

# WIP: Higher education assessment Discourses in the context of emerging technologies

Ida Naimi-Akbar  
Department of Learning on Engineering Sciences  
KTH Royal Institute of Technology  
Stockholm, Sweden  
[idan@kth.se](mailto:idan@kth.se)

This work-in-progress research paper describes an ongoing study of digital assessment discourses in engineering higher education with a focus on teacher roles and agency. Developing assessment practices in higher education is often emphasised as necessary when new technologies emerge. However, enactment of these changes is often delayed. This study employs discourse analysis to investigate digital assessment discourses at a Swedish higher education institution. The discourse analysis provides insight into which assessment practices are enabled and which agencies and roles the teacher can be assigned.

A discourse analysis has been made on written policies and instructions intended to clarify and regulate the use of digital resources when assessing student performance. The preliminary analysis reveals three different discourses: the legal assessment discourse, the learning outcome-driven assessment discourse and the transformative assessment discourse. The three different assessment discourses enable different approaches to teachers' work with assessment in a time of emergent digital technologies. The study findings highlight the need to understand digital assessment practice as a social practice enabled or limited by the prevailing discourse. An increased understanding of different assessment discourses gives insights into how assessment activities in the digital context can be enacted. This contributes to increased knowledge of why the adaptation and development of assessment is slow.

**Keywords—** *Assessment practice, emergent technology, discourse analysis*

## I. INTRODUCTION

The digitalisation of societal functions is ongoing and is not unique to higher education. Higher education institutions have increased the use of digital technology for educational purposes [1]. In recent years, higher education has experienced two major disruptive digital events that have had a substantial impact on education (e.g. remote teaching due to COVID-19 and increased availability of advanced text-generated AI tools). These events are examples of how emergent technologies develop or change assessments in higher education [2].

Digital assessment practice concerns assessment processes (how the assessment is carried out), what knowledge and competencies are assessed, and how this is achieved [3]. Naimi-Akbar et al. [4] shows that teachers' understanding of digital teaching-learning practices, and, by extension, what learning is made possible, is a mix of how teachers understand learning and teaching and interpretations of what digital practice means.

Whether digital technology is seen as an enabler or a hindrance for the teacher and to what extent the teacher has agency to design teaching, learning activities and assessment depends on the teacher's understanding of the teaching-learning interaction [4]. We conclude that teachers' assessment practices must be renegotiated to take advantage of the opportunities that digital technology brings [5].

Assessment is a multifaceted and complex practice, balancing and navigating between several underlying principles and purposes [6]. Assessment of student performance is a central and essential part of higher education. Teachers' agency and choices do not solely influence assessment practice; contextual conditions also enable and limit it [7]. For example, Trede et al. [8] suggests that top-down requirements for educational change are met with more resistance than when driven by perceived needs (e.g. forced remote teaching during covid 19). Digital technology is assumed to affect the higher education assessment practice [9]. Digital support and enacted education are often discussed with optimism and the possibility of improving teaching and student learning [10]. However, little is known about how emergent technologies affect assessment practices and understanding. In fact, much has been developed around the possibilities of digital technology, but less focus has been on what actually takes place [10]. Promising rhetoric around technology notwithstanding, changed practice is scarce [11, 12]

### A. Aims and research questions.

The particular focus of this ongoing study is to explore the social practice of assessment practices in engineering education in the time of emergent digital technology. This entails a critical approach to how the digitalisation of assessment takes place. The following research question is posed:

- Which assessment discourses exist in the time of emerging technologies in higher engineering education

## II. METHODOLOGY

Discourse analysis explores the organisation of communication, the social practices and identities and how people communicate. This creates meaning in social situations [13]. Text-based or oral communication has a constructive role in social life; this means that language itself and how it is enacted enables and limits which activities, practices and identities are possible to adopt in a given context [14, 15].

Discourses are not simply shaped by words, but distinctive ways of communication are coupled with distinctive ways of acting, interacting and understanding knowledge [16].

