus task performance was measured in this study (Albulescu et al., 2022). However, the most influential study for this investigation evaluated task performance through objective measures (Wendsche et al., 2016). Consequently, it is recommended to conduct future studies with objective measures of performance through time, quantity, or quality. Specifically quantity and quality performance measures were demonstrated to be influenced by micro-breaks (Wendsche et al., 2016).

Besides that, it is important to pay attention to the descriptive statistics which demonstrate an overall increase in the measured task performance among both groups. A possible reason for this could be that other confounding variables were influential. Due to the missing randomization, confounding variables were possibly more prevalent. Similarly, it is possible that the overall increase in performance also reduced the sensitivity to the intervention.

Mindfulness

In addition, it was hypothesized that participation in the micro-break workshop increases mindfulness. As the intervention was not successful, no increase in mindfulness could be determined, which means that the hypothesis is not supported. This is likely because, as the answers of the second questionnaire demonstrate, only a few of the suggested and practiced micro-breaks were based on mindfulness. A table representing the outcome of the additional questions can be found in Appendix E. However, the table should be interpreted with caution as these questions were voluntary and answered by the control group without prior intervention.

Before the intervention, it was reflected upon integrating only employees that had previous training in mindfulness. However, this idea was not followed up to increase the variety among the participants. The approach was suggested by the mindfulness trainer at Google company. He recommended to aim for attention based skills trained through mindfulness interventions, followed by the practice of emotional intelligence or self-regulation skills (Tan, 2018). The practice of effective micro-breaks, so identifying the need for a micro-break and then taking one, demands advanced self-awareness of body signals and successful regulation of those signals. This is possibly too difficult for untrained practitioners. Therefore, for future interventions it is recommended to first train attention and focus techniques so that participants have a foundation of mindfulness practices before micro-breaks are introduced. The micro-

breaks do not necessarily need to contain mindfulness-based practices, however micro-breaks that are based on mindfulness practices could possibly increase effective micro-break taking in the future.

Fatigue

It was predicted that participation in the micro-break workshop would lead to a decrease in fatigue. Due to an unsuccessful manipulation check, this assumption cannot be supported. Likewise, no significant bivariate correlations between micro-breaks and fatigue were found. Thereby no conclusion about the relationship between taking micro-breaks and fatigue can be drawn based on the presented sample. This is possibly caused by the different measuring instruments used between the present study and the study by Zacher et al. (2014), which served as foundation for the proposed hypothesis. Their research used another questionnaire with similar questions, however fatigue levels were tested multiple times on multiple days. Hence, the study by Zacher et al. (2014) was more elaborate than the presented study.

In another investigation on micro-breaks by Bennett et al. (2020) it was found that shorter breaks lasting only one minute could reduce fatigue levels to baseline. Fatigue levels were measured multiple times before and after micro-breaks. A shortcoming in the present study could therefore be that fatigue levels were only measured as an overall measurement and not at different times even during the micro-breaks.

Possibly, fatigue is a construct that is better described in that moment, but difficult to remember in hindsight. Exhaustion or end-of-workday vigor are constructs that could have better served the purpose of the presented study. In conclusion, it is recommended to adapt the level of measurements to multiple in time measurements or change the overall measurements to

exhaustion or end-of-workday vigor, as measured successfully in other micro-break studies (Mainsbridge et al., 2020).

Stress

Lastly, it was hypothesized that participation in the micro-break workshop leads to a decrease in stress. Based on the given data, this hypothesis is not supported. Moreover, no significant bivariate correlations between micro-breaks and stress were found. Thereby it can be stated, that at least in the present sample the extent to which the participants took micro-breaks was not related to their level of stress.

Stress was measured subjectively through the Perceived Stress Scale (Cohen et al., 1983; Schneider et al., 2020). Other studies demonstrating effects of micro-breaks on stress utilized objective measurements like facial muscle tension or pulse rate. Stress could be a construct that is highly momentary and therefore difficult to be measured in hindsight. In-moment measurements that are additionally objective, could have led to more accurate results and should also be considered in future research.

Effects on stress reduction seem to be highly dependent on the type of micro-break that was taken. Nature and movement as well as mindfulness breaks were successful in reducing stress (Díaz-Silveira et al., 2020; Largo-Wight et al., 2016; Largo-Wight et al., 2017). As the second questionnaire suggests possibly fewer stress-reducing micro-breaks were performed, which could have been one influential factor for the present results. Another recommendation for improvement would therefore be to specifically target the training of those breaks. Through this, the choice of stress-reducing breaks could be more feasible, which then would reduce overall stress levels.

Strengths, Limitations and Future Research

Despite some room for improvement this study also displayed some strengths. First, this study consisted of an experimental set-up where a causal relationship was explored, compared to the use of correlational data only. This experiment was executed in a realistic work field scenario, which allows insights beyond laboratory experimental setups. Furthermore, an important strength is that to the author's knowledge, the present study was the first study focusing on empowering employees to efficient, self-regulated micro-breaks in differentiation to externally initiated breaks.

However, giving the limitations, possibilities for future research can be discussed. In addition to the already mentioned proposals like a revision of the workshop itself and measurements, an on-site execution, a buddy system, a diary approach, integration of leadership, culture, previous education in mindfulness and attention as well as an integration of structural changes other directions are suggested for the future. First, the required number of participants calculated by the G*Power analysis was not met, and there therefore a low power of the current study must be concluded. Furthermore, the generalizability was reduced since no randomization took place, the sample size was small, and the target group was particular with only employees of two departments in an automotive corporation. Therefore, it is recommended to replicate this study with randomized, larger samples in various organizational structures. The study is also built on self-reported data, which is generally prone to bias (Van de Mortel, 2008). In addition, the validity of the effectiveness of the manipulation check with the given data is limited due to missing information on varying levels of engagement during participation in the workshops. Future studies should therefore test workshop participation and exclude non-active participants.

