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Perceived impact of flipped classroom on university teachers' teaching job demands and resources

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Abstract

Flipped classroom (FC) is a teaching method in which students come prepared to the classroom and start learning before the formal teaching situation. While its effects on the university students have been studied, there is a research gap regarding how FC affects university teachers' job resources and demands. The aim of this study is to discover how university teachers experience teaching job demands and resources while implementing FC, and to identify what kind of demands and resources they describe. The data were gathered by interviewing university teachers (*N* = 9), who participated in an FC-pilot and received additional resources and support from a mentor. Interviews were analysed with qualitative content analysis to examine teachers' descriptions of job demands and resources related to FC implementation. Four main categories concerning resources and demands were established: 1) Social 2) Teaching work 3) Organisational and 4) Developmental. The findings suggest that, in this supported FC-pilot context, teachers perceived FC as being associated with several job resources and demands. Teachers more frequently described FC-related experiences as resources than as demands.

Keywords: flipped classroom; job demands and resources model; higher education; university teachers

Introduction

Universities are striving to provide high-quality teaching, and various pedagogical approaches are being implemented to enhance teachers' pedagogical expertise. Flipped classroom (FC) is seen as one way of promoting learning and transforming teaching. The effects of FC have been studied extensively from the students' perspectives (Akçayır & Akçayır, 2018; ElGamal & Zawacki-Richter, 2025; Sointu et al., 2019, 2023), and the teachers' perspectives have also been studied in higher education settings (Kankaanpää et al., 2025; Väisänen & Hirsto, 2020). However, there is a research gap regarding FC's potential benefits and hindrances for teachers' work. This study addresses this gap by examining how university teachers experience job demands and resources while implementing FC. By applying job demands and resources framework to FC, the study contributes to the literature by offering new insights into how this pedagogical approach shape teachers' work.

Flipped classroom (FC) and flipped learning (FL) are two distinct concepts (FLN, 2014). FC focuses on the practices teachers utilise while teaching, such as designing pre-, in- and post-class assignments. FL is a pedagogical approach in which students prepare for class in advance, and the learning situations are dynamic, interactive and flexible facilitated by the teacher (FLN, 2014). FC activities may, but not automatically, lead to FL (FLN, 2014). In this study, the interviewed teachers were familiar with FL design, but students' learning outcomes were not examined. Therefore, the FC is used throughout this article to reflect the focus on teaching practices rather than learning outcomes.

FC is a teaching method in which the learning process begins before the classroom sessions (Mok, 2014; Sointu et al., 2019). Typical for the FC approach is to utilise pre-materials such as pre-readings, e.g., scientific articles and videos (Khanova et al., 2015; O'Flaherty & Phillips, 2015). Watching videos before actual face-to-face learning sessions is argued to support participation in learning activities, and hence achieve set goals for the students' own learning (González-Gómez et al., 2016). FC enables opportunities for interaction between students and teachers (Akçayır & Akçayır, 2018; Flores et al., 2016). It has been suggested that FC and learning would be a good way of transforming teaching towards being more student-centred (Bashir & Hamid, 2021; Gilboy et al., 2015; González-Gómez et al., 2016; Hao, 2016; Mingorance Estrada et al., 2019) and enable increased personalised learning (Akçayır & Akçayır, 2018). The FC approach has been suggested to be an efficient way to support students' learning (Abeysekera & Dawson, 2015; Sointu et al., 2019). With the help of the FC different skills can be taught, such as a variety of domain specific and 21st century skills; for example communication, collaboration, critical thinking and problem-solving skills (Bredow et al., 2021; Kantanen et al., 2019; Väisänen & Hirsto, 2020; Voogt & Roblin, 2012).

In the FC design, the teacher is seen as an instructor who utilises students' previous knowledge in class activities (Long et al., 2017). According to previous studies (e.g., Ansori & Nafi', 2018), the FC approach might enhance students' sense of responsibility for their own learning and makes students more active in their own studies. The FC method can also support the teacher's ability to use class time more efficiently, since there is time for student-centered learning activities, i.e., various hands-on activities, discussions and feedback (Akçayır & Akçayır, 2018; Kankaanpää et al., 2025). When comparing to traditional teaching methods, teachers often perceive FC's lessons more interactive and collaborative (Cevikbas & Kaiser, 2020; Long et al., 2017).

