

# METHODOLOGICAL AND CONCEPTUAL SUGGESTIONS FOR RESEARCHING THE INTERPLAY OF ASSESSMENT AND STUDENT AGENCY

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## **Abstract**

It has been claimed that promoting student agency is one of the key features of new generation assessment practices in higher education. While studies in higher education have offered important new knowledge about how students show agency in assessment, what is largely lacking in the field of assessment and agency is i) an elaboration of the theoretical framework or a definition of the concept of agency, ii) a description of theory-driven data analysis and iii) the alignment of the theoretical framework and the analysis methods. In this chapter, we address these three points by offering an example of an earlier study on socio-cultural conceptualisation of agency and self-assessment. What follows is a critical reflection on the methodological choices of this paper. We argue that if the literature on assessment and agency keeps neglecting the socio-cultural aspects of agency, the research runs the risk of not being able to guide practice in the field of higher education or offer insights into oft-reported issues regarding student agency and assessment.

## **Key Words**

Assessment, student agency, higher education, research methodology

## **Introduction**

Educating students to take responsibility for their own learning is a common goal found in educational documents all around the world. The notion of student agency, one's capacity to act purposefully and autonomically (Emirbayer & Mische 1998), is crucial in higher education that prepares

students for professional vocations. It has been suggested that a primary function of new generation learning and assessment environments would be to promote student agency (Charteris & Smardon, 2018). In this chapter, we propose that this kind of purpose would also call for further understanding of the processes of promoting student agency and methodology that would support this understanding. Indeed, Charteris and Smardon (2018) have called for research to address the socio-cultural and socio-material aspects of agency (see also Charteris & Smardon, 2019; Charteris & Thomas, 2017). However, it has been claimed that the current assessment practices in higher education either neglect the notion of agency or even hinder students' agentic development. For example, in their seminal work, Boud and Falchikov argued that students are mainly seen as subjects of assessment: "They are recipients of actions of others, not active agents in the assessment process" (2006, p. 403). Therefore, there is a need to better understand the interplay of assessment and agency in higher education.

The focus of this chapter is on the role of assessment in promoting student agency in higher education, and the conceptual and methodological issues related to studying the interplay between the two. Our main thesis is that higher educational research on the interplay of assessment and agency has neglected those socio-cultural aspects of agency that Charteris and Smardon (2018) have called for. Furthermore, we argue that student agency has been under-conceptualised in the context of assessment in higher education and that this is reflected in the inconsistent methodological approaches.

In this chapter, we report on an earlier study by the first author in which the relationship between self-assessment and agency was investigated through student interviews (Nieminen & Tuohilampi, 2020). The study was conducted as part of the Digital Self-Assessment (DISA) project at the University of Helsinki, which focused on creating a model for digital self-assessment that included an element of self-grading, among other things. In this study, two self-assessment models, a formative one and summative one, were empirically compared in relation to student agency in the context of higher education. Both models were run in the same course with over 400 participants, and the students were randomly divided into the two self-assessment models. Students studying with the formative self-assessment model practised self-assessment during a university course, but their grade was determined by a course examination. In the summative self-assessment model, the students also practised their self-assessment skills, but at the end of the course they were able to choose their own course grade. In the study, we examined student interviews, after the students had received their final

grades, through the notion of student agency—did self-grading offer an affordance for a new kind of agency?

However, elaborating on the findings of this study are not within the scope of this chapter (we leave the reader with a cliff-hanger!), nor is self-assessment as a form of assessment. Rather, we have used this specific study as an example to illustrate how agency could be empirically studied, and critically reflect on the conceptual and methodological choices in this chapter in order to move forward those discussions about student agency and assessment in higher education. In addition to critical insights, we offer several alternative socio-cultural conceptualisations that could have been used to understand the interplay of self-assessment and agency further. For each conceptualisation, we have offered examples of potential research designs and analysis methods.

