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Experiences with and causes of work interruptions and fragmentation in academia - How can they be managed?

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Abstract

Purpose: The purpose of this research is to explore experiences with and causes of the work interruptions and fragmentation that occur in the daily work of academic staff. This research also aims to explore strategies for managing these issues.

Methodology: As part of a research project, data were collected from a workshop featuring academics to investigate their experiences of work fragmentation and the strategies they used to manage this issue. These academics were asked to individually write down ways of creating coherent time and their perceptions of the reasons underlying the fragmentation of work. They were then asked to discuss and reflect on this topic in groups based on their work roles, after which the groups' answers were summarized. The written answers were analysed by a total of four researchers working on this project in two separate rounds.

Findings: The analysis resulted in fourteen group labels of experiences and causes of work interruptions and fragmentation, including Knowledge, Resources, Communication, Unplanned tasks, Planning, Digital systems, Processes, Job duties, Administration, (Over)ambition, Meetings, Set-up time, Quality work and Help and support. In the analysis of the strategies used to manage work interruptions and fragmentation, seven groups were identified: Conscious planning to create space for coherent time, Need for knowledge that offers

the ability to create coherent time, Control the communication, Support/lead, Working hours, Prioritize, and Respect others and their time.

Research limitations/implications: The research was conducted by reference to a group of heads of subjects drawn from one university.

Originality/Value: Qualitative research on interruptions and fragmentation in higher education institutes (HEI) is rare.

Keywords: Academia, Fragmentation, Interruption, Strategies, Managing, Work, Higher Education Institute (HEI).

Paper type: Research paper

1 Introduction

In daily working life at a higher education institute (HEI), interruptions are somewhat common. Completing working tasks without interruptions has become a luxury, as noted by Leroy and Glomb (2018). More common than a day free from interruptions is a workday during which tasks are subdivided into small fragments due to various interruptions. Jett and George (2003) define interruptions as incidents that delay organizational members' attempts to make progress on work tasks. The definition of work interruptions provided by Puranik et al. (2018) is in line with that of Jett and George when the former authors define work interruptions as "suspension of an ongoing work task's execution" (p. 808). Interruptions can take the form of, for example, unexpected questions from colleagues, unnecessary meetings, and excessive e-mails or instant messages (González & Mark, 2004; Rosen et al., 2018; Sonnentag et al., 2018). Interruptions in work can affect co-workers' health and wellbeing. Mark et al. (2008), for example, reports that people compensate for interruptions by working faster. However, this tendency has a negative side that leads to increased perceived stress, which is followed by higher frustration, time pressure and effort. Overall, interruptions fragment the working day.

Research on interruptions, fragmentation and HEI is scarce. In fact, we have not found any research focusing on fragmentation. Some researchers have investigated interruptions and HEIs, but this research has mostly been quantitative and focused on investigating certain aspects of interruptions as well as the corresponding moderators and effects. Some researchers, such as Rogers and Barber (2019) and Enwereuzor (2022), have focused on one single type of interruption, specifically intrusion in these cases, and investigated the relation between that type and other variables. Rogers and Barber (2019) investigate the effect of intrusion on strain by reference to the moderating factors of extraversion and emotional stability, while Enwereuzor (2022) investigates the effect of intrusions on job apathy by reference to the moderating factors of perceived opportunity to craft and psychological vulnerability. However, some studies have taken a more comprehensive approach by investigating all types of interruption suggested by Jett and George (2003), simultaneously in relation to strain outcomes such as exhaustion, disengagement, perceived stress and work tension (e.g., Wilkes et al., 2018). In a study by McClean et al. (2020), morning routine disruptions were studied at a university in the USA. The results showed that disrupted morning routines caused employees to experience higher levels of depletion and reduced their calmness. Depletion was associated negatively with daily work engagement, while calmness was associated positively with daily work engagement (ibid). One study that does not explicitly address interruption but instead focuses on what Haq et al. (2021) label "hindrance stressors" (e.g., job demands that are viewed as stumbling blocks) investigates how the factor of political skills moderates the relations between the emotional exhaustion triggered by hindrance stressors and both (i) work-family conflict and (ii) job disengagement. In a mixed method study, Geschwind and Broström (2015) illustrate how HEI staff are forced to manage competing time demands (research vs. teaching), which leads to fragmentation despite the fact that the purpose of the attempt to link research and teaching is not to do so. Although digital technology is involved in the generation of interruptions in the modern workplace (Puranik et al., 2020; Wilkes et al., 2018), few studies have explicitly addressed this point in relation to higher education institutions (HEIs). One such study on this topic is the investigation of the use of Facebook at an Australian university by Francois et al. (2013).