Perceived impact of flipped classrooms

Nevertheless, some university teachers experience challenges when implementing FC. Previous research proposes that some teachers perceive FC as more time-consuming and producing more workload, for example, when making pre-material videos (Akçayır & Akçayır, 2018; Kankaanpää et al., 2025; Long et al., 2017). When implementing FC, sufficient time for pedagogical (re-)design, and interactive classroom activities, is needed (Baig & Yadegaridehkordi, 2023; McLaughlin et al., 2016). Teachers may encounter technical and technological challenges, such as over-reliance on applications, lack of skills, or lack of technological tools (Akçayır & Akçayır, 2018; Ansori & Nafi', 2018; Baig & Yadegaridehkordi, 2023). Teachers are reported to see the benefit of video recordings that allow students to re-watch and recap information (Ansori & Nafi', 2018), but there might be challenges if the quality is not sufficiently high to keep students interested (Baig & Yadegaridehkordi, 2023). There have also been studies that have revealed the effects of the FC model on students' learning have been mixed or theoretically lacking (e.g., Bredow et al., 2021; ElGamal & Zawacki-Richter, 2025; Låg & Sæle, 2019).

Teachers might not be prepared to change their teaching methods or do not have the required resources to do so. Because university pedagogy training is voluntary in some countries, some teachers might not have participated in any pedagogical training (Murtonen & Vilppu, 2020). It has been suggested that it would be beneficial to have instructor training to enhance the pedagogical value of learning materials and their implementation (McLaughlin et al., 2016). However, teachers do not always have official help from their community or faculty to support their pedagogical development (Murtonen & Vilppu, 2020). Teachers see opportunities to interact with each other as important, and a lack of such possibilities can be detrimental (Englund et al., 2018; Myllykoski-Laine et al., 2023).

Job demands and resources model

Trying new teaching methods may ease or burden university teachers' work. Therefore, the job demands and resources (JD-R) model was adopted to examine FC's potential benefits and hindrances for teachers' work. According to the JD-R model, two primary factors influence job strain: job demands and job resources (Demerouti et al., 2001). Excessive job demands can lead to exhaustion, while insufficient resources can result in disengagement (Demerouti et al., 2001). Subsequent research has refined the model, showing that adequate job resources can lead to positive outcomes such as commitment (Bakker et al., 2003), engagement (Schaufeli & Bakker, 2004), and motivation (Bakker & Demerouti, 2007).

The job demands are the elements of the workplace which require continuing physical or mental efforts, including physical, social or organisational components (Bakker et al., 2003; Schaufeli & Taris, 2014). The job demands can increase exhaustion and job strain which can lead to burnout and health problems (Bakker et al., 2003; Demerouti et al., 2001; Schaufeli & Taris, 2014). Job demands might also have some positive effect on motivation by giving sufficient challenges to employees (Schaufeli & Bakker, 2004; Schaufeli & Taris, 2014).

Job resources are the positive physical, psychological, social, or organisational components of the job which help to achieve the work goals, decrease the job demands and stimulate personal growth and development (Demerouti et al., 2001; Schaufeli & Taris, 2014). Job resources have been found to lead to increased motivation and commitment to work and to the organisation (Bakker et al., 2003). Schaufeli et al. (2017) in their study categorises resources as being social, work orientated, organisational and developmental.

The JD-R framework is particularly suitable for this study because implementing FC may simultaneously create new job demands and new job resources for university teachers. For example, redesigning a course, preparing pre-class materials, using digital tools, and guiding students in a new pedagogical format may increase workload and cognitive demands. At the same time, FC may provide resources such as increased autonomy, richer interaction with students, collegial support, opportunities for professional learning, and a clearer pedagogical structure. The JD-R framework therefore offers a useful analytical lens for examining how teachers make sense of FC as part of their work.

Aim of the study

The aim of the study is to explore teachers' experiences as regards job demands and resources when they are implementing the FC method in their teaching. The following research questions were implemented:

(RQ1) Which job demands and resources do teachers mention when describing their experiences with the FC method?

(RQ2) What kind of impact do university teachers describe that FC had on their experienced job demands and resources?

Methodology

Participants

The participants (*N* = 9) were teachers from engineering fields, such as mathematics, physics, and technics, who took part in an FC-pilot at one Finnish University. All teachers participated voluntarily, they were given information about the study and provided their informed consent before the interviews. The teachers participated in the FC-pilot, after which the data were then collected. The teachers had different amounts of pedagogical training varying from 25 study credits (ECTS) to 60 ECTS and the distribution of their years of experience ranged from 2–15+ years. Teachers, who took part in the pilot, were allocated 160–180 working hours to develop and prepare the materials for their courses.