In this study, Gee's [15] notions of discourse analysis are adopted by seeing 'meaning as an integration of ways of saying (informing), doing (action), and being (identity)'. Discourses with a capital D (from now on called Discourse) will be at the core. This notion of Discourse goes beyond language as speech and attributes the impact of actions, interactions, values, and beliefs to recognise identity, actions or practices [16]. By adopting a discourse analysis, this study takes a critical perspective on how language is used.

#### A. Context and selection of data material

The study context is a research-intensive technical university in Sweden (the university). The university has focused strongly on the digitalisation of education for the last decade. This focus entails high-set visions and goals regarding the digitalisation of education and targeted development initiatives to transform education and educational activities. Data material consists of written policies and instructions intended to clarify the use of emergent digital resources when assessing student performance. The data material consists of protocol extracted from university-wide bodies responsible for education, web-published instructions, recommendations, and guidelines, as well as various written clarifications regarding how assessment can and should be conducted. The material was published on the university's internal web pages. In total, the data comprises 74 sources and originates from the period 2020-2023. This period includes two large events of increased use of technology. First, the pandemic brought with it the requirement to conduct teaching and assessment of students remotely with the support of digital technologies. Second, the increased availability of advanced text-generated Large Language Model tools (e.g., ChatGPT) affects the form and content of assessment [17].

#### B. Method of analysis

In this study discourse analysis has been applied. Following Gee [16], the material has been analysed with a focus on the identified distinct teacher identities and assessment activities by examining how language is used. The unit of analysis is the university.

Initially, the analysis involved a thorough reading of the entire data material to identify text units relevant to the purpose of the study. Relevant units were made up of text extracts that dealt with assessment, the use of digital technology in teaching, learning and assessment activities, teachers' pedagogical work and tasks. Excluded text included policies and instructions unrelated to assessment or the teacher's work. The selected text units originate from 58 of the documents in the dataset.

The selected subset of the data was coded inductively to record the identities and actions of the language used [13]. Each statement was coded in relation to the assigned teacher's role, interpretation of what assessment of students' performances are and what development of assessment means in a time of

emergent technologies. Three tentative discourses were identified based on the inductive coding.

To enhance trustworthiness, the tentative findings, insights, and interpretations were discussed continuously during the analysis work with other researchers who were well-versed in discourse analysis and the subject area. NVIVO was used during the analysis to organise and manage the data.

#### C. Ethical considerations

The national ethical guidelines for educational research [18] were followed when this study was conducted. To protect the individuals and the university's integrity, quotes and references from the text documentation are used sparingly, as searchability on the internet makes it possible to identify the scholars. In the cases where citations from the documents are used, some rewriting has been done, names that appeared in the material have been removed, and translations have been made from the language of origin to English. The article's author has made the translation.

### III. FINDINGS

The preliminary findings reveal three assessment discourses in the time of emerging technologies: *The legal assessment discourse*, *the learning outcome-driven assessment discourse* and *the transformative assessment discourse*. Each of the discourses involves different logics for what assessment is, how assessment should be developed in a time of emergent technologies and the role the teacher is assigned.

#### A. The legal assessment discourse

In *the legal assessment discourse*, assessment practice is based on and understood from legal principles. Emergent technology implies that established structures for the implementation of assessment are no longer sufficient to ensure correct implementation. For example, using digital technologies for remote assessment implementation challenges how the university can ensure student identities and that only authorised aids are used by students performing the assessment tasks. Further, AI technology and Large Language Models (LLM) challenge the taken-for-granted link between the produced presentation and the individual's knowledge. Digital technology and the possibility of conducting assessments remotely make it no longer evident whether the student's rendering of knowledge is presented or if the rendering is AI-generated.

