Original Research Article

Difficult but Valuable! Learning in Student-Centered Assessment Feedback Practices in Higher Education

Abstract

Aims: The aim of this study is to fill a gap in research on students' experiences of learning in student-centered assessment feedback practices. The article examines what students tell us about their learning in the context of student-centered feedback practices in higher education during online learning.
Study design: The study was conducted as a qualitative online survey among Finnish university students (N=35). The relationship between learning and assessment was explored in the context of formative and summative assessment practices during an online learning environment. The data wasanalysed using a discursive approach.
Place and Duration of Study: The research was conducted in Finland during spring 2021.
Methodology: The scientific and philosophical framework of the study is based on the theory of social constructionism, according to which social reality is formed through language in an interaction between people. The methodology used was discursive reading, i.e., how social reality is discursively produced through language. The starting point was the idea that language creates different discourses or perspectives on reality.
Results: The feedback practices provided a different picture of learning and highlighted different dimensions of learning. Learning was discussed in terms of positive emotions, multiple perspectives, sociality, renewal, and holistic learning. In addition, negative emotions, disinformation, regression, and the playing field metaphor were associated with learning.
Conclusion: The results show that feedback practices that are presented as student-centered do not necessarily support the learning process of adults. Learning and assessment practices based on pedagogy and a learning theory can best support students' personal and social growth and increase their self-esteem. In online learning, teacher guidance and pedagogically based learning support are emphasized. We argue that in online-learning, where the role of the teacher is often small, student-centered well-intentioned assessment practices can only provide a thin veneer of learning unless students are helped to see the holistic importance of assessment as part of the learning process.

Keywords: assessment, online learning, higher education, continuous learning

1 Introduction

Continuous learning has become an important objective in international higher education policy. The aim is to make lifelong learning accessible to all individuals and to enable equal access to education for all (European Union 2008; European Union 2018). Continuous learning emphasizes agency. Individuals are expected to act independently in education and in life, and strong agency helps to navigate a complex and uncertain world (OECD 2018). In

higher education, we need more knowledge about the practices that promote and hinder students' agency to develop pedagogical practices that support agency (Jääskelä et al. 2020). So far, there has been little analysis of micro-contextual data on student agency and learning, such as courses and related teaching practices (Stenalt &Lassesen 2022). Research on the relationship between assessment and agency, for example, is so far quite limited (Nieminen & Tuohilampi 2020; Nieminen et al. 2021). This study addresses this research gap by discursively analysing student-centered assessment practices in higher education in the context of online education.

The assessment culture in higher education has been described through two perspectives: the old and the new paradigm (Winstone 2022) and "Feedback Mark 0" vs. "Feedback Mark 2" (Boud et al. 2013). The former describe feedback from a cognitive perspective, where feedback is a one-way transfer of information that corrects learning. The latter, on the other hand, describe feedback from a social constructionist perspective based on interaction and the construction of shared knowledge and understanding (Aijawi et al. 2017; Evans 2013; Sadler 2010). The shift in feedback paradigms can also be described as a shift from teacher-centered (TCL), knowledge transfer-based conceptions of teaching, assessment, and feedback towards student-centered (SCL) conceptions in which the student plays an active role (Ramsden 2003; Van der Kleij et al. 2019). There are country and discipline-specific differences in higher education assessment cultures. Finnish assessment culture is low-threshold assessment, unconstrained by national exams or strict assessment practices (Ursin et al., 2021). Although assessment and feedback practices that emphasize student agency and participation have become more common, student-passivizing and teacher-centered assessment and feedback practices are still prevalent in higher education (Børte & Lillejord 2020; Nieminen et al. 2021; Stančić 2021; Winstone et al. 2020; Winstone 2022). Universities have been criticized for their tendency to impart theoretical and formal knowledge rather than empowering students (Virtanen et al. 2019). Studies have shown that supportive and interactive pedagogy (Jääskelä et al. 2017) and socio-constructivist pedagogy based on collaboration and interaction (Virtanen et al. 2019) support students' agency and participation. According to Jääskelä et al. (2020), the feeling of involvement and ownership in one's own learning positively strengthens the student's perception of their own learning and produces empowerment. According to them, it is also about how the ownership built in education is transferred to contexts outside learning, such as working life (Jääskelä et al. 2020).

Assessment plays an important role in learning, and research has shown that assessment feedback is one of the most influential factors in individual learning (Boud et al. 2013). Assessment and feedback are not synonymous, but assessment must be carried out before feedback can be given.Assessment feedback is defined as a more detailed part of the wider assessment process (Boud et al. 2013; Winstone et al. 2020; Yan & Boud 2021). In this study, assessment feedback refers to feedback that is contextualized within student-centered assessment practices such as feedback discussion, peer assessment, self-assessment, and self-assessment with self-grading. Feedback was explored in the context of online-learning as formative and summative feedback practices integrated with independent learning, such as writing learning assignments, and collaborative group learning, during online courses.