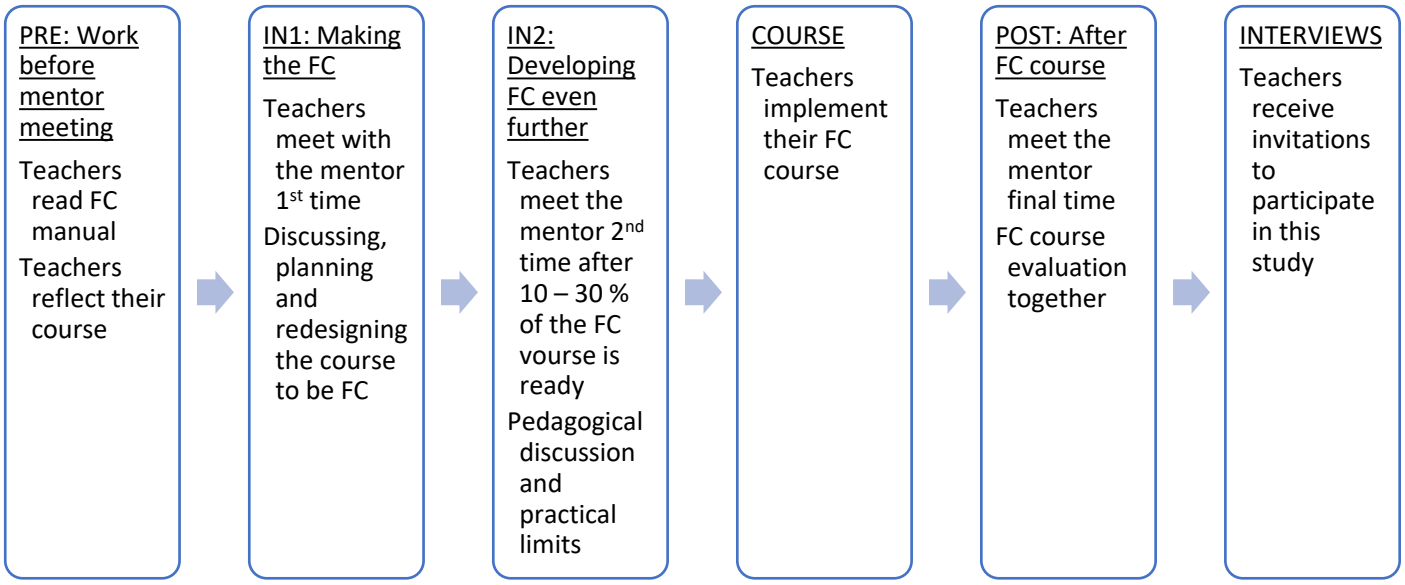
The flipped classroom pilot with a mentor

The FC-pilot had three main phases PRE-IN-POST (Figure 1). The PRE-phase was an orientation, where teachers familiarised themselves with the FC manual (Sointu et al., 2021) and reflected on their course based on the material. The 'IN'-phase was for the development and redesigning of the course with the mentor. The mentor was the same for all participating teachers and had considerable experience of training teachers in FC methods. The goal was to help teachers to develop their pedagogical knowledge, facilitate the process of the pilot and support university teachers. The participants met the mentor at least three times, twice in the 'IN'-phase and once in the 'POST'-phase. They talked about communication, students' learning outcomes (e.g. González-Gómez et al., 2016), self-regulated learning (e.g. Akçayır & Akçayır, 2018) and teacher as facilitators of learning (e.g. Ansori & Nafi', 2018; Long et al., 2017). They also discussed the challenges, available resources and how to make lesson materials. Subsequently, the teachers planned and developed their course independently and the next mentor meeting (IN2) was

scheduled when approximately 10–30% of the course had been designed. Teachers had a draft of the course, and the mentor helped them to facilitate and develop material. The third meeting took place after the course in the 'POST'-phase, where the teacher and mentor had thorough course evaluation together.