In the legal assessment discourse objectivity, legal certainty, misconduct prevention and equal treatment have a prominent role in which assessment practices are made possible. Digitally enacted assessments pose challenges when conditions for control of individuals conducting assessment-based assignments change. As illustrated by the quote below from a protocol extract, the discursive repertoire includes the idea that assessment is influenced by what is possible to regulate in rules, guidelines, and procedures.

*Rules for distance assessment and digital assessment need to be drawn up, incl. how to control students' identity*

Regulations aim for the assessment to take place in a legally secure and legally equivalent manner with a focus on securing students' identity. The emergent technology implies that established assessment implementation structures are insufficient to ensure legal, reliable and objective assessment. To deal with this, rules and a standardised approach are used. As the quote below illustrates, recording is added as a process to written distance assessment to increase control in the assessment situation further.

*The intention of recording students is not to prove cheating but rather to show that we have exam invigilators and monitor if cheating occurs.*

In the legal assessment discourse, the increased use of digital technology to implement the assessment entails that routines for how assessment is carried out must be restructured. In the adoption of technology, legal considerations become governing.

#### *B. The learning outcome-driven assessment discourse*

In the learning outcome-driven assessment discourse, assessment is approached from its function of evaluating students' learning outcomes. In the discourse, the need to change and develop assessment practices in the time of emergent technologies is recognised. These changes relate to adapting the performance of the assessment to the digital context. This can be done by introducing various assessment forms (e.g., oral exams, quizzes). The changes are expressed and justified on the basis that students' fulfilment of learning outcomes must be able to be assessed. The discursive repertoire includes a focus on the need to rethink and redesign assessment with learning outcomes in mind, as illustrated below.

*Conducting an assessment remotely may mean that you need to rethink how knowledge and skills are assessed. A recommendation is, therefore, that before you start designing your assignments and tasks in the digital context, reflect on what learning outcomes you have in the course and how the student could fulfil these in other ways than through a written classroom exam.*

#### *C. The transformative assessment discourse*

In the transformative assessment discourse, emerging technologies are used as a lever to drive change in education. The point of departure is that assessment with digital technologies requires change. This demand for change is used as a momentum for management to drive educational

development at large. Emerging technologies are a lever to bring about change, as illustrated below.

*We [the university] need to take advantage of the situation and develop how we assess*

The discursive repertoires include an approach to management and control that equates educational work with industrial processes. The process perspective on education provides the opportunity to formalise, define and align the implementation of education in an era of emergent technologies. The increased use of digital technology offers the opportunity to regulate and follow up work and drive change in a management-decided direction. Processes for how teachers work to carry out assessments are controlled with increased digitalisation.

*Process and system support that is proven for remote assessment has been developed. It can be used and extended in future work with assessment.*

This process-oriented, straightforward, and path-seeking perspective on assessment with digital technologies sets boundary conditions for how assessment is carried out. These boundaries regard how the teacher should work and how different assessment forms should be carried out.

## IV. DISCUSSION

Previous research has argued for the importance of renegotiating both content, form and practice in the adoption of digital technology [3, 5]. In the discourses identified in this study, digitalisation is foremost about adapting the assessment process and not about renegotiated practice and developing what knowledge in a digital world means. In fact, the teacher's space for action to renegotiate how assessment is done in these discourses becomes limited when the implementation of assessment processes and forms is strongly governed, defined and structured. This means that the subject-specific considerations and changes in assessment need to be reconciled with other governing factors, such as governing assessment formats and interpretations of law. For all three discourses identified in this study, the adoption of digital assessment regards the task of adopting current practices to digital technologies. It is not about transforming or fundamentally changing how assessment in a digital world is.

Cotton [17] suggests that challenges with digitalisation are navigated both by introducing a clear structure for the implementation of assessment and by reviewing how and what is assessed. This study's findings show that a focus on structure foremost characterises the discourses. The development of assessment comes secondhand, and the set structures need to be taken into account.