In summary, the research on the interruption of work tasks in the HEI context has thus far focused mostly on quantitative measurements of the effect of different interruptions on strain job apathy, work engagement, work-family conflict, etc. We have not found any research that takes a more comprehensive and qualitative approach to interruptions and the fragmenting

effect they have on daily work at HEIs. Thus, the purpose of this research is to explore experiences with and causes of the work interruptions and fragmentation that occur in the daily work of academic staff. This research also aims to explore strategies for managing these issues.

1.1 Background

The pandemic has made possible new answers to the old question of how to accomplish sustainable work, that is, the task of "achieving living and working conditions that support people in engaging and remaining in work throughout an extended working life" (Eurofound, 2021, p. 3). Job quality, good work, decent work and meaningful work are different terms and concepts that have been used to capture the essence of desirable working conditions (Warhurst et al., 2022). The factors that have been identified as promoting desirable working conditions also include the theoretical assumption of a balance between demand and control (found in the Job Demand and Control model (JDC) (Karasek & Theorell, 1990) and between demand and resources (found in the Job Demands and Resource model (JD-R) (Demerouti & Bakker, 2011). This assumption posits that the occurrence of good working conditions leads to a win–win situation for employees and employers in terms of health, well-being motivation, engagement, and learning for the employee as well as increased performance and quality for the employer. However, the new liberal governance and management of HEIs has been identified as a cause of a win-lose situation that entails worse working conditions and a primary loss of control (Cardoso et al., 2019; Poutanen, 2023), thereby opening up the possibility of discussions of alienation and deprofessionalization. An increase in workload disturbs the balance between demands and control/resources, i.e., job demands.

Multiple activities are part of the nature of work in academia: providing education, supervising students, performing departmental responsibilities, and participating in different research projects (González & Mark, 2004). The results of a study by Geschwind and Broström (2015) indicate a perceived misalignment between institutional incentives for individual academic staff and the needs of teaching. Managers actively struggle to secure the participation of senior researchers in education, and simultaneously, they often prefer to delegate the bulk of teaching activities to staff members who are less active in research due to their prioritization of the goal of ensuring continuity. Such strategies may support existing patterns of division of labour among academic staff members (ibid). Wilkes et al. (2018) develop and test a self-report instrument to measure workplace interruptions (WIM). The results of a test of full-time and part-time faculty, staff and graduate assistants drawn from a large Midwestern University show that interruptions in the form of breaks predict unique variance in emotional exhaustion, perceived stress, and work tension. These authors conclude that this instrument can be a valuable tool for measuring interruptions in the modern workplace, which includes the use of technology and open office work environments.

1.2 Types of interruptions

Jett and George (2003) identify four types of interruptions: intrusions, breaks, distractions, and discrepancies. Intrusions are defined as unexpected events initiated by another person that interrupt another individual's work (e.g., unscheduled visits by students). A break is defined as a planned or spontaneous pause that interrupts the flow of a task (e.g., a lunch break). Distractions are defined as psychological reactions that are triggered by external stimuli (e.g., loud conversations from students that distract a researcher from writing a paper). Finally, discrepancies are described in terms of a situation in which an individual perceives an inconsistency between his or her expectations and what is happening in the external environment (e.g., perceived inconsistencies between an individual's expectations and his or her task-related observations) (Jett & George, 2003).

Interruptions are likely to have both positive and negative consequences for the person afflicted by them. Thus, not all interruptions have negative consequences for employee well-being. For example, a break can revitalize an employee, whereas an unexpected intrusion may lead to stress (Jett & George, 2003; Wilkes et al., 2018). Additionally, Pendem et al. (2022) study different types of interruptions, breaks, pauses, surprises and intrusions, from the perspectives of physical task requirements and attention shifts. These authors introduce a new class of interruption known as pauses, and their results indicate that pauses improve worker productivity in both the short and long term. However, they also note that the impact (in the context of their field) is a five-minute increase as a result of each of these work interruptions in terms of average worker productivity (ibid).