Figure 1

The pilot progress



Data collection

The interviews with the university teachers were conducted between 2020 and 2021 after the teachers had completed the FC-pilot project. The structured interview included questions regarding the implementation of the FC course. These questions included: the use of ICT and digital learning environments, how peers and students related to FC, the pedagogical perspectives, and the experience of FC as a tool for developing teaching and personal competences. The structured interview used was modified from the one previously employed at the University of the Eastern Finland (Väisänen & Hirsto, 2020). The length of the interviews (N = 9) ranged from 43 to 93 min, with an average of 62 min and a total time of 9 hours, 19 minutes, and 53 seconds. The interviews were audio-recorded digitally and transcribed into text files.

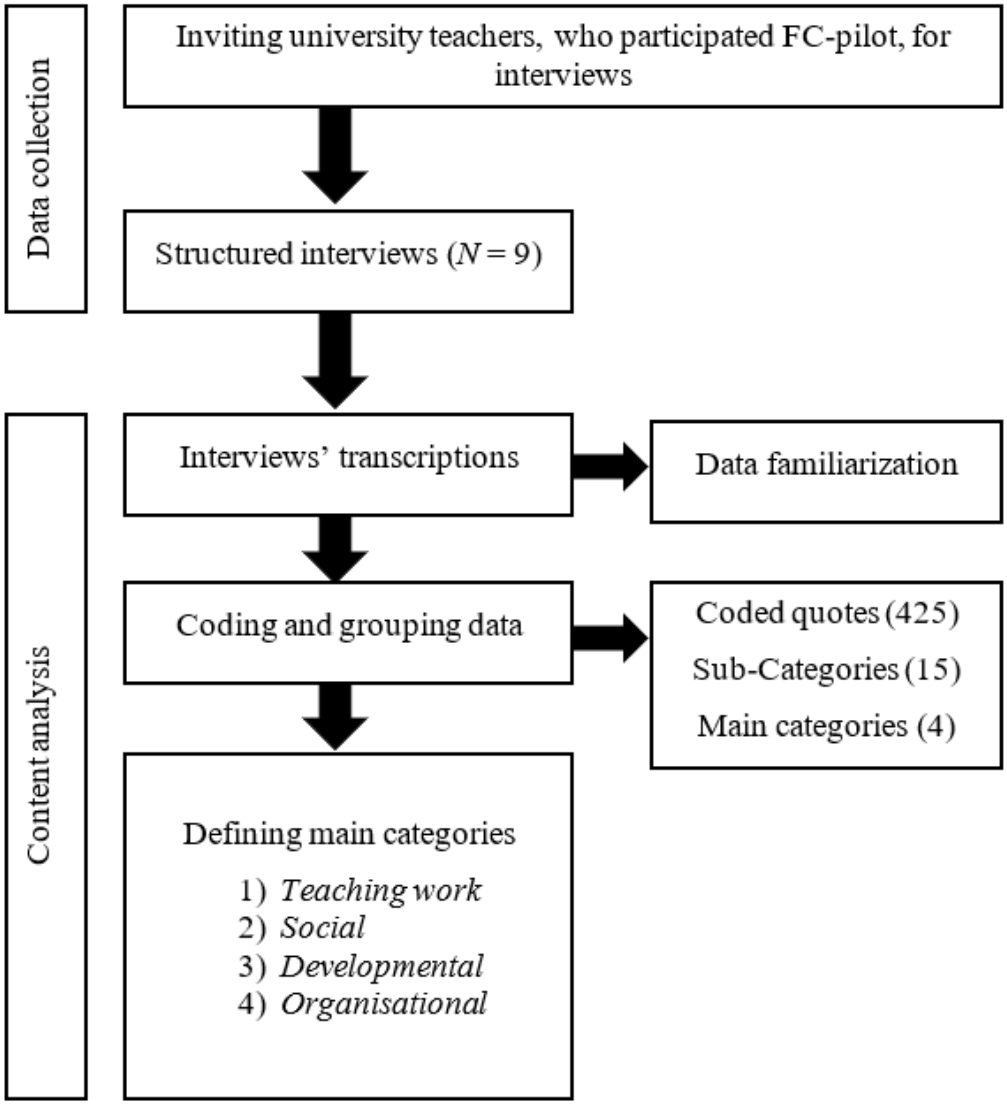
Analyses

The teacher interviews were analysed using the qualitative content analysis approach (Elo & Kyngäs, 2008) with ATLAS.ti software (version 23). The qualitative content analysis method was chosen for its flexibility to make an efficient analysis of the data. The data collection and qualitative content analysis process is shown in Figure 2. The analysis combined data-driven coding with theory-informed categorisation. First, the interview transcripts were read several times to gain an overall understanding of the teachers' experiences. Meaning units related to job demands and job resources were then identified and coded in ATLAS.ti. These initial codes were grouped into sub-categories based on similarities in content. In the next phase, the sub-categories were compared with the JD-R framework and organised into broader categories describing social,

teaching work, organisational, and developmental resources and demands. Thus, the analysis was not purely deductive, as the sub-categories were developed from the interview data, but the interpretation and higher-level organisation of the categories were informed by the JD-R model.