Another approach to improve the implementation of micro-breaks is in line with the Self-determination theory (SDT) (Ryan & Deci, 2022). The SDT describes intrinsic motivation as being based on three main pillars. Those pillars are autonomy, competence, and relatedness. SDT states that when all three pillars are fulfilled, intrinsic motivation, performance, and well-being increase. In accordance, SDT could add to the present research, specifically regarding micro-breaks and work performance. Therefore, one exciting research direction could be to include each component of the SDT within the intervention. In theory, a study using these components would increase the probability of a successful intervention by increasing micro-breaks and therefore performance. Autonomy, one of the pillars of SDT, which can be described as the feeling of being in control, was already given in the presented research. Participants were free to choose the time at which they would take their breaks (Ryan, 2009). Competence, which is experienced when an individual feels confident and effective while performing a certain task, could have been one possible reason for an unsuccessful intervention. As the intervention was relatively short, competence in performing the micro-breaks was likely not achieved and would therefore need to be improved in future studies. Lastly, relatedness occurs when individuals feel connected to others and have a sense of belonging. As the intervention was online, relatedness was likely more difficult to achieve, which could negatively impact the outcome of the intervention as well. This could be improved through in person or team-based workshops that allow for deeper connection and safety. In conclusion, SDT could serve as an alternative viewpoint in improving the present research on micro-breaks and increasing the effectiveness of the intervention.

Practical Implications

While relevant suggestions for future research were recommended, this study realized several contributions. To the researcher's knowledge this was the first study on the effectiveness of an online, self-regulated micro-break workshop intervention in a work-field setting. Even though the effect of the intervention on the tested variables was not significant, micro-breaks are still an important tool to reduce fatigue and stress and should be further investigated. The feedback amongst the participants was positive throughout the study procedure whereby the employees displayed high appreciation for mindfulness-based and stress-reducing teachings.

Accordingly, and in line with the presented insights at Google company, it is recommended to keep the focus of the trainings on mindfulness. After attention skills have been trained through mindfulness practices, micro-breaks can be integrated in the trainings. This approach seems to be the most promising. The corporation trains mindfulness currently through online courses and monastery trainings. It is recommended to additionally offer regular practical exercises of meditations and focus on a deep integration of mindfulness in the work routines.

In addition, many structural barriers to micro-breaks were discussed within the workshops. Consequently, structural changes like making break taking mandatory or structural gaps between meetings through default durations of 25 or 55 minutes are suggested. Using this method, 5 minutes for micro-breaks have already been integrated into the allotted meeting schedule. Those measures would not only increase feelings of safety and acceptance to take breaks, but also function as a reminder to take regular breaks. More specifically, workshop participants reported that their meetings are scheduled one after the other, and there is simply no time to take breaks in between.

Another recommendation are designated areas or spaces within the workplace where employees can take their micro-breaks comfortably and establish micro-break routines. Moreover, this would also underline the corporation's support for taking micro-breaks.

Conclusion

The current study aimed to investigate the effects of a micro-break workshop intervention on the increase in taking micro-breaks and it was hypothesized that the increase in taking micro-breaks would increase performance, mindfulness levels and decrease fatigue and stress levels. The research was carried out on a German automotive corporation. Results show that the intervention was not successful by showing no significant effect on an increase in taking micro-breaks. Thus, no effect on performance, mindfulness, fatigue, and stress was measurable. This result was probably mostly influenced by a preconditioning difference between the groups, regardless of the intervention. Therefore, in addition to a full randomization, it was suggested to perform the workshop in person and integrate structural changes like mandatory breaks and structural gaps between meetings. Moreover, it was suggested to change the workshop's content regarding the SDT and consider a more holistic approach including management personnel as well as the company's culture. The findings provided important avenues for future research to implement changes in employee EMSs, provide opportunities for more productive and healthier employees, and reduce absenteeism and presenteeism costs.