Based on a literature review, Puranik et al. (2020) develops an integrative process-based model of the sources, mediators, outcomes, and moderators of work interruptions. This model illustrates how external sources of work interruptions impact performance and well-being via certain mediators and moderators (ibid). Pendem et al. (2022), suggest that introducing brief pauses during worktime while simultaneously reminding employees of the tasks to be completed or goals to be achieved (before initiating the pause) can help maintain their focus on the work and lead to high performance benefits. These authors also suggest strategies that can be used to limit restart costs and increase the predictability of interruptions that harm performance. An example of such a strategy for limiting the adverse effects of interruptions involves planning a break after completing a subtask or reaching a subgoal. A further suggestion is to inform co-workers of the possibility of interruptions at the beginning of a work shift. Such information can help employees plan for possible interruptions and improve their engagement and performance at work.

2 Methodology

The methodology used and its considerations are described and discussed below.

2.1 Research approach

In Scandinavian research, there is a tradition of using different collaborative research approaches when studying organizations (Ohlsson & Johansson, 2010). The most famous collaborative research approach is probably the action research approach. Although, there is some issues and dilemmas with the action research approach (Svensson et al., (2007). The interactive research focuses more on the joint learning process and the theoretical outcome of the joint learning, then the action research (ibid). The research presented in this paper has both a practical and theoretical purpose and was needs-based, thus, the research was grounded on an interactive research approach where research is supposed to make contributions to creation of scientifically valid knowledge, practical concerns, and creation of knowledge and competencies (Johansson & Wallo 2020). Therefore, the interactive research focuses on forming dual learning and establishing knowledge and not so much on the researcher being in control of work out practical problems in the organization (ibid). This was a suitable approach for the research.

2.2 Data collection

A workshop featuring the participation of approximately 30 heads of subjects (researchers and teachers) and several administrative staff members was held in March 2023. Participants were asked to individually write down ways of creating coherent time (time without interruptions needed for deep work) and their perceptions of the reasons underlying the fragmentation of work. The questions were as follows: *How do you create coherent time? For yourself? For your colleagues? What do you see as reasons for fragmentation? For yourself? For your*

colleagues? These questions were asked to obtain an overall picture of the participants' work situation.

Participants were then asked to discuss and reflect on their answers in groups based on their work roles (researchers, teachers, and administrators). The three groups created an oral and written summary after discussing and sharing their answers with each other. The individual answers were collected by the researchers affiliated with the research project and then included in a word document, where they were sorted by question and by role.

2.3 Data analysis

Three researchers working in the project read the answers individually and marked and sorted them. Then, these researchers discussed and sorted the answers jointly. Subsequently, group labels for groups of answers were chosen. A fourth researcher also read the answers individually and marked and sorted the answers. A comparison of the analyses was made, and the results were developed further. The analysis was thus conducted in two rounds.

2.4 Research context

The research was conducted as part of an internal ongoing research project at a university in Sweden, which serves 26 000 students and employs 1 200 people. The purpose of the research project is to identify the causes of the fragmentation of academic work as well as corresponding suggestions for improvement and changes by examining the work situation faced by teachers and researchers at the university. The purpose of the project is also to investigate how the work is conditioned by governing documents and overall processes. It is a joint research project between several research subjects and the project's period is between January 2023 and until December 2024. The research presented in this paper is one part of this project and a collaboration between researchers from the subjects: Quality Management, Informatics and Sociology.

2.5 Method considerations

This kind of interactive research with collaboration between co-workers and researchers highlights the importance of separating the roles of practitioner and researcher, especially in this case when the researchers also are co-workers at the case university. It underlines reflection and distance, both in time and space, to achieve the aim of critical research (Shani et al., 2007). Therefore, the researchers have conducted analysis and discussion meetings between the workshops and discussions with the co-workers where the different perspectives have been considered.

The collaborative research approach is typified by the general sharing of responsibility for the other partners learning and knowledge (Shani et al., 2007). Thus, the practitioners benefit if the researchers succeed in developing to identify the causes of the fragmentation of academic work as well as corresponding suggestions for improvement and changes by examining the work situation faced by teachers and researchers at the university. According to Chisholm and Elden (1993) the researcher has a variety of researcher roles with "researcher dominated" at one end and "collaboratively managed" at the other end. In collaboratively managed projects, the research approach is jointly developed, and the information used is created together. Also, the decisions during the process are made by joint agreement (ibid). This project was collaboratively managed, as the researchers prepared the workshops and questions, but the co-workers answered and identified the causes of the fragmentation of academic work as well as corresponded suggestions for improvement and changes and thereby influenced the outcome.

3 Results

The results of the analyses of the answers provided by academic staff members are presented below.