### **Assessment and agency in higher education**

For decades, there has been an interest in educational research about how both summative and formative assessment practices could support students' learning (Wiliam, 2011). Furthermore, the interplay between assessment and students' control over their own learning has been gaining significant attention in higher educational studies, with the connection between self-regulation and assessment being widely studied in recent decades (Panadero, Jönsson, & Botella, 2017). Many studies on assessment and agency draw on a psychological understanding of agency. The psychological notion of agentic engagement (Reeve, 2013) has been used widely in the field of assessment and feedback (e.g. Harris, Brown, & Dargush, 2018; Winstone, Nash, Parker, & Rowntree, 2017). What is common to these studies is their conceptualisation of agency as a feature of the individual. This is reflected in the choice of words by Evans (2013, p. 100), as she writes about “agency of giver and receiver” of feedback.

In this chapter, we have conceptualised agency through a socio-cultural lens. The field of assessment and socio-cultural understanding of agency is scarce (for instance, Nieminen & Tuohilampi, 2020 offer a brief literature review on self-assessment and agency). Many studies have drawn on socio-cultural frameworks of agency, embracing the social element of agency rather than the psychological, but used data-driven analysis methods rather than methods based on that specific framework (e.g. Francis, Millington, & Cederlöf, 2019; Harris, Brown, & Dargusch, 2018; Vattøy, Gamlem & Rogne, 2020). Furthermore, agency is often introduced as a colloquial word rather than as a scholarly concept. For example, even though Bourke (2018)

and Taras (2016) both examined the role of agency in student self-assessment, neither of them defined the term or tied it to a theoretical framework. Similarly, Milne (2009, p. 759) did not open up what specifically is meant by “feminist interpretations of agency” or how she drew on them in her analysis. Arguably, these omissions could be the result of strict word limits for publications. Yet, given the way in which we conceptualise the phenomena we study, or analyse our data, it is hard to see how the assessment and agency literature in higher education can move forward and be relevant for high education practice. Consequently, there seems to be a research gap in the field of higher education assessment and agency that utilises socio-cultural frameworks of agency and aligns this framework with justifiable methodological choices.

### **Towards socio-cultural understanding of student agency in assessment**

In this section, we introduce the socio-cultural framework for conceptualising student agency that was used in a previous study (Nieminen & Tuohilampi, 2020), namely *ecological agency*, based on the work of Emirbayer and Mische (1998). Its three dimensions—iterative, projective and practical-evaluative—highlight that students’ perceptions of assessment are always tied to their past experiences, imagined futures and the present situation. The *iterative dimension of agency* deals with how students’ agency is affected by their past experiences. The *projective dimension* refers to “the imaginative generation by actors of possible future trajectories of action, in which received structures of thought and action may be creatively reconfigured” (Emirbayer & Mische, 1998, p. 971). Finally, agency can only ever be acted out in the present: the *practical-evaluative dimension of agency* is connected with the present enactment of agency. As the framework offers conceptual tools to understand agency through its temporal and multifaceted elements, it seemed appropriate to utilise it to conceptualise self-assessment as a socio-cultural practice.

The perspective of ecological agency changes the viewpoint from agency as an individual feature of the student to understanding it as a feature of the learning environment (Biesta & Tedder, 2007). The focus is not on the amount of individual agency, but on what opportunities the learning environment offers to students to develop their agency. Therefore, the framework of ecological agency highlights the importance of understanding affordances and constraints to agency within every assessment environment, and how they are tied to their broader social and cultural contexts (Charteris & Smardon, 2018). Biesta and Tedder (2007) argue that

the ecological view sees the student acting by means of their environment, rather than simply in an environment. Therefore, the task of understanding the interaction between agency and assessment becomes a task of understanding which assessment practices are “more conducive to developing the different modalities of agency” (Emirbayer & Mische 1998, p. 1005).