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Appendix A

Pictures Pre-Study Design Thinking Workshop Employees

Figure A1: Question to General Break Behavior in Daily Work

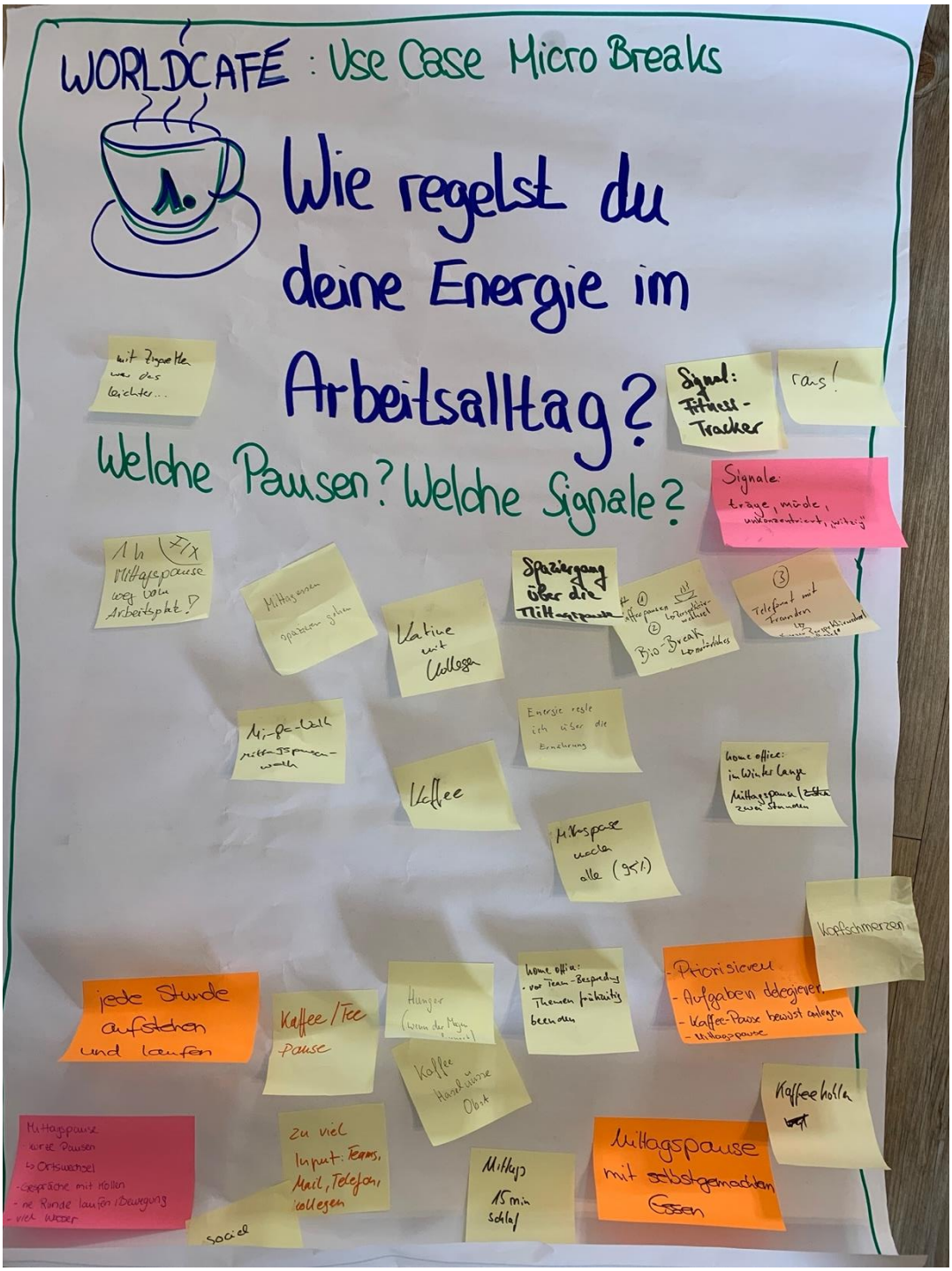


Figure A2: Question to Implementation and Pain Points

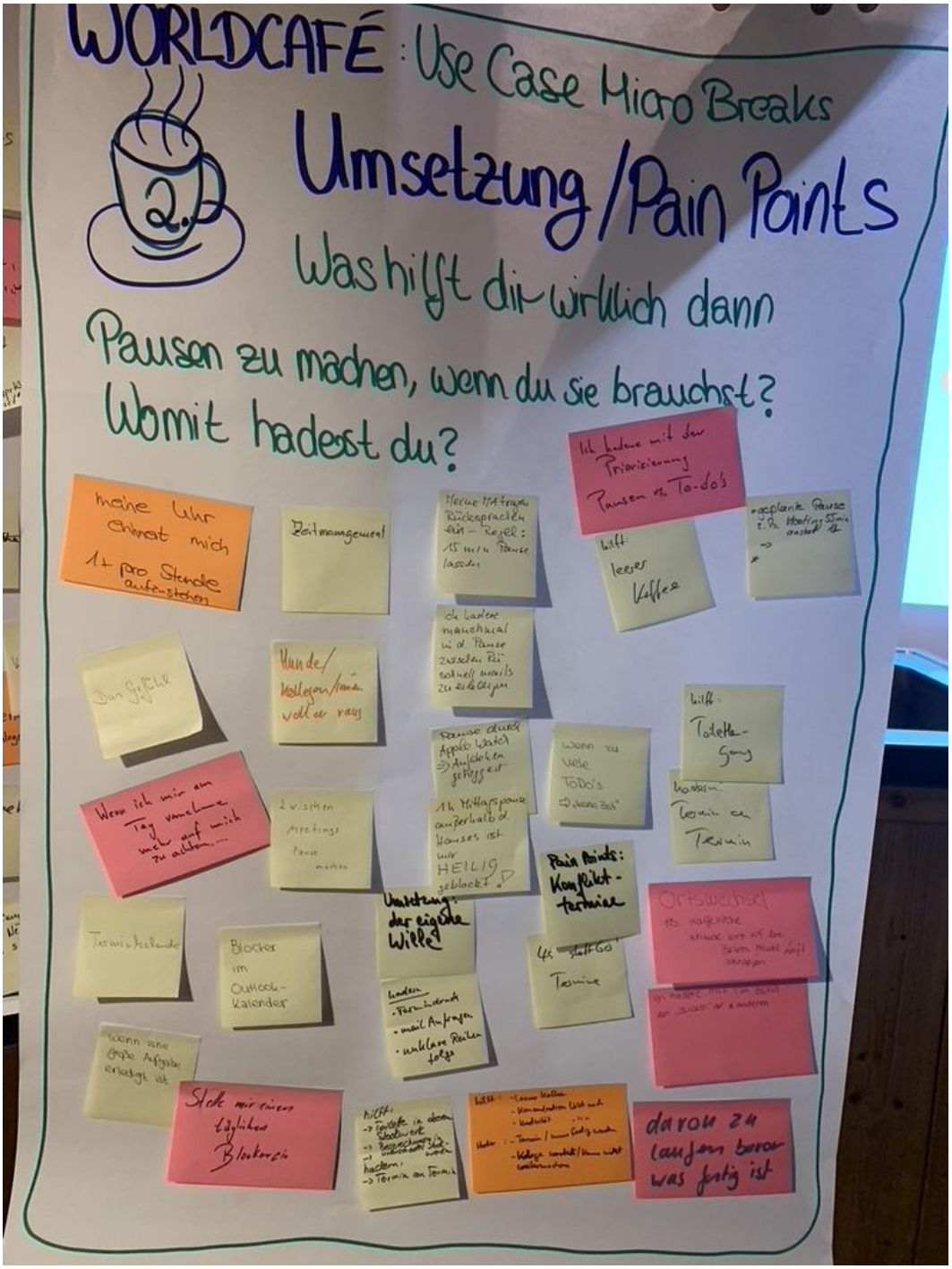
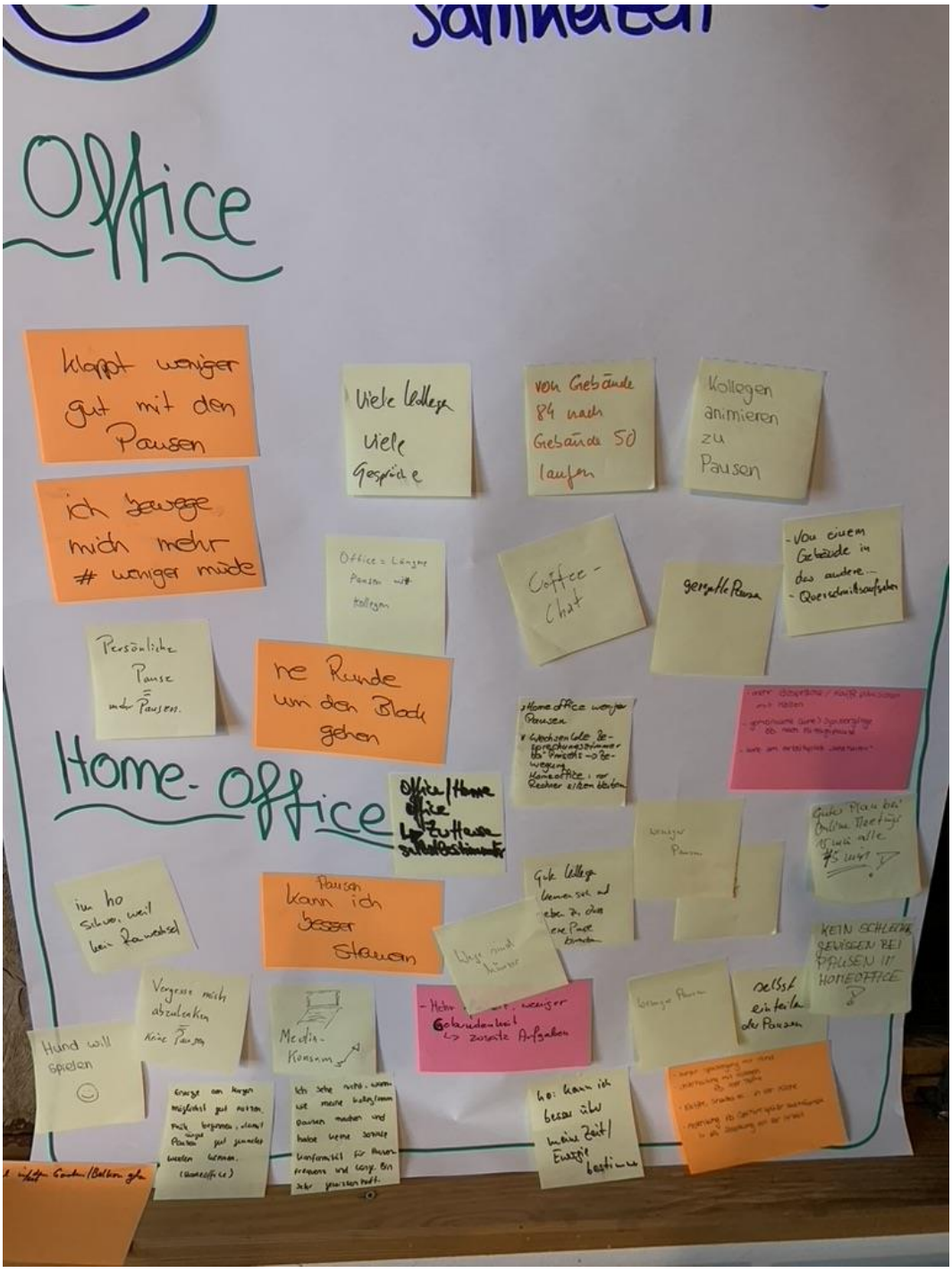