3.1 Experiences with and causes of work interruptions and fragmentation

Experiences with and causes of work interruptions and fragmentation are characterized by fourteen group labels: *Knowledge, Resources, Communication, Unplanned tasks, Planning, Digital systems, Processes, Job duties, Administration, (Over)ambition, Meetings, Set-up time, Quality work* and *Help and support* (see also Figure 1 and the descriptions below).
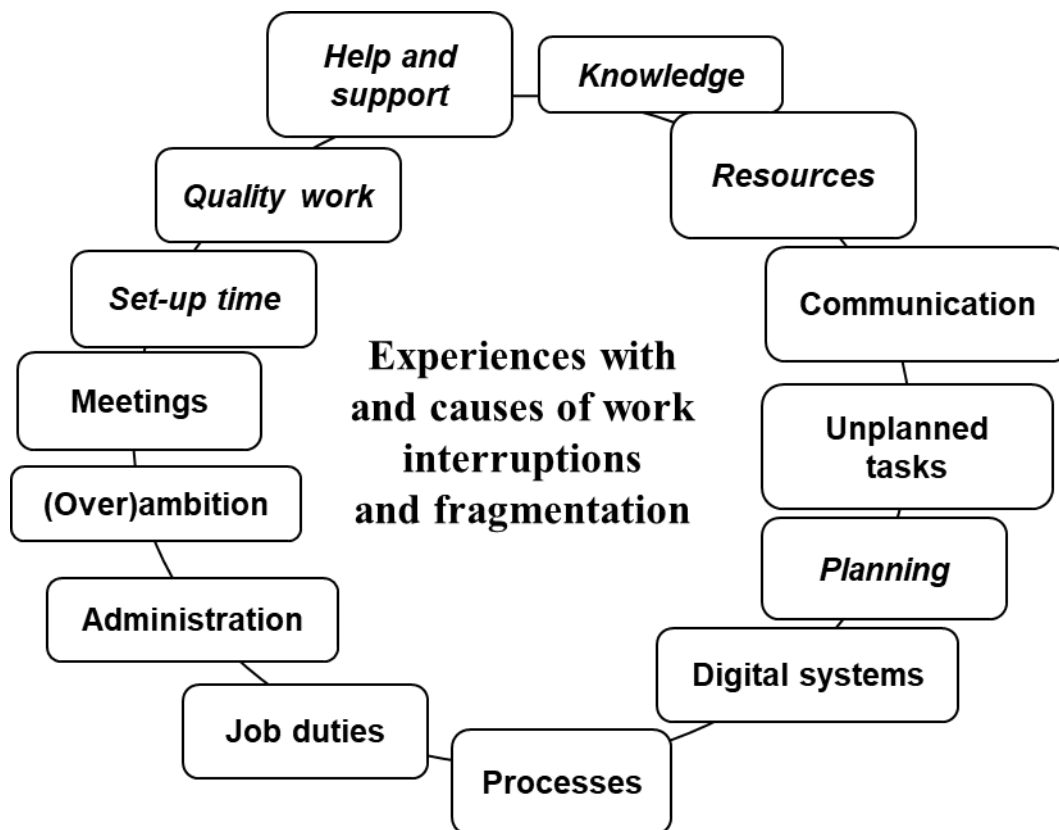

Figure 1 Causes of work interruptions and fragmentation.

The fourteen groups into which experiences with and causes of work interruptions and fragmentation are categorized are described in more detail below.

Knowledge. One source of interruptions is colleagues who are new at the job; however, other sources include colleagues who are less independent and those who have a lower level of knowledge. New tasks take more time, and people who have a low level of knowledge of the relevant systems and routines are also worse at prioritizing. Breadth in competence instead of specialization encourages small groups of personnel.

Resources. Staff members believe that they have too few resources, such as time and personnel. They have insufficient time to plan and implement courses or collaborate. Some staff members report the experience of having too few people for the work in the context of small staff groups.

In this context, it is difficult to delegate, and administrative resources are centralized. Centralization itself is also a cause of fragmentation.

Communication. E-mail is viewed as an ineffective communication method, and many information channels cause interruptions in daily work. Some staff members are dependent on the responses from others to complete their working tasks. Sometimes communication problems occur, and sometimes communication is too late.

Unplanned tasks. Several tasks must be completed at short notice. Some tasks and initiatives are ad hoc, such as those associated with opportunities, questions, tasks and students as well as uncontrollable events, e.g., childcare, meeting cancellations, and illness. Staff members report experiencing unforeseen circumstances and unexpected events in their research, teaching and administration, which require them to reprioritize their tasks.

Planning. This context features a poor planning culture in both the short and long terms. Staff members feel that attempts to plan their time are chaotic. Others' poor foresight and work processes are also causes of work interruptions. Time frames are tight, and staffing planning is believed to have a one-sided focus on the need for the puzzle to fit together.