Figure 2

The data collection and content analysis process



Results

Identified job demands and resources in flipped classroom teaching

In the analysis process four main categories were created for the job demands and resources which were based on the data and complemented by a theoretical approach: 1) Social 2) Teaching work 3) Organisational and 4) Developmental. The categories and sub-categories for the job resources and demands together with excerpts are presented in Table 1.

Table 1

The categories and sub-categories for the job resources and demands

Category 1: Social resources and demands				
Sub-categories	Resources (*n*)	Demands (*n*)	Example of resources	Example of demands
a1) Co-worker and supervisor support	28	16	'*The cooperation between the teachers was like the best thing I've ever experienced.*' (Sub-Category: a1) – Teacher 5	*'Now there are perhaps a bit too many teachers in this flipped teaching group, because there are 6 of us now… …So, it's a bit too much now, in terms of coordinating schedules.'* (Sub-Category: b1) – Teacher 3
b1) Role clarity	24	9		
c1) Recognition	4	0		
d1) Team atmosphere	11	3		
e1) Team effectiveness	22	3		
Altogether	89	31		
Category 2: Teaching work resources and demands				
Sub- categories	Resources (*n*)	Demands (*n*)	Example of resources	Example of demands
a2) Use of skills	29	16	'*As an experience, it has been very rewarding in the sense that you have had to think about how to get the student to learn the subject as effectively as possible.*' (Sub-Category: d2) – Teacher 1	*'In the beginning it was a bit of a mess, because it was new to everyone, including teachers but also students, so it was a bit confusing.'* (Sub-Category: e2) – Teacher 7
b2) Job control and participation in decision making	63	29		
c2) Availability of tools	18	23		
d2) Task variety	7	6		
e2) Fulfilment of expectations	20	6		
Altogether	137	80		
Category 3: Organisational resources and demands				
Sub- categories	Resources (*n*)	Demands (*n*)	Example of resources	Example of demands
a3) Communication	37	12	*'It's amazing that if we have a course of 350 students and the teacher knows the*	*'Unfortunately, I think these are the kind of things that are so badly related to*
b3) Financial assets	1	29		

Altogether	38	41	*students by name. It gave me so much information as a teacher about the level of these students.'* (Sub-Category: a3) – Teacher 3	*money that you can't necessarily do them at university.*' (Sub-Category: b3) – Teacher 2
Category 4: Developmental resources and demands				
Sub- categories	Resources (*n*)	Demands (*n*)	Example of resources	Example of demands
a4) Career perspective	11	0	'*My digital skills have developed along the way, and I have noticed what I could still develop.'* (Sub-category: c4) – Teacher 9	'*And if you look at the averages, so in the first course of these four, the feedback was lower.*' (Sub-Category: b4) – Teacher 5
b4) Performance feedback	21	15		
c4) Possibilities for learning and development	26	1		
Altogether	61	16		

Social resources and demands

The first category consists of concerns about job demands and resources from the social perspective of teachers. Five sub-categories were constituted for this category, the first of which is 'Co-worker and supervisor support'. This sub-category related to FC as a resource appeared in comments made by teachers who had received support from their colleagues or supervisors and experienced that it decreased their job strain and increased their motivation. The experienced demands related to the 'Co-worker and supervisors support' were lack of support, or underestimation of FC by other peers, which led to decreased sense of belonging or increased mental demands.

The second sub-category is 'Role clarity', where teachers described their job more in terms of a facilitator. By doing so they experienced more opportunities to focus on students' learning, which they perceived as a resource. The role clarity also included those comments where teachers thought about the students and their more active role as learners. The demands classified in this category were comments about uncertainty concerning what to do as a teacher in certain teaching situations or concerning some students who did not take responsibility for their learning.