Figure A3: Question to General Break Behavior in Daily Work



Appendix B

Questionnaire Items

Die folgenden Fragen beschäftigen sich mit Ihren arbeitsbezogenden Gedanken und Gefühlen während des letzten Monats. Bitte geben Sie für jede Frage an, wie oft sie in entsprechender Art und Weise gedacht oder gefühlt haben.

Nr.	Items	Nie	Fast nie	Manchmal	Ziemlich oft	Sehr oft
1	Wie oft waren Sie im letzten Monat aufgewühlt, weil etwas unerwartet passiert ist?	**1**	**2**	**3**	**4**	**5**
2	Wie oft hatten Sie im letzten Monat das Gefühl, nicht in der Lage zu sein, die wichtigen Dinge in Ihrem Leben kontrollieren zu können?	**1**	**2**	**3**	**4**	**5**
3	Wie oft haben sie sich im letzten Monat nervös und gestresst gefühlt?	**1**	**2**	**3**	**4**	**5**
4	Wie oft waren Sie im letzten Monat zuversichtlich, dass Sie fähig sind, ihre persönlichen Probleme zu bewältigen?	**1**	**2**	**3**	**4**	**5**
5	Wie oft hatten Sie im letzten Monat das Gefühl, dass sich die Dinge zu Ihren Gunsten entwickeln?	**1**	**2**	**3**	**4**	**5**
6	Wie oft hatten Sie im letzten Monat den Eindruck, nicht all Ihren anstehenden Aufgaben gewachsen zu sein?	**1**	**2**	**3**	**4**	**5**

7	Wie oft waren Sie im letzten Monat in der Lage, ärgerliche Situationen in Ihrem Leben zu beeinflussen?	**1**	**2**	**3**	**4**	**5**
8	Wie oft hatten Sie im letzten Monat das Gefühl, alles im Griff zu haben?	**1**	**2**	**3**	**4**	**5**
9	Wie oft haben Sie sich im letzten Monat über Dinge geärgert, über die Sie keine Kontrolle hatten?	**1**	**2**	**3**	**4**	**5**
10	Wie oft hatten Sie im letzten Monat das Gefühl, dass sich so viele Schwierigkeiten angehäuft haben, dass Sie diese nicht überwinden konnten?	**1**	**2**	**3**	**4**	**5**

Diese Seite enthält vier Aussagen. Bitte geben Sie an, inwieweit diese Aussagen auf Sie zutreffen, indem Sie eines der sieben Kästchen neben der jeweiligen Aussage ankreuzen. Jedes Kästchen gibt an, wie sehr die Aussage in den letzten vier Wochen auf Sie zutraf. Wenn Sie zum Beispiel der Meinung sind, dass die Aussage voll und ganz zutrifft, kreuzen Sie das Kästchen ganz links an. Wenn Sie das Gefühl haben, dass die Antwort weder "ja, das stimmt" noch "nein, das stimmt nicht" lautet, kreuzen Sie das Kästchen an, das Ihrem Gefühl am ehesten entspricht, z. B das in der Mitte.