In the original study, Nieminen and Tuohilampi (2020) focused on students’ agentic orientations; i.e. orientations that students displayed in their experiences during the interviews (Rajala & Kumpulainen, 2017) regarding their experiences of both formative and summative self-assessment. Initially, Nieminen and Tuohilampi analysed the orientations from Emirbayer and Mische’s (1998) ecological perspective, but continued their analysis to understand more specifically how students made use of the affordances of agency. In practice, Nieminen and Tuohilampi divided the agentic orientations into three types. First, students showed their agency by *adapting* to the self-assessment practices, by monitoring their own learning and taking more control of this learning. Students also showed their agency through *maladaptive ways* (Harris et al. 2018) such as by cheating in self-assessment. Finally, students showed *passive agency* during self-assessment when they felt helpless or unable to respond critically to the self-assessment practices during the course. It is notable that these three types of agency—adaptive, maladaptive and passive—were not based on an earlier framework but were constituted by the authors.

### **Emirbayer and Mische in action: Examining the previous analytical path**

How was the theoretical framework by Emirbayer and Mische (1998) put to play in the methodological choices made in Nieminen’s and Tuohilampi’s (2020) study? Next, we examine the analytical path of this earlier study in detail, not focusing on the topic of the study itself but on how agency was analysed from the interview data utilised in the study.

The study by Nieminen and Tuohilampi (2020) was built on student interview data. Forty-one students were interviewed regarding their experiences of self-assessment. The interviews were analysed in two phases; the first drawing on a data-driven approach, and the second drawing on a theory-driven approach. In the first phase, the interview transcripts were reduced by coding the parts in which the students reconstructed their experiences of self-assessment. The purpose of the first phase was two-fold. First, it enabled researchers to familiarise themselves with the large dataset.

Also, this phase divided the dataset into more manageable analysis units. We wanted to emphasise students' own voice as much as possible during the analysis process, especially since the research design did not entail any participatory methods. Therefore, the process drew on in vivo coding that used students' own words and sayings (Saldaña, 2016).

The second phase consisted of theory-guided qualitative content analysis (Schreier 2012) during which the agentic orientations (Rajala & Kumpulainen, 2017) of the students were identified. This phase utilised a 2 x 3 matrix for analysis that consisted of the temporal dimensions (Emirbayer & Mische, 1998) and types of agency. In terms of the temporal dimensions of agency, the practical-evaluative dimension was indicated in the students' reconstruction of their self-assessment behaviour during the course at hand, while the projective dimension was identified in accounts about students' future intentions to self-assess or to critically examine their own skills. The iterative dimension was excluded from the analysis, since students in the two randomised groups were not expected to differ in their past experiences on self-assessment.

By drawing on earlier literature (Harris et al., 2018) throughout the study, the authors sought to understand how students show their agency in different ways in relation to self-assessment. To this end, they used the concepts of “adaptive” and “maladaptive agency” and supplemented that with the notion of “passive agency”. The types of agency were coded as follows:

- maladaptive: accounts of agentially engaging with maladaptive behaviour such as cheating
- adaptive: accounts of agentially engaging with self-assessment to enhance learning
- passive: accounts of not being able to respond critically to self-assessment

As the theory-driven analysis phase drew on qualitative content analysis, the next step involved checking the validity of the analysis not only as a methodological approach but as a theoretical one as well. For example, during this phase the authors examined whether the analytical matrix would capture the interactions between various agentic orientations. The methods used were standard in the field of qualitative research. After the first author had individually analysed the transcripts of the first 20 interviews, both researchers went through these findings and discussed the unclear units of analysis. The second author randomly chose participants and recorded them

to check the internal validity. After all the transcripts had been analysed, the unclear units of analysis were again discussed, and the second author conducted further random checks of the coding. After this, the first author recoded the whole dataset. These discussions ended up being the most fruitful part of the process.

The results were contrasted between the formative and summative self-assessment models (of which the summative model included self-grading, whereas in the formative model students attended a course examination) to determine any differences between agentic orientations. It should be noted that the aim of using a contrasting process was to observe qualitative differences and nuances between these two data sources rather than to point out quantified differences in terms of the frequencies of the responses. The analysis resulted in an implication that only the summative self-assessment model, in which the students were able to choose their own course mark, was connected with the adaptive-projective agentic orientation. For the full results, please see the original paper (as noted before, these findings are out of the scope of this chapter).