The third sub-category was entitled 'Recognition'. As a resource it is reflected in teachers' descriptions of their experiences with peers or students who acknowledged and appreciated their hard work. There were no remarks in this sub-category that were categorised as a demand.

The fourth sub-category was 'Team atmosphere'. This sub-category describes how teachers experienced working with their peers and with students. Resources were positive comments about how students worked in-class, the ease of teaching and experiencing a safe space. The

demands were teachers' experiences about mental demands as the groups were not as active as they hoped, and the students lacked interest in learning situations.

The fifth sub-category was 'Team effectiveness'. This depicted the teachers' experiences of the effectiveness of learning and working together. The resources were those experiences when the teachers felt that the FC made student's learning more effective. The teachers experience a few demands as regards team effectiveness. They perceived the demands when students were online, and they did not have enough information about how effective they were.

Teaching work resources and demands

The second main category focused on 'Teaching work resources and demands'. It describes the teachers' experiences how the FC practically and pedagogically changed the teachers' work. In this category five sub-categories were created. The first sub-category was 'Use of skills' and describes how the teachers used their pedagogical skills in FC. The resources were the teachers' experiences when they used their pedagogical skills in a meaningful way. The teachers felt they learned new skills during the FC which they could implement in their teaching. The demands were when teachers experienced that learning new skills took a great deal of time, or the implementations of their ideas did not work as smoothly as hoped.

The second sub-category was 'Job control and participation in decision making'. It included the teachers' experiences of autonomy or lack of it. They described their perspectives on how the organisation responded to their suggestions, how much they could affect the course and how much autonomy they had. In addition, teachers experienced that they could use the FC to influence their teaching, assessment, evaluation, learning environment and differentiation. The resources were when the teachers' experiences of job control were positive and increased their autonomy and decision making. Demands included the experiences of an increased workload and lack of autonomy.

The third sub-category was 'Availability of tools'. This sub-category is about the experiences of teachers concerning the tools offered and their use. The resources were the experiences of the FC related to these tools, such as: developing the use of ICT skills, understanding the pedagogical benefits of making the materials, the support of the organisations to acquire the right tools, easy communication with students online, and tools that worked. The demands were negative experiences in relation to the tools available, such as workload in making the materials, limitations of technical tools and lagging connections.

The fourth sub-category was 'Task variety'. It consisted of teachers' experiences about what kind of different tasks FC provided. Teachers discussed how FC activities had increased their time with the students, decreased lecturing and provided more variety in their teaching. The resources were related to positive experiences, such as discoursing with the students and seeing them learning from different tasks. The demands were experiences of students not being prepared for the class or an increased workload in providing different varieties of tasks when planning FC sessions.

The fifth sub-category was designated 'Fulfilment of expectations'. It examined the teachers' expectations of FCs and whether their expectations were met. The resources were the teachers' experiences of the FC and how it fulfilled their expectations or went beyond them. The demands were the situations in which the teachers had hoped for more from the FC, but they could not achieve these expectations.

Organisational resources and demands

The 'Organisational resources and demands' was the only category where there were more comments about the demands than the resources. This category has two sub-categories 'communication' and 'financial assets'. 'Communication' described the teachers' experiences with interaction in their work. The resources were experiences of interaction between teachers, students, peers and the organisation; when all four benefitted. The demands were teachers' experiences of challenges in their interactions, and students criticising the teaching.

'Financial assets' included teachers' experiences of the financial support they receive or the lack of it. The teachers described in the interviews how financial support affects several factors: the will to develop, students, the planning, and the workload. The teachers commented on how bureaucracy limited their teaching and the students' learning. This sub-category had more demands than resources.

Developmental resources and demands

The final category was 'Developmental resources and demands', which had three sub-categories: 'Career perspective', 'Performance feedback' and 'Possibilities for learning and development'.

'Career perspective' included teachers' thoughts about their experiences, why they wanted to participate in the FC-pilot and their comments about future development. The resources were the possibilities and desire to develop themselves as a teacher. Teachers did not have any comments which were categorised as a demand.

'Performance feedback' describes the teachers' experiences when they received feedback from the students. The teachers did not mention any feedback they received from their supervisor, but the student feedback was available the entire time and they reflected on it. Positive feedback from students in the FC course was coded to resources and negative feedback to demands.