1.	Ich fühle mich müde.	Ja, das trifft zu						Nein, das trifft nicht zu
2.	Ich ermüde leicht.	Ja, das trifft zu						Nein, das trifft nicht zu
3.	Ich fühle mich fit.	Ja, das trifft zu						Nein, das trifft nicht zu
4.	Ich fühle mich körperlich erschöpft.	Ja, das trifft zu						Nein, das trifft nicht zu

Die folgenden Fragen beziehen sich darauf, wie Sie Ihre Arbeit in den letzten vier Wochen ausgeübt haben. Wenn Sie unsicher sind, wie Sie eine bestimmte Frage beantworten sollen, geben Sie bitte die bestmögliche Antwort.

Nr.	**Items**	**Selten**	**Manchmal**	**Regelmäßig**	**Oft**	**Immer**
In den letzten 4 Wochen..						
1	Ich war in der Lage, meine Arbeiten so zu planen, dass ich pünktlich fertig geworden bin.	**0**	**1**	**2**	**3**	**4**
2	Ich behielt das zu erreichende Arbeitsergebnis im Auge.	**0**	**1**	**2**	**3**	**4**
3	Ich war in der Lage, Hauptthemen von von Nebensächlichkeiten zu unterscheiden.	**0**	**1**	**2**	**3**	**4**
4	Ich war in der Lage, meine Arbeit, mit minimalem Zeit- und Arbeitsaufwand, gut auszuführen.	**0**	**1**	**2**	**3**	**4**
5	Ich habe meine Arbeit optimal geplant.	**0**	**1**	**2**	**3**	**4**

Unten finden Sie eine Sammlung von Aussagen zu tagtäglichen Erlebnissen. Bitte geben Sie mittels der Skala von 1 bis 6 an, wie häufig oder selten Sie derzeit jedes dieser Erlebnisse hatten. Bitte antworten Sie so, wie Sie diese Dinge derzeit wirklich erleben und nicht, wie Sie denken, dass Sie die Dinge erleben sollten. Bitte behandeln Sie jede Aussage unabhängig von den anderen Aussagen.

Nr.	Items	Fast immer	Sehr häufig	Eher häufig	Eher selten	Sehr selten	Fast nie
1	Ich könnte ein Gefühl haben und mir dessen erst irgendwann später bewusst werden.	**1**	**2**	**3**	**4**	**5**	**6**
2	Ich zerbreche oder verschütte Dinge aus Achtlosigkeit, ohne den Dingen Aufmerksamkeit zu schenken oder weil ich an anderes denke.	**1**	**2**	**3**	**4**	**5**	**6**
3	Ich finde es schwierig, auf das konzentriert zu bleiben, was im gegenwärtigen Augenblick passiert	**1**	**2**	**3**	**4**	**5**	**6**
4	Ich neige dazu, schnell zu gehen, um dorthin zu kommen, wo ich hingehe, ohne darauf zu achten, was ich unterwegs erlebe.	**1**	**2**	**3**	**4**	**5**	**6**
5	Ich neige dazu, Gefühle körperlicher Anspannung oder Unwohlsein nicht	**1**	**2**	**3**	**4**	**5**	**6**

	wahrzunehmen, bis sie meine Aufmerksamkeit vollständig in Anspruch nehmen.						
6	Ich vergesse den Namen einer Person fast sofort nachdem er mir erstmals gesagt wurde.	**1**	**2**	**3**	**4**	**5**	**6**
7	Es sieht so aus, als würde ich “automatisch funktionieren”, ohne viel Bewusstsein für das, was ich tue.	**1**	**2**	**3**	**4**	**5**	**6**
8	Ich hetze durch Aktivitäten, ohne wirklich aufmerksam für sie zu sein.	**1**	**2**	**3**	**4**	**5**	**6**
9	Ich bin so auf das Ziel konzentriert, das ich erreichen möchte, dass ich den Kontakt dazu verliere, was ich hier und jetzt tue, um dieses Ziel zu erreichen.	**1**	**2**	**3**	**4**	**5**	**6**
10	Ich erledige Aufträge oder Aufgaben automatisch, ohne mir bewusst zu sein, was ich tue.	**1**	**2**	**3**	**4**	**5**	**6**
11	Ich bemerke, wie ich jemandem nur mit einem Ohr zuhöre, während ich gleichzeitig etwas anderes tue.	**1**	**2**	**3**	**4**	**5**	**6**

12	Ich fahre zu Orten wie von einem “Autopiloten” gesteuert und frage mich dann, wie ich dorthin gekommen bin.	**1**	**2**	**3**	**4**	**5**	**6**
13	Ich bemerke, dass ich gedankenverloren der Zukunft oder der Vergangenheit nachhänge	**1**	**2**	**3**	**4**	**5**	**6**
14	Ich merke, wie ich Dinge tue, ohne auf sie zu achten.	**1**	**2**	**3**	**4**	**5**	**6**
15	Ich esse eine Kleinigkeit, ohne mir bewusst zu sein, dass ich esse.	**1**	**2**	**3**	**4**	**5**	**6**

Im Folgenden geht es um Ihre persönliche Erfahrung mit dem Durchführen von Micro-breaks, also freiwillige und selbstgesteuerte Arbeitsunterbrechungen, die ein paar Sekunden bis Minuten lang sind. Diese können zum Beispiel aus einer kleinen Meditation, einem Spaziergang oder einem Snack bestehen. Bitte beziehen Sie sich bei der Beantwortung der Fragen auf die letzten 4 Wochen.