The rhetoric of education policy speaks of learning and studying as adults in simplistic terms, emphasizing efficiency and digitalisation and ignoring the diversity of students and their learning. Driven by a neoliberal ideology, quantitative measures are developed to assess students, which is also reflected in students' attitudes towards learning (Stančić 2021). However, adult learning is a time-consuming and complex process in which prior experience, reflection through individual and group processes and unpacking of learning are central. Research (Boud et al. 2013; Winstone et al. 2022) has shown that student-centered participatory assessment practices enable individual and collective reflection on experiences and support learning that transforms the structures of deep thinking. Research suggests that feedback is only partially used in education contexts (Boud et al. 2013). Digital learning environments develop new perspectives on the relationship between digital and assessment, but the intersections between them are complex, especially when socio-technical perspectives require assessment to be relevant in a digitally mediated society (Bearman et al. 2022). So far, digital is used in assessment in a rather superficial way as a tool to achieve efficiency (Nieminen et al. 2022). This study examines the relationship between learning and assessment and asks what the discourse produced by students in student-centered assessment feedback practices tells us about learning. The theoretical framework is based on the literature on assessment. The

research was conducted as a qualitative online survey in the spring of 2021 for students studying educational sciences at an Open University. The teaching was conducted online using an online learning environment and online meeting systems. Further, a discursive reading approach was applied to the textual data.

2 Student-centered and learning oriented assessment in higher education

Assessment has a long history. Until well into the 1970s, the psycho-behavioural era of educational science defined assessment from a quantitative perspective, where the subject to be assessed was seen as the object of assessment (Boud et al. 2018). It was only in the 1970s, following the so-called linguistic turn, that knowledge and reality began to be understood as socially constructed. As a result, the concept of assessment and its functions changed in many ways from earlier understandings. (Boud 2013; Guba & Lincoln 1989.) Assessment is a broad and ambiguous concept. More typically, the terms evaluation and assessment are used to illustrate the differences in meaning associated with it. The term evaluation refers to a broad assessment of education or educational policy, while the term assessment refers to the evaluation of students as individuals. (Guba & Lincoln 1989.) In this study, evaluation is understood in the sense of assessment, i.e., the focus of the study is the assessment of university students' learning.

The feedback practices under study were situated between formative and summative assessment. Formative assessment is defined as assessment that takes place during the learning process and is intended to inform both the student and the teacher about the progress of learning in relation to the set objectives (Schriven 1967). Formative assessment has also been called assessment for learning, as distinct from assessment of learning (Tierney 2014). Summative assessment takes place at the end of the learning process, when the task of assessment is to answer the question of how well the objectives set have been achieved (Boud 2000; Crisp 2012). In addition to these, there is a distinction between assessment as learning, which has a recent history. Assessment as learning emphasizes learners' self-regulation and active role in learning (for example Berry 2008 & Dann 2014). According to Yan and Boud (2021), assessment as learning is defined as "Assessment that necessarily generates learning opportunities for students through their active engagement in seeking, interrelating, and using evidence". Assessment as learning strengthens students' self-regulation and promotes the goals of lifelong and sustainable assessment (Boud 2000; Yan & Boud 2021; Tai et al. 2018).

Assessment for lifelong and sustainable learning has been at the centre of research and debate on assessment in recent years. Crisp, an assessment researcher, has argued that for traditional assessment tasks, the aim of assessment should be to support lifelong learning skills. In the assessment of lifelong learning, the student plays an active role (Crisp 2012; Boud & Molloy 2013). In the context of lifelong assessment, there is talk of a new culture of assessment, where assessment is seen as an authentic element integrated into teaching and learning, challenging students, learning environments and knowledge (Birenbaum 1996). Lifelong assessment can be implemented and promoted through an integrative approach (Crisp 2012) and sustainable assessment (Boud 2000). Integrative assessment refers to assessment whose main purpose is to promote future learning by developing students' self-assessment and problem-solving skills and by increasing and strengthening students' responsibility for and understanding of their own learning and its assessment (Crisp 2012). The concept of sustainable assessment is reserved to cover assessment practices that prepare students to face the challenges of learning after the end of their everyday learning (Boud 2000). Sustained assessment involves supporting students' self-assessment skills and lifelong learning skills (Boud et al. 2013~~; Hounsell 2007~~).

According to Boud et al. (2013) and Winstone et al. (2020), a link has been found between student-centered feedback practices and student activity and participation. However, for feedback to be effective, students' own activity is a prerequisite (Boud & Molloy 2013; Carless & Boud 2018). Students need to be involved to transform information into knowledge, i.e., effective feedback (Pitt et al. 2017~~6~~; Winstone et al. 2017). This requires the student to reflect and

reflect on their learning first-hand (Henderson et al. 2021). Only feedback interpreted as meaningful supports learning, it is most natural in face-to-face interactions, but is also enabled in practices contextualized in written and digital learning environments (Winstone et al. 2017). In addition to grades, students need qualitative information about where they are going in their learning. Feedback can reflect on learning in positive or negative ways (Carless et al. 2020). The purpose of feedback is to describe the difference between the current level of proficiency and the target level when there is a gap between them (Dawson et al, 2018). According to Hattie & Timberley (2007), from a learning perspective, effective feedback should answer three questions and operate at three levels. Feedback refers to feedback on what has been learnt so far and is typically timed to the end of the course. Feed-up sets the goals and feedforward provides the steppingstones. (Hattie & Timberley 2007.)

