Academic Work – Something else?

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ABSTRACT

Purpose – Academics can be defined as knowledge workers, but not all knowledge workers are academics. The academic workplace has for a long time been associated with individual cellular offices. There is now a change in space demand, which is a result of new ways of working, technology, more collaborative activities etc. There is not much research specifically on what academic workers actually do, and how they do their work. This paper looks at academic work and academic practice to map the different activities taking place in the academic workplace. It investigates if academic work is something completely different from what literature defines as knowledge work and identifies similarities and distinctive features between the two, to help understand the academics' needs when planning academic workplaces for academics in the future.

Design/methodology/approach – The data collection for this paper is done through a literature study investigating knowledge work and academic work. The findings from the literature on academic work are supplemented with findings from ten semi-structured interviews with academic staff from different academic disciplines at the Norwegian University of Science and Technology.

Findings – The findings show that there are both expected similarities, but also variations between knowledge workers and academics. Concentration work is an important part of both knowledge work and academic work. One prominent difference between knowledge work and academic work is identified as the constant alternation between supervising students, deep concentration work, and the need to access sources such as books and archives, as well as academics' close link to practice through e.g., fieldwork or laboratory experiments.

Originality/value – The findings in this paper offer practical possibilities in the studies of workplace management, facilities management, real estate development, campus development and other studies of the built environment.

Keywords

Academic Work, Academics, Academic Practice, Knowledge Work, Workplace

1 INTRODUCTION

Traditionally, at least in Western countries, academics have had a long tradition of defining individual cellular offices as their workspace. This has been related to a perception that academic work consists of lonely individuals sitting concentrated and immersed surrounded by their books and other artefacts in their offices. This tradition of individual offices and the predominance of working in solitude is now being challenged in multiple ways (Wilhoit et al., 2016). Technology has significantly influenced how we work. It has made employees more mobile, and new ways of teaching, both digital and hybrid, have emerged from the use of technology (Weijs-Perrée et al., 2018). Further, collaborative, and interdisciplinary research activities have increased in academia to be able to adequately address problems that cannot be solved by one discipline alone (Reich & Reich, 2006). In addition, an increasing focus on sustainability has resulted in a greater awareness of the use of areas and resources, and we now realise that buildings need to be utilised more efficiently.

Academics can be defined as knowledge workers, but not all knowledge workers are academics. Although there is a growing body of literature on the academic workplace, much of the research on workplace design has been focused on more traditional fields of office workplaces, especially in the private sector, and not on public academic institutions. De Been et al., (2016) stated that even though there is quite a lot of research on how the built environment influences labour and productivity in organisations, there is still a need for more research on "The differentiation in understanding individual needs and preferences of different groups […]" (De Been et al., 2016, p. 151). There might be large variations among employees in one single company (van der Berg, et al., 2020). Design of office workplaces has to a large degree been based on standardisations of solutions to achieve flexibility and mobility from an understanding that the work activities and -processes, simply put, pretty much are the same for everyone. The findings in this paper show a large variety of activities and processes within one organisation. In the Norwegian University of Science and Technology (NTNU) campus development project, today's practice and understanding of knowledge work in academia are being challenged. The discussion amongst the university staff regarding the academic workplace has mostly been related to the individual office and a fear of being deprived of this. The discussion has quickly become one-sided and unvarnished where the stakeholders refer to different studies that defend one point of view or the other.

This paper focuses on academic work and academic practice to map and understand the different activities taking place in the academic workplace and within different academic disciplines. It investigates if academic work is something completely different from what literature defines as knowledge work and identifies similarities and distinctive features between the two to better understand the academics' needs when planning academic workplaces in the future.

2 THEORETICAL FRAMEWORK

This section will look at knowledge work and academic work to form a base for the discussion.

2.1 Knowledge Work

Since the late 1990s knowledge in organisations has been viewed as an important corporate asset and a competitive advantage (Davenport & Prusak, 1998). Davenport et al. (1998) described knowledge as information combined with experience, context, interpretation, and reflection. The term "knowledge work" refers to work that occurs primarily from mental processes rather than

physical labour (Kelloway & Barling, 2000; Heerwagen et al., 2007). According to Reinhardt et al., (2011, p. 150), what characterises knowledge work "[…] is the perennial processing of non-routine problems which require non-linear and creative thinking". This characterisation and the fact that knowledge workers primarily rely on their brains in their work often causes knowledge work to be less structured, as well as harder to structure, than administrative or production work (Davenport, 2005). Knowledge work activities focus on thinking, problem-solving, collaborating and networking (van der Berg et al., 2020). It is perceived as high-level cognitive work and involves concentration activities such as reading, research and reflection on ideas from their memory, but also mundane tasks such as making calls or answering e-mails. Collaboration, interaction, and networking with colleagues to develop ideas are important parts of knowledge work (Heerwagen et al., 2007). De Been et al. (2016), found that support for concentration and communication is what people considered most significant for their productivity in the office.