The last sub-category was 'Possibilities for learning and development'. Teachers reflected on their experiences and expressed what kind of possibilities FC provided for their development, which was coded as a resource. Only one comment was categorised as a demand; the comment was about an experience of FC hindering teacher's development.

The perceived impact of FC to teachers' experienced job demands and resources

When looking at FC's perceived impact on job demands and resources in each category, it can be noticed that job resources appeared a total of 314 times while the demands appeared 165 times. Based on this we can infer that overall, the experience of using FC created more impressions of acquiring resources than demands.

The experienced impact of FC on social resources included an increased sense of belonging to the community and contributed to lifelong learning and feelings of competence. When looking at the negatively perceived impact of FC to social issues, we noticed that the experience of teachers as regards other teachers' negative attitudes towards FC, reduced their sense of belonging.

Many university teachers experienced that FC had a positive impact on teaching work resources. The teachers felt that they could teach 21st century generic skills such as communication and problem-solving alongside their subject content. They also experienced an ability to learn new skills while teaching and planning, thus increasing the feeling of competence. On the other hand,

they experienced a negative impact of FC on teaching work, as they experienced the increased amount and variety of work as demanding and challenging.

FC was also experienced as impacting in organisational resources. Teachers perceived they had better communication with the students, which was perceived to help with their work performance and differentiate their teaching. The teachers felt that they could also communicate and talk with other peers in a better manner and improve colleagues' attitudes towards FC. The feeling of support from the organisation made teachers' experiences of teaching, planning and working easier. The demands were experienced as mentally exhausting when teachers faced criticism from their peers and students towards FC. The lack of autonomy was criticised by the FC teachers, when wither their teaching or student learning was limited by organisational factors.

Teachers experienced FC impacting developmental resources and demands. The experienced possibilities and resources to develop teaching can increase teachers' motivation. The direct feedback from students can increase teachers' motivation, but it can be demanding as well. Demands can cause emotional and mental stress, but it can also increase motivation. Teachers felt that they could change their teaching for the better when they received feedback.

Discussion

The aim of this study was to examine how university teachers experience job demands and resources while implementing FC and to identify what demands and resources they describe. Based on the results we have concluded that an FC provides more resources than demands. Increased resources and decreased demands may increase motivation, expand lifelong learning, reduce exhaustion, and help teachers to achieve their goals (Bakker et al., 2003; Demerouti et al., 2001; Schaufeli & Taris, 2014).

The identified job demands and resources

Four main categories for resources and demands were established: 1) Social 2) Teaching work 3) Organisational and 4) Developmental. These categories follow the original job demands and resources model (Schaufeli, 2017), but some original sub-categories were absent in the teachers' interviews. In this study, the highest frequencies were found in the category 'teaching work resources and demands'. The high number of comments about job resources can be explained by the fact that in this category, teachers themselves were most able to influence what happened in the classroom through their own actions. The high number of job demands in this category, according to the interviews, is explained by the increase in workload, which is in line with the previous studies (Akçayır & Akçayır, 2018; Long et al., 2017). The study was conducted at the time of the COVID-19 pandemic, which probably also had an impact on the increased teaching work demands as teachers needed to adapt to the emergency online teaching (Hodges et al., 2020).

The perceived impact of FC on the experience of teachers as regards job demands and resources

Similar to previous studies, teachers did not see themselves as transmitters of knowledge, but they perceived themselves more as facilitators (Ansori & Nafi', 2018; Long et al., 2017). Teachers obtained more resources when they were able to use their pedagogical skills and knowledge. They

were able to focus more on student-centred teaching which is also in line with the previous research (Akçayır & Akçayır, 2018; Bashir & Hamid, 2021; Gilboy et al., 2015; González-Gómez et al., 2016; Hao, 2016; Mingorance Estrada et al., 2019). This change was experienced as a resource, as teachers could give more precise teaching and differentiate their teaching which is also consistent with the previous studies (Akçayır & Akçayır, 2018; Flores et al., 2016).

In this study, teachers experienced receiving job resources when they made pre-materials, even though it added more workload (see Akçayır & Akçayır, 2018; Long et al., 2017). Teachers were able to share their materials and receive recognition from their peers and students. Making the pre-material had advantages as well as developing teachers' ICT-skills and preparing teachers when emergency online teaching began due to COVID-19 pandemic (see Hodges et al., 2020). Teachers still had difficulties when switching to online teaching, and the increase in job demands. However, they experience success in using FC online, thus increasing resources.