Nr.	**Items**	**Seltener als einmal pro Woche**	**Einmal pro Woche**	**Mehrmals pro Woche**	**Täglich**	**Zweimal täglich**	**Dreimal täglich**	**Mehr als dreimal täglich**
1	Ich mache Micro-breaks.	**0**	**1**	**2**	**3**	**4**	**5**	**6**

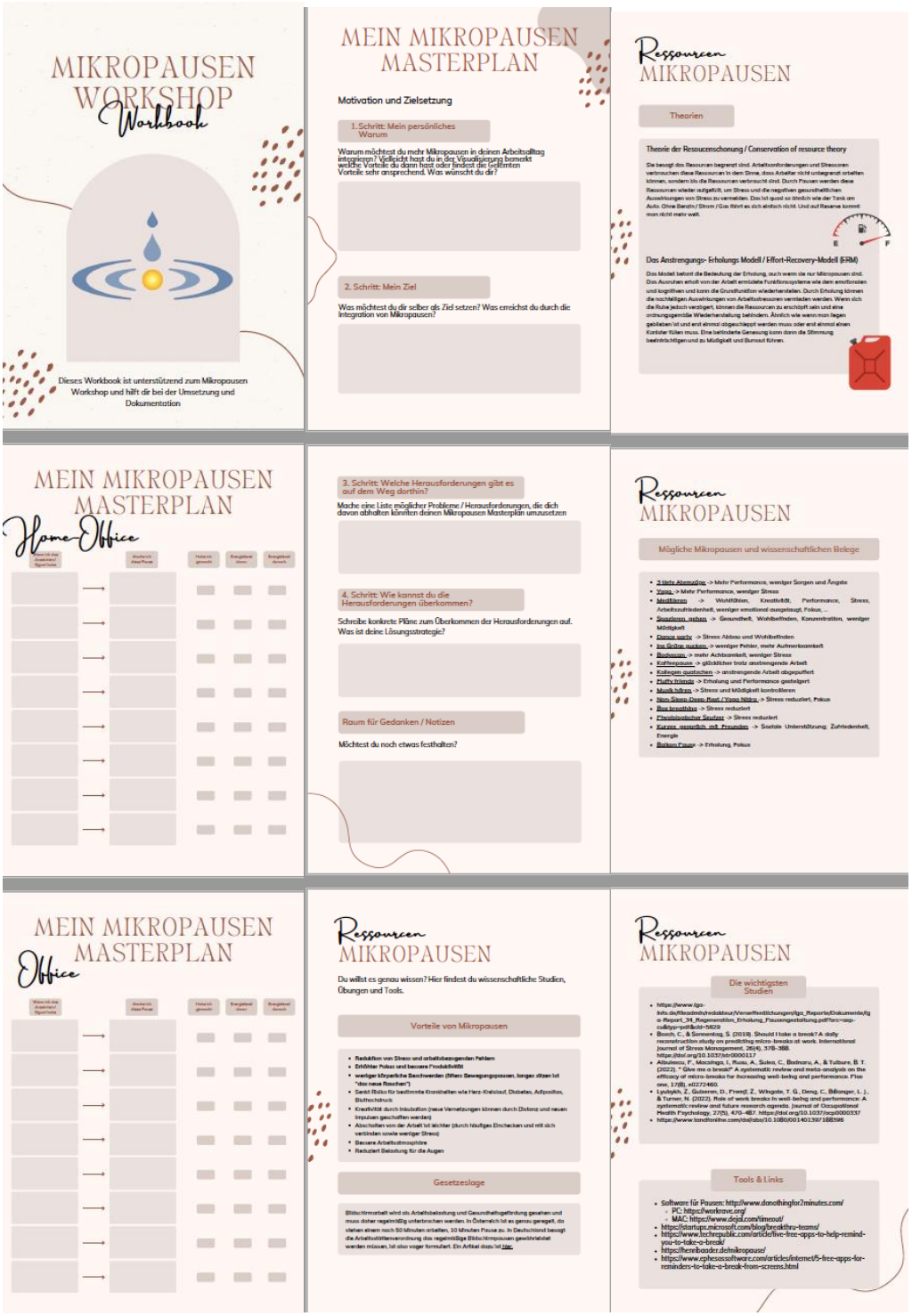
2	Ich mache die Micro-break „Dreimal tief in den Bauch atmen“	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3	Ich mache die Micro-break „Selbstmitgefühl Meditation“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4	Ich mache die Micro-break „Meditieren“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
5	Ich mache die Micro-break „Body Scan“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
6	Ich mache die Micro-break „Yoga/Stretching“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
7	Ich mache die Micro-break „Spazieren gehen“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
8	Ich mache die Micro-break „Schütteln/Tanzen“.	**0**	**1**	**2**	**3**	**4**	**5**	**6**
9	*Ich mache die Micro-break „Mit Kollegen quatschen“.*	**0**	**1**	**2**	**3**	**4**	**5**	**6**
10	*Ich mache die Micro-break „Nickerchen“.*	**0**	**1**	**2**	**3**	**4**	**5**	**6**
11	*Ich mache die Micro-break „Kaffee trinken“.*	**0**	**1**	**2**	**3**	**4**	**5**	**6**
12	*Ich mache die Micro-break „Social Media checken.“*	**0**	**1**	**2**	**3**	**4**	**5**	**6**

Nr.	Items	Lehne stark ab	Lehne ab	Neutral	Stimme zu	Stimme völlig zu
14	Ich fühle mich frei in meinem Arbeitsumfeld Micro-breaks zu machen.	**1**	**2**	**3**	**4**	**5**
15	Ich habe ein schlechtes Gewissen, wenn ich eine Micro-break mache.					
16	Ich mache mehr Micro-breaks, wenn ich von zu Hause aus arbeite als im Office.					