The feedback practices that are the subject of this study are practices that can be used to implement participatory and lifelong sustainable assessment. Feedback practices are defined in the study as follows.Feedback talk in this study refers to a discussion between the student/students and the teacher about the students' performance online, e.g., via Zoom. These discussions involved not only the teacher but also a small group of students (1-4 students). Following Hero et al. (2021), we define feedback discussion as a contingent, episodic, and dialogic interaction between students and teachers that takes place online. Little research has been conducted on feedback dialogue in higher education contexts (Heron et al. 2021; Van Der Kleij & Adie 2020). In peer assessment, students comment on and assess the quality and level of performance of other peer learners in a written form in an online learning environment without face-to-face interaction (Topping 2009). The assessment was based on written outputs or oral presentations by other students. Self-assessment involves students assessing their own achievements and learning outcomes, which requires students to be reflective and active (Panadero et al. 2016). Self-assessment is considered in this study through two different practices. In the first, students reflect on and assess their own learning in a summative sense in writing. The teacher reads and comments on the student's self-assessment while making his/her own assessment of the student's work. The self-assessment does not affect the grade but creates little interaction between teacher and student. In the second practice, students begin the course by receiving a ready-made self-assessment matrix (Table 1) with criteria for three dimensions (content, work, and personal learning). Students complete the matrix at the beginning of the course by writing down their own learning objectives in addition to the content objectives for the period. Students monitor their learning through the matrix during the course. At the end of the course, they assess their own performance in writing on the matrix, giving reasons for each dimension. Finally, they give themselves an overall course grade on the matrix.

Table 1. Self-assessment matrix

2 Method

The aim of this study is to examine what the talk produced by students in student-centered assessment feedback practices tells us about learning. The focus of the study is on the context of adult student learning and assessment, with a particular emphasis on the aspects of formative peer assessment and summative self-assessment. The data was collected via webropol-guestionary in spring 2021 from open university students (N=35) in Finland. The questionnaire was delivered to respondents via an online-learning platform. In line with good scientific practice, respondents were also informed about the research and the research privacy policy (Patton 2002). Participation in the study was voluntary and it was possible to withdraw from the study without consequence. In addition to the background questions, the questionnaire contained 13 open questions on different learning assessment and feedback practices. The data were

pseudonymised, i.e., direct identifying information was removed. The sections of the questionnaire selected were those related to the student-centered feedback practices under study. A total of 26 pages/A4 of data were collected for analysis. The material contained in the students' responses was extensive and varied in content.

Our theoretical-methodological approach is discursive, i.e., we look in detail at how social reality is produced through language (e.g., Burr 2015; Gergen 1999). Different ways of speaking can be understood as shared meaning resources, as distinctive perspectives that can be used to produce a particular image of events and phenomena: words are used to do things, consciously or unconsciously (Fairclough 2003). Talk patterns are examined as examples of the use of widely shared linguistic resources that serve a wide range of interactional purposes and, in practice, affect relationships between people (Fairclough 2013). In discourse analysis, the essential contents and main lines of the phenomena studied are constructed in language through word choices, emphasesand silences. The analysis proceeded by first reading the whole data carefully. The discursive analysis of the textual material proceeded in practice from holistic internalization to reduction of the material. The data was organized by feedback practices by categorizing formative and summative assessment practices and creating subcategories: assessment discussion, peer assessment, self-assessment and self-assessment including self-grading. The data were then interpreted as learning-related discourse. The analysis paid attention to the discursive level, i.e., how learning was described and talked about (see also Fairclough 1992). The text fragments were categorized as far as the content allowed. From the data, discourses and perspectives on learning related to feedback practices were identified and are described in the findings of the study.

2.1. Limitations of this study

The study had several limitations. First, only 35 students participated in the study. Qualitative research seeks to describe and understand the research phenomenon in depth, and therefore the size or quantity of the data is not the most important measure of reliability (Patton 2002). Enough data was collected to answer the questions, which allowed for the different types of talk to be distinguished from the data. During the process, the analytical and conceptual choices of the researchers guided the focus of the data and analysis, allowing for critical methodological reflection and transparency of the research process during the process. According to Fairclough (2013), in discourse analysis, the relationship between the researcher and the research subject is constructed in a dialogic way, as the researcher not only describes social reality through the research findings but also creates it. In this case, even the examination of the researcher's use of language does not focus on reporting facts, but rather takes a reflexive approach to the researcher's use of language. Qualitative research does not aim to generalize, but the aspect of transferability of results need not be completely overlooked (Guba & Lincoln 1989). Although the students who participated in the study produced discourses on learning and assessment from their own starting points, it is possible to make loose generalizations and to understand learning and assessment as a phenomenon in a wider university context (Goodman 2008). Through them, a variety of representations emerged that can provide clues to the interaction between the social macro and the individual micro level.

3 Results

The next section presents the ways of speaking about learning by feedback practice. The results are presented according to two categories of formative (3.1 and 3.2) and two categories of summative (3.3 and 3.4) assessment practices. The assessment practices are combined with the discourse produced by adult learners on the relationship between learning and different assessment practices.