2.2   Academic Work

In this paper academic work refer to work conducted by scientific staff in a university or higher education, and whose primary activities are to generate, preserve and disseminate systematic knowledge.

Academic work consists of a large variety of activities, and depending on their job description their day often includes activities such as teaching, research, supervision, administrative tasks, committee work etc. (Macfarlane, 2010). An assumption about academic work is that it consists of workers sitting in their offices doing research, and sometimes leaving their offices to give lectures or attend meetings. Academic work is more complex than this, and knowledge creation rarely happens in solitude in an office, but rather in many different interfaces. These interfaces might be with colleagues, students, during fieldwork, laboratory work etc. (Macfarlane, 2010; Teichler et al., 2013). In a study by Huhtelin and Nenonen (2019) on researchers in different disciplines, they found that the majority of the respondents required both concentration and interaction in their research activities. Studies have shown that academics usually find themselves in their offices only about 30-40% of the workday. This is not because they are not working, but simply because they are conducting their work in other places. They might be away giving lectures, attending meetings, supervising students, travelling, presenting at conferences etc. (NTNU, 2018; Häne et al., 2020). Also, different academic disciplines work in various ways and while some mainly do research in their offices, others do research in e.g., laboratories, studios, fieldwork, or different kinds of workshops.

3   METHODOGICAL APPROACH

This paper aims to investigate academic work and practice, and whether academic work is something completely different from what literature defines as knowledge work. To identify similarities and differences between knowledge work and academic work a literature search was performed investigating the terms knowledge work/workers and academic work/workers. The initial search consisted of wide terms; "knowledge", "knowledge work*", "academic work*", "academic practice*", "knowledge work characteristics" and "academic work characteristics". The truncation symbol * was used to broaden the search results. This resulted in many hits and a variety of journal articles and books. To limit the search 3-5 articles per search term were scanned. For some of the search terms, the same authors and/or definitions appeared, and the search continued

by reading through the references of the selected papers to find relevant literature, preferably published after the year 2000.

The findings in this paper are mainly based on ten in-depth interviews with academic staff from different professional disciplines at NTNU. The selection of informants was based on NTNU's campus development project, where eight academic clusters have been defined. These clusters consist of disciplines that are perceived to have some common characteristics and are expected to have great opportunities for collaboration and interdisciplinarity, both for students and employees. The achieved selection for this paper represents six of these clusters and is shown in Table 1. The two clusters that are not represented in this paper are Teacher Education and Health and Social Sciences. The cluster KAMD consists of disciplines within art, architecture, music and design, and the cluster HumSam consists of disciplines within Humanities and Social Sciences. Here three interviews were conducted to get an understanding of the width within these clusters.

Table 1. Overview of informants with abbreviations and which cluster they belong to.

Informant	Cluster
KAMD1	KAMD (Art, Architecture, Music, and Design)
KAMD2	KAMD
KAMD3	KAMD
HS1	HumSam (Humanities and Social Sciences)
HS2	HumSam
HS3	HumSam
E	Engineering
NS	Natural Sciences
EI	Economy and Innovation
IET	Information Technology and Electric Engineering

Due to the lock-down caused by Covid-19 five of the interviews were held digitally. The other five took place in the informants' offices. The themes in the interviews were the informants' workday, their feelings towards their office, interdisciplinarity and innovation, and their thoughts about the campus development project at NTNU. The interviews were recorded and transcribed word by word. The analysis of the interviews was done by using the data analysis software NVivo.

4   FINDINGS FROM INTERVIEWS

All informants for this paper hold positions that include 45% teaching, 45% research and 10% administrative work. Dissemination of research is one of the university's core activities, and therefore the findings are presented in the categories "Teaching", "Research, "Dissemination" and "Administration". The informants are referred to with their abbreviations in capital letters, and the explanation can be found in Table 1.