Nr.	Items	Zahlen feld
17	Wie viele Minuten habe ich eine Micro-break im Durchschnitt ca. gemacht?	

Appendix C

Workbook



Appendix D

Agenda

WHEN?			WHAT?			
Start	Ende	Dauer	Titel	Details	Anmerkungen	Lernziel
09:00	09:05	00:05	**Einstieg**	Willkommen, Minute zum Ankommen + 3 tiefe Atemzüge, Agenda: Wir starten erst theoretisch und werden dann immer praktischer und konkreter, sodass ihr euren individuellen Mikropausen Masterplan entwickelt. Euer Arbeitsplatz: Bitte Mural öffnen, wenn ihr könnt und euer Workbook oder Stift und Papier!, Vorstellung Ich, Workshopregeln & Ergänzung von Gewünschtem "Das sind Workshopregeln, die sich als sehr sinnvoll erwiesen haben, wenn ihr aber bestimmte Wünsche habt, vermerke ich sie gerne hier. Das ist schließlich euer individueller Workshop!" Allgemein: Wenn ihr Fragen habt, könnt ihr mich gerne immer einfach unterbrechen!	Workbook in Besprechung vorher!! Workbook in Chat posten!	Ankommen
09:05	09:10	00:05	**Warum ist es sinnvoll Mikropausen zu machen?**	Wer kennt es nicht, man arbeitet den ganzen Tag durch, liest manche e-mails 5 mal bis man sie verstanden hat, kann sich am Ende noch nicht einmal mehr auf eine E-Mail konzentrieren, ist gestresst und ausgelaugt, das Gedankenkarussel rast abends im Bett immernoch und richtig produktiv war man eigentlich auch nicht? Bitte einmal die Hand heben! Eine Studie aus 2019 konnte sogar zeigen, dass die meisten Pausen nicht dann gemacht werden, wenn wir konkrete Signale für das Benötigen einer Pause haben, sondern wenn wir uns belohnen wollen oder die Aufgabe nicht mögen. Dazu kommt noch, das viele ihre Mittagspause ausfallen lassen. Studien zeigen jedoch auch das Müdigkeit und Stress tagtägliche Begleiter im Arbeitsleben sind, die unsere Produktivität einschränken.	Die Details zu den Theorien und studien findet ihr auch nochmal am Ende eures Workbooks!	Gruppe abholen in das Thema finden und identifizieren
09:10	09:15	00:05	**Vorteile von Mikropausen**	Es wäre jedoch sehr sinnvoll Pausen zu machen. Ich gehe im weiteren auf Mikropausen ein, die Mittagspause sollte genauso auf jedem Fall eingehalten werden. Mikropausen sind Arbeitsunterbrechungen die nur bis zu 10 Minuten lang, können auch nur ein paar Sekunden dauern. Wichtig ist auch, das sie selber gesteuert sind. So könnte gezeigt werden das wir weniger gestresst sind, wenn wir Mikropausen machen und weniger arbeitsbezogende Fehler haben. Das Unfallrisiko wird dadurch auch gesenkt. Wir haben mehr Fokus, mehr Produktivität, weniger körperliche Beschwerden, ein geringeres Risiko für bestimmte Krankheiten (z.b. kardiovaskulär), eine geringere Belastung für die Augen. Aber es gibt noch mehr: Die Kreativität wird gesteigert (durch Inkubation), wir können besser abends Abschalten (-also weniger Gedankenkarussel nach der Arbeit), wir haben eine bessere Arbeitsatmosphäre...		Vorteile verstehen
09:25	09:32	00:07	**Wer seid ihr?**	Jetzt wisst ihr wer ich bin und was heute passiert, jedoch interessiert mich sehr wer ihr seid. Jede/r hat jetzt 2 Minuten Zeit zu notieren (in Miro oder im Kopf) wie er sie heißt und was Signale für das Benötigen einer Mikropause sin. Danach trefft ihr euch in kleineren Gruppen à 5 Personen, die ich lose und ihr teilt (insofern ihr mögt) eure Notizen für 1 Minute. Wer nicht mag, kann immer einfach in den großen Raum zurück kommen, das gilt übrigens für den ganzen Tag	2 Min schreiben 5 Min teilen	Gegenseitig kennenlernen und Signale kennenlernen
09:32	09:35	00:03	**Theorie der Resourcenschonung**	Conservation of resource theory Sie besagt das Resourcen begrenzt sind. Arbeitsanforderungen und Stressoren verbrauchen diese Ressourcen in dem Sinne, dass Arbeiter nicht unbegrenzt arbeiten können, sondern bis die Ressourcen verbraucht sind. Durch Pausen werden diese Ressourcen wieder aufgefüllt, um Stress und die negativen gesundheitlichen Auswirkungen von Stress zu vermeiden. Das ist quasi so ähnlich wie der Tank am Auto. Ohne Benzin / Strom / Gas fährt es sich einfach nicht. Und auf Reserve kommt man nicht mehr weit.		Theoretischer Hintergrund
09:35	09:38	00:03	**Effort-recovery Modell**	Das Anstrengungs- Erholungs Modell: Das Effort-Recovery-Modell (ERM) betont die Bedeutung der Erholung auch wenn sie nur Mikropausen sind. Das Ausruhen erholt sich von der Arbeit ermüdeter Funktionssysteme wie dem emotionalen und kognitiven und kann die Grundfunktion wiederherstellen. Durch Erholung können die nachteiligen Auswirkungen von Arbeitsstressoren vermieden werden. Wenn sich die Ruhe jedoch verzögert, können die Ressourcen zu erschöpft sein und eine ordnungsgemäße Wiederherstellung behindern. Ähnlich wie wenn man liegen gebliebenen ist und erst einmal abgeschleppt werden muss oder erst einmal einen Kanister füllen muss. Eine behinderte Genesung kann dann die Stimmung beeinträchtigen und zu Müdigkeit und Burnout führen. FRAGEN??	oder Tiefenentladung der Batterie	Theoretischer Hintergrund
09:38	09:43	00:05	**Mikropause**	Yoga		-
09:43	09:45	00:02	**Was sagt der Gesetzgeber?**	Bildschirmarbeit wird als Arbeitsbelastung und Gesundheitsgefährdung gesehen und muss daher regelmäßig unterbrochen werden. In Österreich ist es genau geregelt, da stehen einem nach 50 Minuten arbeiten, 10 Minuten Pause zu. In Deutschland besagt die Arbeitsstättenverordnung das regelmäßige Bildschirmpausen gewährleistet werden müssen, ist also vager formuliert.	Wer es nicht schon gesehen hat, im Workbook sind die auch alle nochmal zusammengefasst	Theoretischer Hintergrund
09:45	09:50	00:05	**Workshop eigene Signale sammeln**	Jetzt habt ihr den wissenschaftlichen Hintergrund und kennt die Gesetzeslage. Also Pausen sind gut und ihr dürft sie machen. Ihr habt auch gelernt, das wir oft keine Pausen machen, wenn sie effizient sind. Daher sammeln wir jetzt die echten Signale, das eine Pause angebracht ist. Und zwar für jeden individuell, ähnlich wie das das Auto ja auch irgendwo her weiß, dass du müde bist. Also: "Stell dir vor du hast einen ganz normalen Arbeitstag, startest morgens frisch in den Tag und dann bemerkst du... - ein klares Anzeichen, dass du eine Pause brauchst!Schreibe sie auf ein Blatt Papier oder in dein Workbook Unterscheide gerne in Home-Office und Office Situationen"	5 Minuten	Eigene Signale sammeln NUR DIE SIGNALE, PAUSEN DANACH!
09:50	09:55	00:05	**Brainstorming: Eure Lieblingspausen?**	Welche Mikropausen macht ihr denn am Liebsten? Welche im Home-Office, welche im Office?		
09:55	10:00	00:05	**Workshop: Welche Pausen kann ich machen?**	Wir gehen jetzt zusätzlich noch verschiedene Mikropausen durch und sammeln erstmal. Gleich habt ihr noch Zeit für euch selber eure Pausen-Signale und passende Mikropausen zu verbinden und euren Masterplan zu vervollständigen. "Was denkt ihr, was sagt die Wissenschaft welche Pausen besonders gut sind? Ihr werdet jeweils mit **Daumen hoch oder Daumen runter** bewerten was ihr denkt ist gut und was nicht. Die best bewertetste Pause machen wir dann gleich."	Social Media, Yoga, Meditieren, Spazieren gehen, Dance party, Stehen, 3 tiefe Atemzüge, Ins Grüne gucken, Bodycam, Kaffeepause, Kollegen quatschen, Fluffy friends, Musik hören, NDSR, Box breathing, Physiologischer seufzer, Kurzes gespräch mit Freunden, Ballon Pause	Verbindung von Signal einer Pause zur passenden Mikropause
10:00	10:10	00:10	***Mikropause + Bio break!***	*Je nach Abstimmung*		-
10:10	10:13	00:03	**Masterplan vervollständigen**	Wenn das Signal mache ich die Pause, die im Home-Office, die im Office		Eigener Masterplan
10:13	10:17	00:04	Optional: **Masterplan teilen**	Breakout 1:1 erzähle deinen Masterplan einer anderen Person		Commitment steigern
10:17	10:22	00:05	**Visualisierung**	Ankommen, Atmen, ... Du bist in einem klassichen Arbeitstag, sitzt an deinem Computer, bist in Meetings, beantwortest Mails und plötzlich ist da dieses Signal. Du kennst es und hast es schon oft einfach ignoriert. Doch dieses mal machst du es anders. Wie reagierst du dieses Mal? Was machst du? Wie fühlt sich das an? Wie fühlst du dich danach? Wie fühlst du dich, wenn du jeden Tag Mikropausen nutzt in einem Monat, in einem Jahr, in 10 Jahren? Wie sieht dein Leben dann aus? Dreh die Farben rein, mach es strahlender, fühl es! Wie verhältst du dich zu deinen Mitmenschen, deinen liebsten Menschen? Wie sieht deine Gesundheit aus? Was kannst du schaffen? ... - langsam zurückkommen, Notizen in Workbook	3 Min notizen	Erste Neuronalverbindungen aufbauen, Motivation steigern
10:22	10:32	00:10	**Hindernisse überkommen**	Was sind mögliche Hindernisse und wie überkomme ich sie? Wir gehen wieder in Breakoutsessions à 4 Personen. Dort sammelt ihr für 5 Minuten mögliche Hindernisse zur Umsetzung eurer Mikropausen. "Was könnte euch daran hindern?" Danach sammelt ihr für weitere 5 Minuten mögliche Strategien, die euch helfen diese Hindernisse zu überwinden. Macht euch einen Lösungsplan! Das häufigste ist der Gedanke das die Pause nichts bringt, Ihr habt ja gesehen, das stimmt nicht!		Hindernisse überkommen
10:32	10:37	00:05	**Notizen in das Workbook aufnehmen**	Sammelt eure Erkenntnisse und Strategien im Workbook!	**Empfehlung: Masterplan ausdrucken und aufhängen als Erinnerung!! Tauscht auch mit euren Partnern und Kollegen auf der Arbeit aus!**	Eigener Masterplan
10:37	10:42	00:05	**Check out**	Check-Out: Eine Sache für die ich dankbar bin. / Das war mein Aha-Moment.	Instant Feedback im Chat / notfalls nur Daumen check in " Wie fühlst du dich?" Und nach Feedback per Mail Fragen oder lieber Mem?	
10:42	10:43	00:01	**Resourcen**	Tipps & Tricks		
10:43	10:44	00:01	**Resourcen Sammlung & Wie geht es weiter (E-Mail kommt)**			

Appendix E

Additional Questions about Micro-break Behavior in T2