Digital systems. Staff members believe that the digital systems with which they interact are numerous, inflexible, and illogical, that they have different interfaces and interaction designs, and that they are difficult to share. Some technical systems are defective, and the program Teams is one cause of work interruption. These more complex digital systems are time-consuming, particularly for infrequent users.

Processes. Staff members believe that the processes and decision paths are unclear and that the work processes differ among different departments, subjects and people.

Job duties. Staff members believe that they have disparate tasks, many different tasks with different logics, many parallel assignments, and many different tasks and courses with different logics, which create interruptions. Another cause of interruption is that research and education are divided into different areas. Different roles and contexts that are not connected with one another cause staff members to play dual roles. Many small projects and areas of responsibility lead to various subdivisions of many projects, which in turn give rise to many different time slots. Many infrequent tasks also lead to a lack of routine. Some staff members noted that they face large teaching assignments that force them to adapt their research despite the fact that the share of research is increasing. Work on research applications takes time, and occasionally such applications lead to too little funding even when they are successful.

(Over)ambition. Staff members have the motivation and desire to perform and realize that they are overambitious and excessively service-oriented. Simultaneously, they feel that they are expected to complete tasks promptly.

Administration. Staff members believe that administration and administrative tasks have increased, and that new administration tools and systems have become available, which are causes of work interruption. The leadership is perceived as deficient.

Meetings. Staff members feel that it is difficult to find meeting times and to determine when meetings should take place. They believe that this context features a bad meeting culture and that it is excessively easy to book appointments. Many different meeting constellations and many meetings cause their working days to become fragmented.

Set-up time. A great deal of set-up time is necessary, especially in cases of many small assignments; furthermore, different people require different lengths of mental set-up time.

Quality work. Evaluation work and reporting are prone to fragmentation and interruption as well as changes. Quantity is often rewarded more than quality.

Help and support. Staff members highlight shortcomings with regard to the helpdesk and support, and it takes time to obtain help. Administrative support is limited, and central support is fragmented across different departments. The source of help and support is unclear. Collegial time, such as time spent discussing the working environment, is not planned. Quick questions from colleagues cause interruptions.

3.2 Strategies for managing work interruptions and fragmentation

Seven groups of strategies for managing work interruptions and fragmentation were identified based on the analysis: *Conscious planning to create space for coherent time, Need for knowledge that offers the ability to create coherent time, Control the communication, Support/lead, Working hours, Prioritize, and Respect others and their time* (see also Figure 2 and the descriptions below).
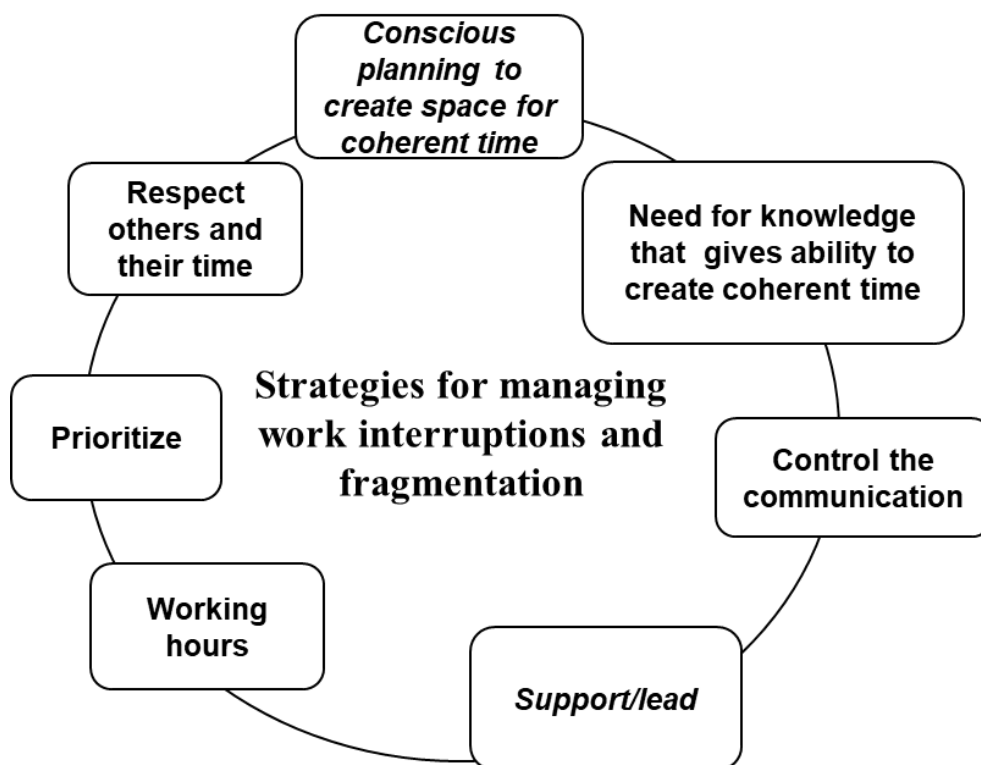