### **On deeper critical reflection**

Being reflective and critical of your own work is an essential part of any scholarly endeavour. Yet, being immersed in one's own work can make one myopic and impede attempts to see the strengths and limitations of the work in a critical light. In order to deepen this critical reflection and to be more transparent about the Nieminen and Tuohilampi (2020) study presented above, before beginning the work on this chapter, the first author Juuso approached Jaakko, the second author, with a request to read the published study and engage in critical dialogue for this chapter. The authors had not previously collaborated. After Jaakko had read the study, Juuso and Jaakko met and discussed Jaakko's observations, what critical points his observations warranted, and how they could possibly be addressed in future studies on agency and assessment in higher education.

As we have argued above, in many ways, the Nieminen and Tuohilampi study (2020) is a step forward in relation to the identified challenges of earlier studies on agency and assessment. Nieminen & Tuohilampi (2020) offered a clear conceptualisation of how they understood agency from their socio-cultural perspective and how their perspective brought together theoretical and empirical work on agency to achieve this. Furthermore, Nieminen and Tuohilampi are also transparent about their method and strived, within the prescribed space limitations, to show how they analysed

their data and how that analysis supports their results and empirical claims. Importantly, their analytical pathway was not only clear, but it also aligned with their conceptual framework.

However, as with any study, the espoused theoretical framework and implemented research design bring with them limitations that need to be explored, reflected on, and learned from in conducting futures studies. For example, Nieminen and Tuohilampi (2020) drew on a rather simple classification of agency: *adaptive*, *maladaptive* and *lacking*. It was reported that the framework was able to capture those aspects from the data that the researchers desired to capture; this is unsurprising since the framework was ‘hand-crafted’ for the specific context of assessment in higher education. However, analysing students’ agency ‘from above’ as Nieminen and Tuohilampi (2020) did, represented an unreflective approach to agency research. Agency does not simply emerge from the data but is only identified through the researchers’ agency; a critical realisation considering this was neglected in the study by Nieminen and Tuohilampi (2020). This notion is even more critical as the students had no voice in the research process itself, but they were seen as the participants; the objects of the study.

Agency and assessment in higher education are both complex phenomena in their own right, and need to be approached from multiple theoretical and analytical perspectives to be more fully understood. The study by Nieminen and Tuohilampi (2020) only took part of this larger conversation through its very limited approach to ecological agency. In the next section, keeping our focus on agency and methodological clarity and alignment, we will discuss a selected array of alternative conceptual frameworks and aligned research designs which emerged as part of our critical discussions around the Nieminen and Tuohilampi (2020) study. Although conjectural in many ways, our propositions are aimed at further enriching the current epistemological, ontological and methodological grounds of studies on agency and assessment in higher education, and hopefully enriching the scholarly imagination of the field.

### **Moving beyond ecological agency**

In this section, we introduce various theoretical frameworks for student agency and the methodologies associated with them that could have been utilised to deepen the understanding of self-assessment and agency in the study by Nieminen and Tuohilampi (2020). As Matusov, von Duyke and Kayumova (2016) note, conceptualising agency is a situational rather than a universal task. Hence, we consider frameworks that would fit the context



of assessment in higher education, while maintaining our positioning at the socio-cultural end of agency.

### **Agency or sense of agency?**

While the ecological conceptualisation of agency by Emirbayer and Mische (1998) is illuminating, its main focus remains practical action. In short, it directs our attention away from how agency is experienced (Hilppö, Lipponen, Kumpulainen & Virlander, 2016; Rainio & Hilppö, 2017). As a result, the reflective aspects of agency, how people experience and reflect on their actions, is seldom highlighted in studies on agency. Moreover, many studies on agency could arguably be seen as analysing people's agentic experiences instead of their agency per se, such as when studies draw on interview data alone. Such studies, in addition to being conceptually unclear about the phenomenon they study, run the risk of understating or overstating their results given that people's accounts of their agency do not always fully represent what they have done in practice (cf. reliability of eyewitness accounts). A conceptual distinction that could help overcome these ambiguities would be to differentiate between the actions that people take (their agency), and their reflections on them (their sense of agency).