3.1The importance of formative feedback dialogue interaction for learning

Feedback discussion in this study refers to the online feedback discussion between teacher and student, via Zoom, related to the student's performance (learning task or online course). These discussions involved not only the teacher but also a small group of students (1-4 students). The analysis did not clearly identify where the teacher's feedback in the feedback discussion was directed. Instead, it was emphasized that the feedback discussion was indicative of the teacher's appreciation, personality, and commitment to the course. Teacher-student interaction, meeting and getting to know each other reinforced the trust between student and teacher and the effectiveness of the feedback. At its best, the feedback discussion provided the student with information and understanding of the stages and objectives of the student's learning, thus strengthening the student's sense of control over his/her own learning. The feedback discussion thus combined emotion and effectiveness. Feedback given through distance and online learning without face-to-face contact with the student was perceived as useless from a learning perspective and as undervaluing the student.

> *Online learning has surprised me in a very positive way. The dedication and supportive attitude of the teachers comes across. It's like being in a classroom. If you've worked with the teacher and feel like they know you as a student, the live feedback feels and feels better. Feedback should be personal. Not the kind you might think of as being given to several people on a conveyor belt.*

The motivational and emotional dimensions of the feedback were more prominent than the cognitive content of the feedback. The learning experiences related to the feedback discussion highlighted the importance of emotions in learning, which has been less highlighted in university education, which is considered rational, theoretical, and cognitive. The positive and pleasant emotional experience created by the feedback discussion made the student feel good and the discussions were even perceived as empowering. Feedback that recognises strengths is particularly important for students who need support in their learning and for students who are uncertain. On the other hand, studies have shown that so-called 'I' feedback, which is related to the student's personality and personality traits, is useless and unnecessary from a learning perspective (Hattie & Timberley 2007).

> *Verbal feedback in a live situation gives you strength, energy and makes you feel good. It's precisely the so-called 'accurate feedback' that is so important. I find it useful and effective because it is immediate.*

The feedback discussion between teacher and student had a motivational and emotional dimension. Personal discussions with the teacher were meaningful and were perceived to have a positive impact on learning. Information constructed and interpreted in dialogue with the teacher was perceived as more effective than monologic one-way feedback communication and was positively reflected in the student's perceptions of him/herself as a learner. The results suggest that the feedback discussions between teacher and student emphasized emotional, supportive, and empowering feedforward dimensions, which can be interpreted as positively reflecting on the student's future behaviour.

The perceived challenges of the feedback dialogue became the flip side of its strengths. Some students found the teacher-student discussion too socially tense. This leaves the student unable to internalize and understand the cognitive and emotional message of the feedback. Individual characteristics are reflected in how and what kind of feedback students can receive. While academically skilled, strategic students can make use of all types of feedback, students who are sensitive and need support in their studies may need more specific guidance. They may even decide to seek safer assessment practices to protect themselves.

> *Feedback in a live situation is sometimes difficult to internalize. The tension of the situation affects how much you can take in. Feedback also feels more personal. On the other hand, there is the possibility to ask for further clarification, but of course this depends on the personality of the person receiving the feedback, how active an interactor they are.*

3.2 The complexity of formative peer feedback

Peer feedback in this study refers to formative feedback given by students to each other in online learning. Students did not meet face-to-face or live online but gave feedback in an online learning environment through online courses. The peer feedback provided different perspectives on online learning from an assessment perspective. On the positive side, peer feedback from students to each other was perceived as broadening their own thinking and increasing their understanding of other people's thinking. At its best, peer groups expanded one's own thinking from a single viewpoint to more relational thinking that combines different perspectives.

> Peer feedback gives new perspectives on things and teaches you to give and receive feedback.

> The group acts as a support in encouraging and exchanging experiences and questions, and in that sense peer support is really important.

For some students, the fact that the feedback was given by a peer student even made it more meaningful. If students trusted other students and valued their views, they said they would use and learn more from the feedback than they would without it.

> *Feedback from other students has given me a lot of new perspectives on my own work. It's easy to take feedback and criticism because we are at the same level in our studies.*

In online learning, the role of the teacher as pedagogical planner and supervisor of teaching was highlighted. For peer assessment to have a positive impact on learning, the teacher must pay attention to its design and monitoring. Peer assessment requires training of students to give peer feedback and the guidance and example of a skilled pedagogue. Students, even adults, cannot be left to learn on their own, but need guidance and pedagogical support structures in teaching.

> *Peer feedback is both valuable and instructive for all participants. The role of the group facilitators is important for the quality of the peer feedback and for establishing the rules of the game, i.e., what to say, how to say it, etc. a positive tone, where the teachers' example is important, and intervention when necessary.*

Several factors were associated with the failure of peer assessment, mainly linked to the pedagogical competence of the teacher and the assessment culture of the institution. It was associated with a strong risk of public shaming, which in the worst case could destroy the student's learning path and undermine self-esteem and the commitment to learning.

> *My own experiences have been positive, but a friend told me of different studies where a student stole his work in front of the whole group and the teachers did not intervene. You wouldn't wish that on anyone, as it can leave a very strong negative stigma on your studies as a whole.*

While some students perceived peers as equals, others saw peers as novices in a "waiting room" for learning, whose views did not have the same weight and "real" content as the teacher's. From a learning perspective, peer feedback was perceived as contradictory and even instrumental. They could be used by students to demonstrate their own competence or even mislead students in their learning. Peer feedback was not valued from the point of view of self-learning, as the knowledge of peers was perceived as less than that of the teacher.