Through FC, teachers were also able to teach other 21st century skills, which is consistent with the previous research (Bredow et al., 2021; Kantanen et al., 2019; Väisänen & Hirsto, 2020). For the teachers, this provided the resources to do a variety of tasks with the students, rather than having to limit themselves to lecturing. On the other hand, it also increased the demands of the job as teachers used more mental resources in their teaching and actively thought about the questions posed by the students.

According to the teachers' experiences, the attitudes of students toward FC varied. Some students seemed to enjoy it, and they gave positive feedback to teachers, encouraging them to use FC in the future. In contrast, some criticised the FC method, which increased the mental demands on teachers. Additionally, few students were sceptical at first about FC but, after becoming accustomed to it, they began to understand and enjoy it (see Kantanen et al., 2019; Låg & Sæle, 2019; Sointu et al., 2019, 2023).

Co-workers, peers and supervisors influenced teachers' job demands and resources. While teachers experienced gaining resources as they received support and could teach together, they also experienced demands when other co-workers criticised FC, which is similar to previous studies (Kankaanpää et al., 2025). It can be interpreted that teachers' sense of community varies, depending on how their co-workers related to FC. For further studies, it would be an interesting topic to study how much this is influenced by the workplace's pedagogical culture; studies have suggested that an open pedagogical culture enhances teachers' effort to try new innovations (Myllykoski-Laine et al., 2023).

A category which had more demands than resources was 'organisational resources and demands'. Most of the demands were from a lack of financial assets. Teachers reflected on the FC and criticised the university for not having enough resources to flip everything. FC takes time and resources, and this has also been noted in previous research, highlighting that flipped teaching is resource-heavy to implement (Akçayır & Akçayır, 2018; Baig & Yadegaridehkordi, 2023; Kankaanpää et al., 2025; Long et al., 2017). Teachers considered that FC could be an investment in the future.

Limitations of the study

It is important to note that all participants in this study had more time and resources allocated for planning their FC than they typically would. This raises the question of how a control group would have utilised the same additional 160–180 work hours for course planning. Additionally, all participating university teachers had some level of pedagogical training, which may have contributed to their overall positive experiences with FC.

In this study, the number of interviews were only nine and thus the results are not to be applied generally. However, there is no set number of interviews defined in qualitative research, rather it depends the research design (Baker & Edwards, 2012). In addition, the limited number of interviews should not be a justification for not investigating the topic (Hänninen, 2016). Future research could consider including a control group of teachers without pedagogical training to examine how they develop and plan their teaching when implementing FC. Furthermore, the study was conducted during the COVID-19 pandemic, which may have influenced the results. However, this study provides information on the topic and could be in a key role to find more significant information about university teachers' experienced job demands and resources.

Conclusion

This study identified the job demands and resources mentioned by university teachers who participated in the FC-pilot and examined how they perceived it affected their job demands and resources. Overall, the job resources were more frequently mentioned than job demands. Despite the low number of participants, the findings indicate that FC may impact teachers' work in several areas such as social settings, teaching work, organisational aspects and development processes. FC can impact to perceived job demands and resources, and according to the findings of this study, it might increase the job resources more likely and decrease job demands. These findings may suggest that increased resources and decreased demands could reduce job exhaustion and advance wellbeing. However, more representative and larger sample size would be needed to strengthen the findings, which is why future studies are needed. In line with the previous studies (e.g., Murtonen & Vilppu, 2020; Myllykoski-Laine et al., 2023) the findings of this study emphasise the importance of pedagogical training and culture. FC is a pedagogical tool, which does not work automatically (e.g., FLN, 2014), therefore teachers should use their job resources, pedagogical thinking and work efforts while starting to utilise it. Practicing and training FC can be challenging, but afterwards it may decrease job demands teachers are experiencing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

The participants of this study did not give written consent for their data to be shared publicly; thus, data is not available.

Declaration of generative AI in the writing process

The generative artificial intelligence tools have been used to improve the readability and the language. After using these tools, the author reviewed and edited the content as needed and takes full responsibility for the content of the published article.

Ethics approval statement

The study did not deviate from the principle of informed consent, involved intervening participants' physical integrity, exposed them to exceptionally strong stimuli, cause mental harm that exceeds the limits of normal daily life or threat the safety of the participants or researchers, thus it did not require Finnish ethics review (TENK, 2019).

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