Sense of agency within philosophy and psychology is often defined as the individual's subjective awareness of being an initiator or executor of actions in the world (e.g., De Vignemont & Fourneret, 2004). A classic example relates to raising one's hand. When lifting our hand, we feel that the movement is the result of what we wanted to do, that we initiated and carried out that action. This experience of being the initiator of one's action is often called a first order sense of agency (Gallagher, 2012). When this action is explained to others, put into words, like "I raise my hand to answer the teacher's question in class", that first person experience of agency turns into a narrative about one's agency or what Gallagher (2012) calls a second order sense of agency. From a socio-cultural perspective, such reflections are socio-culturally mediated and distributed (Wertsch, Tulviste, & Hagstrom, 1996). That is, when reflecting on our actions we make use of a range of cultural tools such as language and various complex semiotic resources which, in return, influence how we interpret those actions within a specific cultural context (Gillespie, 2007). Furthermore, such reflective accounts are always produced in certain situations and thus are subject to the various social aspects of those situations via which the accounts emerge. Accordingly, reflections on one's actions produced in interviews should be understood as being embedded in that particular situation and as being

produced in joint activity; this is an aspect that the study by Nieminen and Tuohilampi (2020) did not consider. Through such accounts, the person's agency becomes available to us as analysts both as an act of agency, but also as a narrated experience of it, as their sense of agency. To clarify, from a socio-cultural perspective, producing a narrative account of one's actions is an agentic act in itself.

In relation to assessment in higher education, these accounts can be then analysed in many ways, for example focusing on how the narrator is positioned as an agent in these accounts. Alongside Emirbayer's and Mische's (1998) ecological agency framework, a person's sense of agency could be analysed in terms of the different modalities of agency they use in their accounts (e.g., Hilppö, Lipponen, Kumpulainen & Virlander, 2016). In the context of assessment in higher education, such an analysis could focus on how students position themselves in relation to different assessment practices (e.g., formative or summative assessment). More specifically, such an analysis could focus on what role, if any, the practices seem to play in the student's sense of agency in relation to their own learning, especially if their sense of agency has changed or developed during their study.

### **Discursive conceptualisation of agency**

If one wishes to take a discursive approach to student agency, the opportunities for a starting point are many (see e.g. Arnold & Clarke, 2014). Here, a specific example of the Foucauldian notion of power is introduced to offer an example of a postmodern conceptualisation of agency. This example offers a way to conceptualise agency through a political lens; the discursive approach has been used to identify structural discrepancies of agency at the societal level (Ikävalko & Brunila, 2019). In a similar way, the discursive approach to agency conceptualises assessment in higher education as a political act, aiming to identify structural discrepancies of agency in assessment.

Drawing on Foucault's idea of discourse as the "practices that systematically form the objects of which they speak" (1977, p. 49), we introduce the notion of *subject positioning* to connect the concepts of power and agency. According to Foucault (1977), power relations produce subjects such as students and teachers. Subjects occupy stable – yet discursive – positions within the discourse, and these positions control what can be done, said and thought within a certain socio-cultural context (Arribas-Ayllon & Walkerdine, 2008). How these positions are formed through assessment would be an interesting question for future research – particularly how those

positions are constructed. For example, Evans (2011) identified the discursive position of a performer for students through a document analysis. In terms of self-assessment, it might be especially interesting to study those *technologies of self* (Foucault, 1991) that students use to position and self-govern themselves in their discourse related to assessment.