> *Peer feedback comes in many forms. Students are just getting used to giving feedback, so I feel it is more of a "thesis" from the student than giving something more than feedback from a knowledgeable teacher. Some are serious about the subject, but at the same time are trying to shine as it were. Others haven't even read your text and, out of necessity, say something disjointed about it. Others will advise you, but the advice will mislead you because there is no information. Moreover, the experience of giving feedback yourself is frustrating because it is difficult to give feedback on a subject on which you do not have a complete picture, as teachers do.*

Peer feedback was not seen as "real" feedback, as students are only just practicing it. Thus, peer feedback could even be perceived as wrong and, at worst, misleading. The teacher was seen as the owner of the "correct" information. Peer feedback was even perceived as an annoyance, as the student was forced to pretend to be an expert. The learning process and the related insights and discussions were not seen as valuable in themselves, but only the experts' discussion of the 'ready and correct' knowledge. Students' views were disregarded, and feedback was reduced to 'samples'. Peer feedback was also associated with cheating. Peer feedback was seen as an additional task that was attempted with minimal effort.

Some students saw giving and receiving peer feedback as separate processes and did not see its connection to learning in general and to their own learning as significant. The practice of giving feedback was seen as important from the perspective of others, but irrelevant to their own learning. Peer feedback was seen as having more of a social, entertaining and well-being value for the student than a direct learning value. On the other hand, the social well-being of the student is also likely to be reflected positively in the student's learning experience.

> *Peer feedback gives more to the one who gives it. It's good to learn to assess. The feedback hasn't really influenced how I do things, but I like being in touch with other students.*

3.3 Summative self-assessment as a means of renewing and reproducing learning

Self-assessment in this study refers to a summative reflection on learning after the course, which the student writes down verbally, for example at the end of a learning task. Students have been told that self-assessment does not affect the assessment of the assignment and that it is an important part of the learning process. Supporting questions have been provided to help with the self-assessment, such as a description of the learning process, areas for improvement and challenges. Self-assessment also produced different descriptions of learning. At its best, it was felt to deepen understanding of what was being learned and of factors related to the learning process and the student. Positive learning experiences were linked by the fact that self-assessment guided reflection on the subject matter to be learned and on one's own learning, which increased related understanding.

> *For each course I have done a self-assessment. A good way to reflect on your own challenges and strengths.*

> *This has been a new and really instructive experience. I have always used self-assessment quietly in my mind, but never in writing. This has been time consuming but very instructive as I have mirrored the requirements of the course with my own achievements*

Self-assessment is a way of making your own learning, strengths, and areas for improvement visible to yourself. Breaking your own thinking routines exposes you to learning, creates cracks in your thinking and makes you see things in a new way. Self-assessment tells us that learning is hard work and requires effort. This contrasts with the view of learning as a quick and efficient process. Some students reported that they had been sceptical and critical of their own learning

and performance before they were introduced to self-assessment. Deviating from convention forces the adult out of stuck, even erroneous, thought patterns by directing the gaze from the student to himself. Through individual and collective reflection, at best, something new emerges.

> *In the beginning, I was very critical, and I didn't see the positives in my learning very easily. Now, later on, I have learnt to take a broader view of my own learning and find my areas for improvement more easily.*

The assessment talk was about learning, which involved taking responsibility for your own learning. This also involved the freedom to reflect on one's own learning objectives, in addition to those set externally, and the relationship between them. Learning is not only constructed as externally defined objectives, but from the student's own experiences.

> *Self-assessment plays an important role in developing responsibility. You need to define your own objectives, internalize the common learning objectives of the course, monitor your progress throughout the course and finally assess your own work and the achievement of your objectives.*

Self-assessment teaches responsibility and process-based monitoring and assessment of your own learning. Self-assessment makes students more committed to learning, as learning was seen as starting with the learner. Students who were positive about self-assessment were aware of the importance of self-assessment in learning and were willing to make the effort to explore their own experiences individually and collectively. They used self-assessment in the sense of feedback, feedup and feedforward. Self-assessment was also associated with a more cautious perspective than before. Self-assessment was seen as a way of making one's own learning realistically visible and the related reality collectively shared.

> *Quite a good experience and I found that my self-assessment was in line with the teachers' assessments. The whole purpose of assessment is to realistically perceive one's own level and to improve one's self-awareness and to a certain extent one's own work, and in this respect teacher assessment, peer assessment and self-assessment work well together.*

Self-assessment was positively associated with personal learning, especially when the student felt that the teacher's assessment was in line with his/her own. Assessment was generally associated with the idea that the student and the teacher could share the same reality of the student's learning as truthfully as possible. In this way, all parties involved in the assessment acted honestly in the assessment, the assessment was based on facts that were clear to all, which allowed the truest possible picture of the student's learning to be formed. Learning was seen as a straightforward, effortless, and competent process of completion. It was outside the learner. Some students appeared to be strategically skilled students and had a strong sense of their own learning and learning goals from the outset. For them, self-assessment served as a way of maximizing learning efficiency and performance.

> *Good, so I can maximize my performance as a student, because I know what I expect and demand from myself.*

Reflected through self-assessment, learning was seen by some students as a rational way to complete their studies, which helped them to progress. Self-assessment serves primarily as a tool for performance, secondarily as a support for learning. In the representation, students used self-assessment to direct their gaze forward, self-assessment served for them in the feedup and feedforward senses of learning. Self-assessment indicated a difficulty in learning, but also a direct compulsion. It was perceived as difficult, especially if it was not something they had learned to do in previous studies.