Teacher's digital practice is an intersection between what is technologically possible and how learning and teaching are understood [4]. However, in this study, teachers' understanding

of digital learning and their approach to teaching and learning are given limited space and are neglected in the discourses. A critical discussion and problematising for assessment purposes are absent for all three identified discourses.

## V. CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

We have identified three distinct, coexistent assessment discourses. These discourses become prominent in different academic contexts. The findings exemplify how the teacher's assigned role and agency varies. Teacher agency depends on how well teachers' practice aligns with the prevailing institutional academic teaching discourse. Teachers whose pedagogical perception and practice differ from the prevailing normative discourse experience limited power and influence over their assessment practice.

This study explores the character of assessment discourses in the context of ongoing technological development and the ways in which teacher identities and assessment activities are constructed and reinforced in the discourse. The three assessment discourses in a time of emergent technology show that how assessment is carried out is controlled. Secondly, the teacher needs to adapt the development of the subject content to prevailing structures. The study shows that a distinction is made between how assessment is carried out and what is to be assessed.

## REFERENCES

1. Marshall, S., et al., *The reshaping of higher education: technological impacts, pedagogical change, and future projections*. 2024, Taylor & Francis. p. 521-541.
2. Chan, C.K.Y., *A review of the changes in higher education assessment and grading policy during covid-19*. Assessment & Evaluation in Higher Education, 2023. **48**(6): p. 874-887.
3. Bearman, M., et al., *Re-imagining university assessment in a digital world*. Vol. 7. 2020: Springer.
4. Naimi-Akbar, I., M. Weurlander, and L. Barman, *Teaching-learning in virtual learning environments: a matter of forced compromises away from student-centredness?* Teaching in Higher Education, 2023: p. 1-17.
5. Viberg, O., et al., *Exploring teachers'(future) digital assessment practices in higher education: Instrument and model development*. British Journal of Educational Technology, 2024.
6. Forde-Leaves, N., J. Walton, and K. Tann, *A framework for understanding assessment practice in higher education*. Assessment & Evaluation in Higher Education, 2023. **48**(8): p. 1076-1091.
7. Biesta, G., *Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research*. Educational theory, 2007. **57**(1): p. 1-22.
8. Trede, F., M. Fatayer, and S. Laudari, *Understanding academic teachers' perceptions of disruptions through the lens of practice architecture*. Higher Education Research & Development, 2024. **43**(2): p. 488-502.
9. Scholkmann, A., D.S. Olsen, and S. Wollscheid, *Perspectives on disruptive change in higher education. A critical review of digital transformation during COVID-19*. Higher Education Research & Development, 2024: p. 1-15.
10. Selwyn, N., *Digital technology and the contemporary university: Degrees of digitization*. 2014: Routledge.
11. Slade, C., et al., *Insights into how academics reframed their assessment during a pandemic: Disciplinary variation and assessment as afterthought*. Assessment & Evaluation in Higher Education, 2022. **47**(4): p. 588-605.
12. Rapanta, C., et al., *Balancing technology, pedagogy and the new normal: Post-pandemic challenges for higher education*. Postdigital Science and Education, 2021. **3**(3): p. 715-742.
13. Cohen, L.M., Lawrence; Morrison, Keith *Research Methods in Education*. 7th ed. 2011, London: Routledge.
14. Potter, J. and M. Wetherell, *Discourse and Social Psychology: Beyond Attitudes and Behaviour*. 1987: SAGE Publications.
15. Gee, J.P., *An Introduction to Discourse Analysis: Theory and Method*. Third ed. 2011, New York: Routledge.
16. Gee, J.P., *How to Do Discourse Analysis: A Toolkit*. 2011, Abingdon: Routledge.
17. Cotton, D.R.E., P.A. Cotton, and J.R. Shipway, *Chatting and cheating: Ensuring academic integrity in the era of ChatGPT*. Innovations in Education and Teaching International, 2024. **61**(2): p. 228-239.
18. Swedish Research Council, *Good research practice*. 2017, Stockholm