A Foucauldian analysis of subject positioning could be used for interview data. In fact, this would nicely supplement earlier studies on the same topic based on document analysis (Evans, 2011). For example, the interviews from Nieminen's and Tuohilampi's study (2020) could have been approached by focusing on the mechanisms of subject positioning. The notion of technologies of self might be useful here to consider the discursive practices that students use to position themselves; as passive performers (Evans, 2011) or maybe as reflective actors who could not only actively observe their positions but also position themselves differently. Longitudinal and more diverse data collection procedures would offer deeper insights into how assessment co-constructs subject positions; this empirical approach is necessary in fields characterised by interesting yet broad and decontextualised societal approaches. One might follow Worthman and Troiano (2019) by applying their methodology in higher education. In their study, one student was followed through a year-long course. The dataset consisted of interviews with the student, his teacher and his parents, and all the course work conducted during the research. In higher education, data could be collected during the actual assessment practices to understand positioning mechanisms 'in action'. This leads us to consider whether student-centred assessment practices might offer an opportunity for alternative subject positions, and therefore more opportunity for agency.

The discursive understanding of agency offers tools for researchers to engage in self-reflection of the discursive boundaries from within their work. An interesting opening in the field comes from Bagger, Björklund Boistrup and Norén (2018), who analysed the technologies of self that restricted their *knowing*—and therefore agency—as assessment researchers. They describe the writing process of the article as “empowering”, as they gathered information about the “opportunities as researchers in relation to what the socio-political context makes acceptable and available” (Bagger, Björklund Boistrup, & Norén, 2018, p. 298). As the Foucauldian framework does not conceptualise assessment research itself as a neutral act, the discursive understanding of agency opens an opportunity for research communities to access alternative subject positions.

### **Pickering and agency**

A notable alternative to Emirbayer's and Miche's (1998) ecological conceptualisation of agency is Pickering's (1995) theory of agency based on his studies of particle physicists. Pickering's theory is known and used in the field of mathematics education (Gresalfi, Martin, Hand & Greeno, 2009; Wagner, 2007), but to our knowledge it has yet to be applied to student self-assessment practices. Like Emirbayer and Mische (1998), Pickering's theory differentiates between three aspects of agency, namely *disciplinary*, *conceptual* and *material*. In short, disciplinary agency highlights decisions on how to act that scientists make by relying on set procedures and established ways of working informed by the norms of their disciplinary community. In contrast, conceptual agency refers to moments when scientists choose between the options offered by their discipline or developing meanings and relations between them. Lastly, material agency describes how non-organic entities, like particles, laboratory machines and the like, affect the course of scientific investigations by resisting, stopping altogether or aiding the work of scientists (Pickering, 1995).

Pickering's conceptualization of agency opens up several interesting conceptual avenues for research on student self-assessment in higher education. At the outset, differentiation of conceptual and disciplinary agency could function as helpful analytical categories in describing students developing (sense of) agency. If we understand the goal of self-assessment as being to facilitate the growth of the student's own competence in their discipline, this growth could be reflected in changes in their decision making during the course, simply stated as a move towards enacting more conceptual agency than disciplinary agency. Careful analysis could parse more subtle analytical categories within these two general distinctions and the different pathways students use to gain conceptual agency with the help of the assessment practices. Alternatively, the self-assessment practices themselves could also be viewed as a discipline themselves. In this case, the analysis could focus on how students use and come to master different ways to assess their own disciplinary competencies. But what then about material agency? How could that be taken up in a study of student self-assessment? We will elaborate the notion of material agency more in the next section.

### **New material views on agency**

All the conceptualisations of student agency detailed above privilege the human actors as the centre point of agency. We offer a materialist perspective for understanding student agency that expands the notion of agency to objects (Charteris & Smardon, 2018; Coole & Frost, 2010).

Bennett (2010) writes about “thing-power” as “the agentic contributions of non-human forces” (p. xvi) that exceeds the normally passive status of an object through a manifestation of independence. According to Bennett, the new material view on agency offers a counter-force “to counter the narcissism of humans in charge of the world” (p. xvi). The aim of the new material approach to agency is to help us in understanding the agentic interaction between human and non-organic entities. However, this approach does not designate agency as an attribute of a human or an object; rather it conceptualises agency as the doing/being during the human-non-human-interactions (Barad, 2003). Barad (2003, p. 827) elaborated that: “Agency is the enactment of iterative changes to particular practices through the dynamics of intra-activity.”