> *It is often difficult to think of what could be improved because you are so "blinded" to your own work.*

The students had previously not been encouraged to advance their studies. A performance- and efficiency-driven learning culture does not necessarily allow space or time for self-assessment in learning. However, from a learning perspective, students need opportunities for critical and unhurried self-assessment. In addition to meeting content-specific learning objectives, studies should provide space and time for the practice of important 21st century meta-skills, such as learning to learn. Interestingly, self-assessment is often associated in the literature with the freedom (source) to construct learning from one's own starting points and experiences. For many adults, this is challenging because previous assessment cultures have been based on traditional teacher-centered and externally defined learning.

> *There's something compulsive about it though, I'm sure many people write a self-assessment because it's expected. I don't know how many would reflect if it were voluntary.*

Such talk of learning in the context of self-assessment reflects previous assessment cultures and their associated external learning and assessment practices. It also indicates that some adults need to be clearly guided to reflect on their own experiences and ideas. Moreover, there is not necessarily the ability to critically examine one's own experiences, at least not exclusively, at least not without a collaborative process, i.e., sharing experiences together, for example between teacher and student. In the process of individual self-assessment, students may end up in a cycle of self-deception, where instead of progressive, transformative learning, only regressive learning occurs.

> *It's instructive if challenging if you haven't done it much. It's easy to fool yourself too, you must be mature enough to critically and justifiably self-assess. Sometimes it's hard to have the character to praise/applaud yourself, it's easier to find things to improve.*

3.4 Summative Self-assessment and self-grading - A holistic process or playing the game?

The feedback practice was also investigated, where in addition to formative self-assessment during the course/learning, students used summative self-assessment after the course/learning, which included the students to give a grade for themselves. Students self-assessed their own learning journey using a three-tiered self-assessment matrix (Table 1), on which they gave themselves a course grade against the matrix. This practice gives students a great deal of control over their own learning and assessment. The students who were introduced to this assessment practice felt that mirroring their learning against the criteria of the self-assessment matrix supported their learning, as the matrix made the content of their learning visible. The matrix supports the learning process at the meta-level because it reflects not only the content-related learning objectives for each period, but also the dimensions of self-learning and working/participation. The self-assessment matrix was perceived to concretely illustrate to the student the level of competence contained in each grade. The matrix acts as a mirror also against how one's own learning can be developed. The self-assessment matrix makes it easy to understand what kind of skills are required to achieve a particular grade. You can use it to compare your own perception of your own competence and see if it holds.

> *An active role is important because reflecting on your own work helps you to learn and see things. Throughout the process, you develop and see if you have achieved your goals. I like the detail of the assessment matrix because it helps you to 'unlock' the stages of your own learning.*

Interestingly, some students found the detail of the matrix helpful for learning, while others were anxious about the multidimensionality and precision of the matrix. The self-assessment matrix reflects learning as a complex and holistic process, the different stages cannot necessarily be categorised in a simple way.

The matrix itself is too structured and rigid in my opinion.

The matrix felt complex at first and it was difficult to know where to assess which area of the matrix you were assessing.

The self-assessment matrix also shows that the assessment of one's own learning needs to be practiced in a collaborative and guided way, especially for those students who experienced a mismatch between the criteria and their own learning.

For the first, disbelief in one's own abilities to put oneself and one's learning to some point on a set of predetermined criteria. Being too hard on oneself at first, until, as the learning progressed, one had the courage to admit to oneself that one was good at something and even better at something. The active role of the student in assessment brings with it a great responsibility for himself and his learning.

Although students have a great deal of freedom to influence their own learning through self-assessment and grading, but they cannot be left to rely solely on these. In addition, teacher feedback is needed, where the teacher discusses the student's feedback on the student's self-assessment. Students' misconceptions about their own learning can lead to a negative circle, where negative experiences feed on each other. Misconceptions can produce regressive and regressive learning, which is why it is important to reflect on the student's experiences with the teacher. Teacher feedback is also needed, where the teacher discusses the student's feedback with the student's feedback on the student's self-assessment. The self-assessment matrix and grading is needed for the teacher to co-construct, articulate and support the learning. As was the case with peer assessment, some students perceived assessment through the self-assessment matrix as separate from learning. These students appeared uncertain, even helpless, about their own learning and relied on teacher feedback for their learning.

Self-assessment sometimes felt like an extra task, you couldn't see it as part of your studies. Giving yourself a number was really difficult. The number jumps are big, often I would have needed half numbers to help me. Teacher assessment feedback is important.

The student experience refers to the traditional and teacher-centered assessment, which is perceived as the "right" assessment. If students perceive self-assessment as detached from their own learning, teacher guidance and articulation of the situation is important. Self-assessment and self-grading were also interestingly described as a kind of playing field where one should think about one's own moves with careful calculation. By “playing the assessment game”, it would be possible to cheat one's own grade.