4.1   Teaching

All informants explained that teaching includes activities such as preparing and giving lectures, supervision, and grading. All informants except KAMD1 have classrooms or auditoriums as their main location for lectures, while KAMD1 use design studios for most of the lectures. Informants HS1-HS3, E and EI primarily have a theoretical approach to teaching, while KAMD1-KAMD3,

NS and IET have a practice-based approach. All informants except HS1, HS2 and EI need rooms with special functions in their teaching, such as laboratories, workshops, studios etc. NS is the only informant that needs a traditional scientific laboratory, while the other laboratories that are mentioned are rooms intended for a certain type of use. Informants KAMD1, KAMD3, HS3, E, NS and IET have fieldwork as a part of their teaching, and the extent of the fieldwork varies from big projects to observation studies, to sample collection. KAMD1 explained that their teaching to a high degree is project-based, and both individual and group supervision is a central part of the students' education.

Informant HS1-HS3 explained that they focus on being innovative in teaching rather than in research, and this is related to their field's research traditions. They describe innovation in teaching as engaging students in the learning process on a larger scale than before. They mention flipped classroom where they produce videos or podcasts for the students so they can prepare in advance and have more discussions or student presentations in class rather than just listening to the professor. They also mention using digital tools such as Mentimeter to quiz the students and map their knowledge level to better adapt the lectures to the students' needs. They work on moving away from traditional written exams, and rather have deliveries of smaller assignments throughout the semester, as a basis for the final grade. All informants explain that they primarily carry out supervision in their offices, or meeting rooms if they are available. The informants were asked if they believed covid-19 would change today's teaching practice. They all agreed that it was practical to have digital supervision, but they still prefer physical lectures over hybrid and fully digital lectures. They experienced that the students did not speak up as much in these lectures as they would in the classroom, and the lecturer thereby felt they held monologues rather than interactive lectures.

4.2   Research

The informants explain that research includes activities such as data collection, reading, writing, reflection, analysis, and collaboration with others. They define reading, reflection and writing as concentration work, which usually is carried out in their offices with the door shut, or in their home office to ensure silence which is described as a necessity for effective concentration work. The most prominent differences between the informants' research activities are where and how they perform their data collection. Informants KAMD1-3 and E explain that their data collection takes place in different kinds of workshops, in laboratories or during fieldwork, and that their research is close to practice. Informant HS1 and HS2 mostly use written materials and work with this data from their offices, in archives, or the library, and their research has a theoretical approach. Informant HS3 has some commonalities with informant HS1 and HS2, but in addition, they do fieldwork and use computer software to develop and analyse their data. Informant EI describes the research at the department as fragmented and ranges from research on organiations, strategy, finance etc. Informant NS and IET traditionally carry out their research in laboratories or workshops, whereas informant NS needs a traditional scientific laboratory, and IET needs dedicated spaces to conduct experiments with technical inventions.

KAMD1-3, E and EI view innovation as the creation of something new in research, and not as commercial innovation. Informants NS and IET explain that their disciplines have an extreme focus on innovation and see this as one of the core activities in their research, and they also focus on commercial innovation and patenting. All informants see the value and importance of

interdisciplinary research, but for some disciplines, such work comes more naturally than for other disciplines. For instance, informant NS and IET focus a lot on interdisciplinarity in research, and together with informant HS3, they see interdisciplinarity as a characteristic of their academic practice. These interdisciplinary projects are in collaboration with other departments at NTNU, industry or universities in other countries. Informants KAMD1-3 inform that they do some interdisciplinary research, but they have the potential to expand in this field. Informant E often collaborate with both public and private industry, while informants HS1 and HS2's research activities are mono-disciplinary by nature.

4.3   Dissemination

Dissemination of research is described as a very important part of academic work by all the informants. They publish in journals, books, or newspapers, and present at conferences, podcasts, or arrange different exhibitions. Informant HS1 and HS2 deviate from the rest of the informants; within their disciplines monographs and individual projects are most common. Their research is more often published in books rather than journals, and both informants explain that they write chronicles for the local newspaper if they feel they can contribute to the public debate. Informant IET explains that a characteristic of their academic practice is that in their discipline researchers publish "extremely much", and their footprint online and internationally is more important than having a big corner office in the university. Their research is almost always interdisciplinary, and the co-authors are often outside national borders. Informant NS works in a discipline where publications often are interdisciplinary, and have many authors, both nationally and internationally. Informant KAMD1 and KAMD2 often produce models, physical works, or audio, but also journal articles and conference papers. Informants KAMD3, HS3, E and EI mostly publish in journals and present at conferences, often in collaboration with colleagues.