Figure 2 Strategies for managing work interruptions and fragmentation.

Couscous planning to create space for coherent time. The participants noted that they plan their own time and create coherent time by blocking time in their calendars, e.g., days/mornings/afternoons. They also use long-term planning and joint planning for management. Some staff members use tools to support their planning and planned administrative time. Others use flexible scheduling and ensure that teaching is coherent. They design the syllabus and the educational plan to create coherent time. Furthermore, some contexts feature more than one teacher per course with the goal of creating flexibility and

establishing shared responsibility. Participants try to exercise foresight, engage in joint planning and participate in short reconciliations at the beginning of the day. Other participants try to find synergies, plan courses and standardize course layouts, for example, via the learning platform.

Need for knowledge that offers the ability to create coherent time. Academic staff members believe that they lack the knowledge and ability necessary to create coherent time and to prioritize work tasks.

Control the communication. To avoid interruptions at work, staff members address mail by, for instance, waiting to reply to emails and turning off the corresponding interference. They also put their cell phones on silent, call instead of sending an email, and avoid mailing if possible.

Support/lead. The heads of subjects' act as mentors and share tips regarding how to work coherently. They coach, establish goals and highlight the importance of recovery. Other ways of supporting and leading include helping and listening to each other, taking other people's lectures, and showing confidence and trust. Heads of subjects try to establish a collaborative culture and good working conditions.

Working hours. Staff members believe that their working hours are insufficient, and so they complete tasks outside of those working hours. To gain more coherent time, they work during evenings, weekends, early mornings and/or in the summer. To create undisturbed time, they also work from home or, e.g., on trains. Some staff members schedule writing time/research time, e.g., by dedicating a whole day to the task or by going away for some days to write or conduct research. Staff members also emphasize their need for undisturbed working hours by closing the door or turning on the "do not disturb" setting, and they communicate their need for undisturbed time at peak times.

Prioritize. To manage working tasks, staff decline meetings, assignments, etc., and accept others' priorities.

Respect others and their time. The staff members respect others' time and understand differences in priorities. The heads of subjects systematize when creating meetings and do not require excessively many or unnecessary meetings. Some heads of subjects have regular meeting times and create time slots to ensure that not everyone is required to attend the entire meeting. They use mornings as a time when they can exhibit greater focus and try to do their job, so that this approach does not affect others.

4 Discussion and conclusions

The purpose of this research was to explore experiences with and causes of the work interruptions and fragmentation that occur in the daily work of academic staff. This research also aimed to explore strategies for managing these issues. The results of this research are discussed in relation to theory below, and some conclusions are drawn.

Experiences with and causes of work interruptions and fragmentation

Jett and George (2003) identify four types of interruptions: intrusions, breaks, distractions, and discrepancies. Our analyses indicated fourteen groups of causes of work interruptions and fragmentation and seven groups of strategies used to manage work interruptions and fragmentation. Some groups of experiences with and causes of work interruptions and fragmentation could probably also be sorted into the four types identified by Jett and George at a higher level. Several of the groups of experiences with and causes of interruptions and fragmentation found in this research could be sorted into the interruption type *Intrusion*