How could these ideas be utilised in the field of higher education assessment? Actor Network Theory (ANT) offers a tangible way of extending the new materialist approach to empirical assessment research (e.g. Fenwick & Edwards, 2012; Law, 2009). ANT opens up the black boxes of actor networks that consist of both human and non-organic socio-material entities, aiming to understand assessment practices as social artefacts (Law, 2009). ANT especially focuses on *translations* that occur when entities come together and connect by forming links (Fenwick & Edwards, 2012). These links form networks through various procedures; for example, an innovator might ask for others to join a network and then work towards stabilising the network. ANT could be applied to understanding the networks of agency between various actors in self-assessment, and the mechanisms of production and stabilisation of these networks.

In the context of Nieminen’s and Tuohilampi’s study (2020), analysing both the micro and macro levels from an ANT perspective would have generated interesting and potentially important considerations. The macro level analysis could have conceptualised the self-assessment models as actors themselves by analysing the actor network to which it is connected. The summative self-assessment model was created in a 2017 research project at the University of Helsinki, where its inventors actively aimed to widen its network of users (or, university lecturers). The mechanisms of the expansion and constriction of the network would offer an interesting approach for research. So far, the model has been utilised in smaller university courses with dozens of participants, as well as with courses of over 400 participants. An important part of stabilising the network is to convince students to engage with the self-assessment process; this is particularly crucial in exam-driven contexts such as undergraduate mathematics. As the self-assessment tasks were digital, the ANT analysis

could incorporate digital devices as well. The analysis could look at whether summative self-assessment forms coherent networks, and what might disrupt the formation of those networks. The analysis could look for primary agents that dominate the formation, either tightening or disrupting the network. This kind of analysis would need some additional data; perhaps the teacher and the student tutors could be interviewed as well. Also, ethnography might offer an interesting approach for this kind of research. In the first implementation of the self-assessment model, a researcher took part in the course along with the students; however, this experiment was cancelled after a couple of weeks because of the demands imposed by the content of university mathematics that the course was addressing.

On the other hand, ANT analysis could be utilised to understand material agency at a micro level. The analysis could look at the translations between specific self-assessment tasks, student users and their technological devices. Additional data on the real-life moments during which the self-assessment tasks were fulfilled would enhance the ANT analysis—this might be collected through video data, think-aloud methods or the digital learning environment (for example, through screen-cast technologies). The nature of the agency of the self-assessment tasks themselves would offer an interesting perspective for future research, especially in the field of summative self-assessment that involves self-grading.

### **Authorial agency**

Finally, we introduce the concept of authorial agency (Matusov, von Duyke, & Kayumova, 2016). At its core, authorial agency emphasizes the learner's inalienable right and responsibility to guide their own learning. Any pedagogical guidance or pre-existing scaffolding, like the curriculum, is valid only if learners endorse them as helpful for their personal learning journey. Yet, for authorial agency to emerge and be supported, it needs such structures and aids, a community that values students transcending its boundaries (Matusov, 2011). In this sense, authorial agency sees students as co-participants and co-creators of a culture of transformation and dialogue. Such an approach, with its emphasis on meaningfulness and humanity, is often in sharp contrast to the conventional mass production logic of higher education, as Matusov and colleagues explain:

Authorial agency as applied in an educational trajectory values uniqueness, unpredictability, and caring for and interest in others while curricular standards prioritize interchangeability (i.e., one

capable person can be replaced with another capable person without disrupting the activity or social relations), predictability (i.e., calculation and control of others), and structural exploitation. (Matusov, von Duyke, & Kayumova, 2016, p. 442).

This conceptualisation of agency takes a strong political stance (cf. discursive agency), as educational institutions are often built on pre-set curricula that leave little room for active student creativity. Authorial agency should be particularly emphasised in higher education, which claims to foster lifelong learning rather than just preparing students with a predetermined set of skills. For example, the Finnish Universities Act (558/2009) asks universities to educate students to “serve their country and humanity at large”. However, Matusov and colleagues (2016) argued that within formal educational settings, learning is quite often alienated from the student’s authorial agency. This rings true in terms of assessment, since formal assessment methods rarely allow students to have opportunities for co-creation of cultures of innovation.