4.4   Administration

Administrative tasks involve committee work, writing reports, evaluation of subjects, writing job advertisements and hiring new colleagues, revising education plans or curricula, as well as mundane tasks such as internal meetings, answering e-mails or making calls. The informants view these tasks as something they just have to do, it does not need a high degree of concentration and can be performed "everywhere". All informants see the importance of administrative work as a form of quality assurance for both teaching and research. Administration in teaching is mostly related to the evaluation of students' works, and evaluation of subjects in reference groups which should be uploaded into different systems. The informants say that this is a good way to secure the quality of the education, but they experience that it takes more time than scheduled and that this is valuable time that rather could be used to do research or develop lectures. Only informant HS3 said that the administrative work did not take more time than what is expected and could not see why many colleagues experienced administrative tasks as so time-consuming.

5   DISCUSSION

The findings show both similarities and differences between knowledge work and academic work. The literature presents knowledge work as work that occurs primarily from mental processes rather than physical labour, and that such workers have high degrees of expertise, education, and/or experience, and the primary purpose of their work involves creation, distribution and/or application of knowledge (Davenport, 2005; Heerwaagen et al., 2007). This also applies to

academic work (Macfarlane, 2010), which in the findings is presented as teaching, research, dissemination, and administration.

Concentration is an important part of both knowledge work and academic work (De Been et al. 2016; Huhtelin & Nenonen, 2019). From the interviews, it was found that the informants consider reading, reflection and writing as activities that demand concentration and therefore silence, which is similar to knowledge work (Heerwaagen et al., 2007). The informants explained that they found themselves in multiple locations during the workday. The office or home office is their preferred space for concentration work, but when doing data collection or teaching they often find themselves in other places than their offices, which might explain the low utilisation rate in offices documented in different studies (e.g., Häne et al., 2020).

The literature search showed that knowledge work and academic work both consist of a large variety of activities with frequent shifts between them (Heerwagen et al., 2007). From the interviews, it can seem that these shifts are more frequent in academic work regarding where the tasks are conducted, with whom, and the content of the activities. Supervision of students' work is a large part of the academics teaching duties (Macfarlane, 2010). Academic work consists not only of switching between concentrative research activities and administrative tasks but also teaching and supervision activities, which differs from traditional knowledge work. Some academic work is closely linked to practice in form of fieldwork, laboratory experiments and artistic or architectural practice, which differ from the traditional definition of knowledge work.

A common feature between knowledge work and academic work is the need for interaction. Knowledge workers have a large degree of interaction in their work to exchange and develop ideas (Heerwagen et al., 2007; Huhtelin & Nenonen, 2019). Contrary to belief, academic work does not only take place as an individual activity in their respective offices but happens in many different interfaces, e.g., while meeting students or colleagues for discussions or in different research projects. The findings from interviews illustrate that there is variation in the degree of interaction within the different disciplines, where some are always interacting with colleagues in their research (informant NS and IET), while others work more monodisciplinary (informant HS1 and HS2), which the informants see as natural depending on their discipline's traditions.

NTNU is a university with a large width ranging from technology and natural sciences to the humanities and social sciences, and the interviews uncovered similarities and differences within the academic clusters as well. The largest differences are found in teaching and research activities, while dissemination and administrative activities are quite similar across the clusters. As a result, there are variations in needs and research methods between the different academic disciplines. The findings showed a variation in approach to teaching and research ranging from theoretical to practice-based, and the needs for specialised areas ranged from none to laboratories with heavy technical infrastructure. What all the academic clusters do have in common is that they all perform the four core activities of teaching, research, dissemination, and administration in their job, but how this is expressed varies and depends on the different disciplines' traditions and practices.

6   CONCLUSION

For this paper, only a small selection of the university's academic workforce was interviewed. The findings show that academic work represents a large variety of activities and practices related to teaching, research, dissemination, and administration both within each discipline and across the disciplines. Further, that academic work is not completely different from knowledge work. There are differences, but also several similarities. But what does this mean for workplace design in academia? Until now, most of the discussions related to the campus development, at least from the academics' point of view, have been related to their individual need for cellular offices, especially for concentration work and student supervision. Consequently, the other aspects of academic work have ended up in the background. In addition, existing practice is now being challenged by e.g., technology and new ways of working. The findings both from the literature and the interviews underline the importance and need of working more interdisciplinary, closer to industry, and across countries to solve complex challenges. To design workplaces for academic staff one really need to understand what kind of activities take place in such a workplace. After seeing the large variety in the findings from the interviews, it has become clear that there are many different needs within the organisation, and that standardisation is not the best solution when designing academic workplaces. Academic work is not something completely different from knowledge work, but to base workplace design for academic staff only on experiences from traditional knowledge workplaces might be a too easy resort.

This paper was limited to knowledge workers' and academics' work activities to be able to better understand their work activities and needs and did not focus on their physical workplace. For future research, it will be interesting to translate these findings into the physical workplace and investigate what this means for academic workplace design.

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