mentioned by Jett and George (2003), such as the groups *Knowledge, Communication, Unplanned tasks,* and *Planning* with regard to the causes of work interruptions. The abovementioned causes force the individual to shift his or her focus for a shorter or longer period of time, thereby interrupting the task at hand. *Meetings* could potentially be associated with the interruption type *Break.* However, according to Jett and George (2003), breaks refer to anticipated or self-initiated time away from work. Meetings could be viewed as a break from work but also as work in their own right, which puts the interpretation of meetings as breaks into question. The academic staff described interruptions that can be sorted into the interruption type *Distractions* identified by Jett and George (2003), such as *Administration* and *Set-up time.* From the perspectives of teachers and researchers, administration naturally distracts from the primary tasks of teaching and doing research. On the other hand, from the perspective of administrative staff, administration is the primary task. The fourth type of interruption described by Jett and George (2003) is *Discrepancy*, which was found to be associated with the group of experiences caused by work interruptions and fragmentation: *(Over)ambition.* In this case, discrepancy indicates an inconsistency between one's own expectations and task-related observations related to, for example, teaching. The result of such inconsistency is the experience that more work must be done for the students to pass the course. However, this work might ultimately have no effect on the students´ performance in the course. Furthermore, certain groups of the causes of work interruptions mentioned by the academic staff do not fit into the four types of interruptions described by Jett and George (2003). These groups involve work conditions such as insufficient resources and disparate tasks as well as systems and processes that do not work. These results are only natural because the question that academic staff were asked to answer was "*What do you see as reasons for fragmentation? For yourself? For your colleagues?"*. However, these work conditions are important if a work balance, as described by Karasek and Theorell (1990) and Demerouti and Bakker (2011), is desired.

Strategies for managing work interruptions and fragmentation

According to the analysis, the strategies used to manage work interruptions and fragmentation were mostly individual strategies used to manage working time, which involved constant work and often failed. These strategies also pertained to individual persons' prioritization of their working tasks and their removal or minimization of certain elements of the work. The results gave the impression that staff worked on many tasks, which often involved different logics and were of an urgent nature. Awareness of the problems resulting from interruptions and fragmentation led to a tendency to respect all individuals' strategies, an approach that seemed to contribute to an individualization of the problem rather than opening up the possibility of collective strategies. This finding is in line with González and Mark (2004), who maintain that multiple activities take place in the context of academia, as well as Geschwind and Broström (2015), who reported a perceived misalignment between institutional incentives for individual academic staff and the needs of teaching. Thus, the need to start working with collective strategies and engage in mutual learning is evident; however, is this goal achievable in the context of academia, in which many researchers and teachers are individualists?

The results also emphasized certain aspects of leadership and collective strategies. One strategy thus identified involved supporting and leading. The heads of subjects were observed to have the responsibility to establish a collaborative culture and good working conditions. Other forms of supporting and leading involved helping and listening to each other, taking other people's lectures and showing confidence and trust. Collegiality was evident in examples such as planning together and engaging in active work in the college on major research applications.

In summary, two questions were asked as part of the workshop, and the analysis in two rounds

of the results contributed to an overall picture of the fragmented work situation faced by participating academic staff members at the Swedish university under study. The results indicate that academic work consists of many different tasks and that the planning of such work must be problematized to a higher degree. Staff members experienced central work planning as closer to "making the puzzle fit together" rather than starting from the individual's needs. A question that becomes relevant in this context pertains to whether the use of strategies to manage time are even possible; however, perhaps the question should instead focus on the organizational conditions under which it is possible to adopt individual strategies. Further research could therefore shift its perspective from individual strategies to collective strategies to promote greater collaboration in the context of planning time as well as ways of preventing interruptions and the fragmentation of work. We also agree with Geschwind and Broström (2015) that further research is necessary to improve our understanding of the strategies that should be used to reduce tensions between the needs of research and those of teaching.

5 References

Cardoso, S., Carvalho, T., & Videira, P. (2019). Is It Still Worth Working In Academia? The Views from Portuguese Academics, *Higher Education Policy*, *32*(4), 663–679. https://doi.org/10.1057/s41307-018-0123-7

Chisholm, R. F., & Elden, M. (1993). Features of emerging action research. *Human Relations, 46*(2), 275-298. https://doi.org/10.1177/001872679304600207

Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology*, 37(2), e01-e09. https://doi.org/10.4102/sajip.v37i2.974

Enwereuzor, I. K. (2022). Don't overstay your welcome! When workplace intrusions spark job apathy. *Current Psychology*, 1-15. https://doi.org/10.1007/s12144-022-03624-8

Eurofound (2021). Working conditions and sustainable work: An analysis using the job quality framework, Challenges and prospects in the EU series, Publications Office of the European Union, Luxembourg.

Francois, A., Hebbani, A., & Rintel, S. (2013). Facebook in the university workplace. *Media International Australia*, *149*(1), 15-27.