I've heard some people regret that they thought their own work was at least commendable, but that they didn't dare put a better mark than they thought they could, so as not to appear too greedy. When you then get that underestimated grade that you have modestly given yourself, you get the feeling that, did the teacher even read the work and wonder how this happened? I have also heard it said that always put the upper limit, so the grade will then come from what you yourself suggested. It seems that this grade to give themselves is quite a playing field ... do this, then it happens that way, etc.

Realistic assessment of their own learning seemed to be a challenge for some students and the grade played both ways. In the end, there was a confidence that the teacher would eventually know and tell the student the true extent of the student's learning. The self-assessment matrix was used in this study in an online-learning context where the pedagogical relationship between teacher and student may not develop at all or may remain tenuous. In online learning the use of the self-assessment matrix needs to be critically examined from a playing field perspective.

4 Discussion

Global megatrends such as digitalisation and pandemics have permanently changed the world and increased uncertainty. Responding to complex challenges requires new ways of learning and doing (UNESCO 2018). In an era of continuous learning, many people are studying as adults and there are high expectations regarding their learning. Learning is a multi-level, contextual and subjective phenomenon, and many factors are reflected in it. The assessment of learning is the strongest and most significant factor driving learning. The most effective way to change student learning is to change assessment (Biggs & Tang 2011; Deneen & Boud 2014). This article examined what university students' assessment discourse tells us about learning in student-centered assessment feedback practices in online learning. Assessment talk was examined in the context of student-centered assessment feedback practices, which have been shown to enhance student involvement in their own learning and produce deeper learning (Boud et al.2013; Winstone et al 2020).

Based on the results, four summary findings are presented. *First*, different feedback approaches are needed in higher education: one model does not fit all. The results showed that students also need interaction during online-learning, and this was reflected in the online assessment discussions. In addition to the cognitive, the emotional and social contexts of learning were also highlighted. The assessment discussion highlighted the relational nature of learning in the micro-contexts of learning (Heron et.al. 2021). Learning was not only seen as a cognitive process but was also associated with a wide range of emotions that can either support or hinder learning. The results also showed that teacher educators need to be sensitive when giving feedback (Ryan & Henderson 2018). Personal discussion can also be perceived as too tense, which can become a barrier to learning.

Second, assessment and feedback should not be seen as practices that are separate from learning or teaching, but as an integral part of it. Assessment and feedback should be built into teaching at the design stage so that assessment situations encourage learning and enable learning to take place. The study showed that student-centered feedback practices can be successfully integrated into online-learning and, at their best, reinforce student self-regulation and responsibility for their own learning.

Third, a large proportion of students need support and guidance to learn. Arguing from the research findings, we argue that in online-learning, where the role of the teacher is often small, student-centered well-intentioned assessment practices can only provide a thin veneer of learning unless students are helped to see assessment as learning. For example, the role of peer assessment in learning was questioned and even considered disinformative. Learning was seen to be anchored in the right knowledge, the source of which was the teacher. This finding suggests that students need to be actively taught about feedback interactions and to design the peer assessment process on a pedagogically solid scaffolding (e.g., Topping 2009). From an ethical perspective, it is important to guide learning and build pedagogically strong scaffolds for it.

Fourth, it is argued that the foundations of higher education should be built on scientific and researched learning theory knowledge. From a pedagogical perspective, assessment and university education have come a long way in recent decades from measuring and testing learning towards qualitative, social, creative, and student-centered approaches and methods of teaching, learning and assessment. There has been a shift from psychological and technical methods towards more sustainable, lifelong, and learning supportive assessment and teaching, in which the student plays an active role (Ibarra-Sáiz et al. 2020.) From a pedagogical perspective, the direction of assessment development has been favourable. However, teacher-centered assessment and teaching methods still predominate in lifelong learning (Børte et al. 2020). Nieminen et al. (2022) have stated in their meta-analysis that assessment and feedback research is rarely based on pedagogical theories. Børte et al. (2020) suggest (1) better alignment between research and teaching practices, (2) a supporting infrastructure for research and teaching, (3) staff professional development and learning designs. Teachers' pedagogical competencies are emphasized in online-learning, not

only digital competences. The teacher must have pedagogical competencies in addition to digital and content competences. The teacher's task is to build a pedagogical scientific theory for online-learning, with sufficient guidance and support stops and support trees to support learning. Students, even adults, cannot be left to individual and self-reflection online, but need to reflect together with their peers. If online-learning lacks pedagogical and learning theory, there is a risk that it will produce regressive, performance-oriented, and superficial learning rather than transformative learning. The use of student-centered assessment practices does not in itself and automatically necessarily support learning or engage the student, as their use in teaching also requires guidance.

5 Conclusion

This study examined what higher education students reported about learning in the context of student-centered assessment practices. The results gave a cautiously positive picture of the importance of student-centered feedback practices as enablers of deep and personalized learning. On the other hand, the results challenge us to look critically at feedback practices that support learning from the perspectives of guidance and pedagogy. Although the pandemic situation has improved worldwide, future learning environments will increasingly consist of web-based digital environments. It is therefore important that online learning in higher education is built on a pedagogy based on research and theory. Higher education built in this way provides the ingredients for sustainable learning and generates innovative thinking for the future.