One possible productive direction for the original study by Nieminen and Tuohilampi (2020) could have been to observe summative self-assessment from the viewpoint of authorial agency. First, summative self-assessment conceptualises learning and reflection as individual actions. This contradicts notions such as ‘communities of practice’. Second, the guided process with its feedback cycles and self-reflection tasks might not have provided opportunities for authorial transformation, or rejected the pedagogical structure of the assessment itself. In this sense, authorial agency offers an interesting framework through which to reflect on the role of summative self-assessment in subject-specific learning. The course was an undergraduate mathematics course (being one of the first university courses for new mathematics students) the goal of which was to teach a predetermined set of content and skills. Could assessment promote authentic agency in the first place? More broadly, as Matusov and colleagues (2016) point out, we might be at the beginning of an “agency revolution that might break itself from neo-liberal and market-like alterations of agency” (p. 443). Whether this is an optimistic statement or not, the role of assessment in the larger picture is certainly worth examining. It might well be that assessment is a critical factor hindering ‘agency revolutions’ in higher education, at least when considered non-authorial from the learner’s perspective.

**Recommendations for future socio-cultural studies on the interplay of assessment and agency**

Based on what we have learned during the writing process—and the conceptual explorations alongside it—we offer a synthesis of our key points. We hope to see more studies in the future on assessment in higher education that utilise socio-cultural perspectives, yet these suggestions should be considered for methodological rigour before and during the undertaking of such research.

*The concept of agency needs to be defined and tied into a theoretical framework.* It is simply not sufficient to use ‘agency’ only as a colloquial term in higher education assessment research. The notion of agency has been studied extensively in educational research (Matusov, von Duyke, & Kayumova, 2016), so the number of existing frameworks is vast. We argue that the least researchers can do is to be transparent when they situate themselves in the epistemological continuum of agency (Charteris & Smardon, 2018). Also, the categorising of different definitions of agency by Matusov and colleagues (2016) offers a tool for assessment researchers to situate their conceptualisations of student agency.

*There is a need to further develop methodologies, and methods of analysis in particular.* This chapter built on an earlier study on summative self-assessment. Even though the assessment practice itself was far from perfect, it introduced an innovative model of which the aim was to connect with the idea of new generation assessment environments (Charteris & Smardon, 2018, 2019). If assessment is truly to promote agency, it demands innovative openings from both practitioners and researchers. Furthermore, data collection methods for the interplay of assessment and agency should be diversified. For example, a longitudinal mixed methods approach in the study by Nieminen and Tuohilampi (2020) would have revealed whether summative self-assessment offered affordances for longer term agentic behaviour, as implied by the agentic orientations after the course finished.

*The theoretical foundation of agency and research methodology should be aligned.* We ask assessment researchers interested in agency to ask themselves: How do the methodological choices in my study reflect my conceptual and epistemological premises? We especially encourage assessment researchers to move away from data-driven approaches (e.g. thematic analysis, inductive data-driven qualitative content analysis) when agency is analysed. If agency is conceptualised through a strong theoretical framework, that should also be reflected in the analysis. For example, the study by Nieminen and Tuohilampi drew on qualitative content analysis; even though the method itself is simple, it was utilised to operationalise the conceptual framework by Emirbayer and Mische (1998).



Finally, we strongly recommend assessment researcher engage in reflective practices for carefully considering their methodological practices. This chapter acts as a tangible artefact of a self-reflection, and we hope it will provoke further discussion rather than acting as the last word. Just as Bourke (2018) has suggested, self-assessment has the affordance of inciting awareness, and through that it promotes agency; this rings true for assessment researchers as well. Inherent to a socio-cultural approach is a self-reflective perspective, demanding active agency from the research community (see Bagger et al., 2018 for analytical suggestions of agentic self-reflection). It is not a toolbox of methods, but it is a comprehensive way of thinking that calls for critical understanding of our assessment methods, and our own position and agency as researchers.

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