Geschwind, L., & Broström, A. (2015). Managing the teaching–research nexus: Ideals and practice in research-oriented universities. *Higher Education Research and Development*, *34*(1), 60–73. https://doi.org/10.1080/07294360.2014.934332

González, V. M., & Mark, G. (2004). 'Constant, Constant, Multi-Tasking Craziness': Managing Multiple Working Spheres. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 113–120. https://doi.org/10.1145/985692.985707

Haq, I. U., Zainab, B., Jan, J. A., Anwar, F., & Sharif, I. (2021). Hindrance Stressors and Job Outcomes: The Moderating Role of Political Skills. *Journal of Employment Counseling, 58*(3), 98-118. https://doi.org/10.1002/joec.12168

Jett, Q. R., & George, J. M. (2003). Work interrupted: A closer look at the role of interruptions in organizational life. *The Academy of Management Review, 28*(3), 494–507. https://doi.org/10.2307/30040736

Johansson, P. E., & Wallo, A. (2020). Exploring the work and competence of interactive researchers. *Journal of Manufacturing Technology Management, 31*(8), 1539-1559. https://doi.org/10.1108/JMTM-09-2018-0307

Karasek, R., & Theorell, T. (1990). *Healthy work : stress, productivity, and the reconstruction of working life*. Basic Books.

Leroy, S., & Glomb, T. M. (2018). Tasks Interrupted: How Anticipating Time Pressure on Resumption of an Interrupted Task Causes Attention Residue and Low Performance on Interrupting Tasks and How a 'Ready-to-Resume' Plan Mitigates the Effects. *ORGANIZATION SCIENCE, 29*(3), 380–397. https://doi.org/10.1287/orsc.2017.1184

Mark, G., Gudith, D., & Klocke, U. (2008). The Cost of Interrupted Work: More Speed and Stress. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 107–110. https://doi.org/10.1145/1357054.1357072

McClean, S. T., Koopman, J., Yim, J., & Klotz, A. C. (2020). Stumbling out of the gate: The energy-based implications of morning routine disruption. *Personnel Psychology, 74*(3), 411-448. https://doi.org/10.1111/peps.12419

Ohlsson, J., & Johansson, P. (2010). Interactive Research as a Strategy for Practice-based Learning: Designing Competence Development and Professional Growth in Local School Practice. In: Billett, S. (eds*) Learning Through Practice. Professional and Practice-based Learning*, vol 1. Springer, Dordrecht. https://doi.org/10.1007/978-90-481-3939-2_13

Pendem, P. K., Green, P. I., & Staats, B. R. (2022). The Microstructure of Work: Understanding Productivity Benefits and Costs of Interruptions. *Manufacturing and Service Operations Management*, *24*(4), 2202–2220. https://doi.org/10.1287/msom.2021.1053

Poutanen, M. (2023) 'I am done with that now.' Sense of alienations in Finnish academia, *Journal of Education Policy*, *38*(4), 625–643. https://doi.org/10.1080/02680939.2022.2067594

Puranik, H., Koopman, J., & Vough, H. C. (2020). Pardon the Interruption: An Integrative Review and Future Research Agenda for Research on Work Interruptions. *Journal of Management, 46*(6), 806–842. https://doi.org/10.1177/0149206319887428

Rogers, A. P., & Barber, L. K. (2019). Workplace intrusions and employee strain: the interactive effects of extraversion and emotional stability. *Anxiety, Stress, & Coping*, *32*(3), 312-328. https://doi.org/10.1080/10615806.2019.1596671

Rosen, M. A., Diazgranados, D., Dietz, A. S., Benishek, L. E., Thompson, D., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in Healthcare: Key Discoveries Enabling Safer, High-Quality Care. *American Psychologist*, *73*(4), 433-450. https://doi.org/10.1037/amp0000298

Shani, A. B., Mohrman, S. A., Pasmore, W. A., Stymne, B., & Adler, N. (Eds.). (2007). *Handbook of collaborative management research*. Sage Publications.

Sonnentag, S., Reinecke, L., Mata, J., & Vorderer, P. (2018). Feeling interrupted—Being responsive: How online messages relate to affect at work. *Journal of Organizational Behavior*, *39*(3), 369–383. https://doi.org/10.1002/job.2239

Svensson, L., Ellström, P. E., & Brulin, G. (2007). Introduction on interactive research. *International journal of action research, 3*(3), 233-249.

Warhurst, C., Wright, S., & Mathieu, C. (2022) Job quality- a family affair? In Warhurst, C., Mathieu, C. & Dwyer, R.E. (eds.) T*he Oxford Handbook of Job quality*. Oxford University Press.

Wilkes, S. M., Barber, L. K., & Rogers, A. P. (2018). Development and validation of the Workplace Interruptions Measure. *Stress and Health, 34*(1), 102–114. https://doi.org/10.1002/smi.2765