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Table 1:**SELF-ASSESSMENT MATRIX (applying Bloom 1956).**

GRADES 1–5 **SECTIONS**	**1:** **REPEAT AND REMEMBER**	**2:** **REMEMBER AND UNDERSTAND INFORMATION**	**3:** **APPLY**	**4:** **ANALYSES AND COMBINES INFORMATION**	**5:** **ASSESS AND CREATES NEW KNOWLEDGE**	**YOUR OWN OBJECTIVES AT THE BEGINNING OF THE COURSE**	**YOUR OWN ASSESSMENT AT THE END OF THE COURSE**
CONTENT	• Know the basics and principles of operation • List or refer to subjects to be studied • Inadequate use of content and sources • Lack of personal reflection	• Personal examples show understanding and personal thinking, but the links between theoretical knowledge and examples are incomplete • Content scarce or randomly selected, no description or justification of the delimitation made • Inadequate use of sources	• Reasoned and justified delimitation • Understand and apply appropriate concepts and theories and identify the rationale • Examples and own reflection illustrate theoretical knowledge • Theory and examples are linked through personal	• Form broader and richer links between concepts than before • Analysing the links between different contexts and theoretical perspectives • Distinguishes and restructures information and puts it into new contexts (reorganising information) • Diverse use of sources	• Create new and diverse connections between phenomena in a coherent and effective way • Analyse and assess phenomena critically, both theoretically and practically, and develop ideas • Strives for a broad	***In this column, please write your own content objectives.*** ***You can use the general objectives of the course and the literature as a mirror for setting your objectives. You can also set your own objectives!***	***Reflect on and justify how the objectives of the content area have been met for you. Assess yourself both verbally and numerically by writing in this column.***

			reflection • Sufficient and appropriate use of sources		understanding • Diverse, comprehensive, and critical use of sources, with interconnection of sources		

GRADES 1-5 / SECTIONS	1: REPEAT AND REMEMBER	2: REMEMBER AND UNDERSTAND INFORMATION	3: APPLY	4: ANALYSES AND COMBINES INFORMATION	5: ASSESS AND CREATES NEW KNOWLEDGE	YOUR OWN OBJECTIVES AT THE BEGINNING OF THE COURSE	YOUR OWN ASSESSMENT AT THE END OF THE COURSE
PARTICIPATION AND WORKING SKILLS	• Passive • Participates passively in group work and discussions • Does not take responsibility for group activities • Has not participated in the group activities of the teaching day	• Mechanical • Limited participation in group work and discussions • Takes responsibility for group activities to a limited extent • Has participated to a limited extent in the group activities of the teaching	• Responsible and reactive • Actively participates in discussions and group work • Takes responsibility for group activities • Participation is reactive to the discussion, but could be more open to discussion	• Active • More responsive to the debate and outlines new visions • Takes responsibility for the group's activities and for building shared	• Inspiring and proactive (inclusive) • Participation opened up new perspectives and innovations • Proactively (participatively) taking responsibility for the group's activities and for building common knowledge (e.g.,	***In this column, please write down your own objectives for participation.*** ***You can also set your own goals!***	***Reflect on and justify how the objectives of the participation strand have been met in your case. Assess yourself both verbally and numerically by writing in this column.***

		day	• Has participated in group activities during the teaching day	knowledge • Has participated in a wide range of group activities during the teaching day	by summarising the group's outputs) • Critical, constructive, and developmental approach • Has participated in the group activities of the teaching day in a varied and meaningful way		

GRADES 1–5 / SECTIONS	1: REPEAT AND REMEMBER	2: REMEMBER AND UNDERSTAND INFORMATION	3: APPLY	4: ANALYSES AND COMBINES INFORMATION	5: ASSESS AND CREATES NEW KNOWLEDGE	YOUR OWN OBJECTIVES AT THE BEGINNING OF THE COURSE	YOUR OWN ASSESSMENT AT THE END OF THE COURSE
OWN LEARNING AND STUDY SKILLS	• Technical and non-oriented • Does not know the objectives of the course and does not set his/her own objectives	• Repeats • Tries to take some responsibility for his/her own learning, e.g., by outlining his/her own	• Responsible • Sets own goals and takes responsibility for their learning • Has made a good contribution to achieving the common	• Analytical • Sets own goals and takes responsibility for own learning • Has made a commendable contribution to	• Evaluative • Sets own goals and takes responsibility for his/her own learning • Has made an excellent contribution to	***In this column, write down your personal learning and study skills goals.*** ***You can also set your own goals!***	***Reflect on and justify how you have met the objectives of your own learning and study skills. Assess yourself both verbally and numerically by writing in this column.***

	• Lack of responsibility for own learning and setting objectives • Learning by absorbing information	objectives • Has made a satisfactory contribution to achieving the common objectives of the course • Identifies some areas for personal development in learning, but no means to improve them • Learning is mainly governed by external factors such as instructions from the teacher	objectives of the course • Is aware of and identifies strengths and areas for improvement in his/her own learning (e.g., learning strategies that do not work) • Works independently • Learning is application of knowledge, understanding, but dualistic (right and wrong answers)	achieving the common objectives of the course • Critically analyses his/her own strengths and areas for improvement and seeks to develop as a learner • Learning is the assessment of knowledge	achieving the common objectives of the course • Internal self-regulation and control of learning • Critically evaluates his/her own strengths and areas for improvement in learning and thinking, actively seeking to develop as a learner • Learning is the creation of knowledge		