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From expectations to generative uncertainties in teaching and learning activities. A case study of a high school English Teacher in the times of Covid-19

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HIGHLIGHTS
- The pandemic expanded the Meso level of educational organizations at the expense of the Macro one.
- The re-organization of teaching and learning exposes students and their teachers to uncertainty.
- Uncertainty refers to situations or issues that are not yet determined and open to possibility.
- The uncertainties that students articulate are entangled with those of their teacher.
- Uncertainty can become productive when students turn away from what the teacher expects.

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ABSTRACT
This article presents a case study focusing on conceptualizing uncertainties that three groups of high school students and their English teacher have articulated during the re-organization of their teaching and learning due to the COVID19 pandemic. By looking at the relationship between students and their teacher as a triadic one, we disambiguate the notion of uncertainty distinguishing between uncertainties related to expectations from those that are generative. Generative uncertainties are the expression of a genuine creative tension, as both students and their teacher attend to the very task at hand, rather than focusing on expectations.

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1. Introduction
As a result of the lockdown introduced in many countries in Spring 2020 and later during the year, educational institutions had to face the unprecedented challenge of quickly adapting to an emergency that touched all domains of life. Such an unprecedented challenge was saluted early on by some commentators in the global public sphere as a unique opportunity for the education system to bring about change (Selwyn et al., 2020; Zimmerman, 2020). Teachers responded to the emergency by turning to different online tools available to compensate for the lack of physical presence. Some argued that what teacher training courses had not achieved during the previous decades; the pandemic accomplished in a few weeks. Others – less optimistic – warned about the consequences of emergency remote teaching (Hodges et al., 2020) and the consolidation of corporate power in the domain of education (Williamson et al., 2020).

In its own tragedy, the reactions to the pandemic can be considered an authentic experiment conducted at a global scale, in which teachers and students, along with other actors, are forced at least temporarily to re-organize learning and teaching activities through the mediation of digital technologies. As pointed out by Eradze et al., 2021, the crisis offers a “magnifying glass” thanks to which it is possible to gain insight into educational change and re-organization. As such, educational re-organization exposes different educational actors, chiefly, teachers and their students, to a variety of options and possible changes, which create uncertainties. We posit that such uncertainties do not represent problems to solve, but a signpost of a potentially generative space,
which plays a critical role in determining the path that educational change may concretely take, for better or worse, in a hopefully post-Covid world. In this article, we specifically focus on uncertainty. The main aim is to re-conceptualize and illustrate its pedagogical value for both students and teachers, and consequently, highlight its relevance for learning and teacher professional development. It is worth noting that uncertainty is not a prerogative of the present turbulent times. The pandemic offered the chance to cast light on such a concept, but our treatment is equally informative in contexts outside emergency situations.

In order to substantiate the proposal, in this article, we offer a case study, which focuses on the uncertainties articulated by an English Teacher (one of the co-authors of this article), and her own three classes during the re-organization of teaching and learning in the form of an intervention conducted in Autumn 2020. This specific case is situated in the context of the broader re-organization in the school itself – a private school in the capital of Estonia, Tallinn.

2. A narrative for the pandemic and the centrality of uncertainty

2.1. Re-organizing and the expansion of the Meso level

The pandemic might be seen as a magnifying glass. But what is it that has magnified? In order to answer such question, we start from a recent contribution by Secchi and Cowley (2018; 2020) in the field of organizational cognition. Secchi and Cowley revisit the traditional distinction between macro structures and micro tendencies by developing a theoretical framework, which brings our attention to a third element, which is commonly referred to as the Meso level. Such terminology originally comes from sociology (Huisman, 2011; Turner, 2012) and has been already used in different fields, for example, environmental studies (Bergström, 2014) as well as in education (Aizawa & Rose, 2019; Barnard, 2021; Falconer, 2019; Jephcote & Davies, 2005; Kaseorg, 2017). Secchi and Cowley emphasize that the distinction in Macro, Micro and Meso level chiefly concerns the different organizational layers, which, in turn, are characterized by their own specific socio-cognitive processes.

The Macro level is essentially the level of organization where patterns of collaboration, structures, frames, expectations, habits, routines (Feldman & Pentland, 2003), strategies, roles, hierarchies (Pfeffer, 1992), etc., become crystallized and formalized. This is where we situate the national curriculum, standardized assessments, but also timetables, the arrangement in classes determining the pupil’s age, the formalized roles such as that of subject and class teacher, student, school director, etc. The Macro level contains everything that has already been organized and therefore its main function is to offer a framework within which all the actors involved can reasonably expect certain outcomes to materialize. In this sense, it overlaps with what Tyack and Tobin called the “grammar of schooling” (Tyack & Tobin, 1994).

The Micro level sits opposite to the Macro level. As Secchi and Cowley acknowledge, the Micro level is expressive of individuals’ neurophysiological processes, but it also refers to agendas, plans, strategies, views, interests, preferences, personalities, proclivities, and attitudes. In this sense, the Micro level is the major source of variety, as no individual is alike. It is worth noting that the variety expressed at the Macro level is fundamentally unorganized or, better, not yet organized. At the Micro level, the individual along with his/her biological endowments, preferences, etc. appears in isolation. The Micro level overlaps very much with what has been traditionally studied by psychology, which takes the individual as its unit of analysis.

Secchi and Cowley call our attention to an intermediate layer – the Meso level. As they put it, this Meso level is “the hub of organizational life” (Secchi & Cowley, 2021). The Meso is the organizational layer that is supposed to mediate the forces that the Micro and Macro exercise on each other. Such mediating level is where organizing takes place. From time to time organizing implies re-organizing, which, as we will see, is a central feature in the times of the pandemic.

While Secchi and Cowley do not specifically refer to educational organizations, we may argue that in the education system the Macro level provides stable frames within which teaching and learning activities can be successfully carried out collectively. However, taking care of the viability of the system implies confronting the kind of contingencies and unexpected occurrences, which characterize teaching and learning activities and their management. This is not a mechanical activity. Conversely, it involves dealing with concrete situations with particular people within specific timeframes. It implies the coordination of activities, which may not fall into a specific pattern, but that, on the contrary, requires tinkering and adjustments. In times of crisis or historical discontinuity, it is at the Meso level where the generation of new and alternative forms of collaboration takes place (see Table 1).

As mentioned above, Covid19 was a major disruptive event, as it forced educational institutions around the globe to re-organize. As mentioned above, Eradze and colleagues (2021) argue that during the current pandemic we have been witnessing the expansion of the Meso level as a consequence of the dis-organization of the Macro level. Therefore, educational institutions such as schools and universities were forced to re-organize their teaching and learning activities in direct response to the fact that one of the pillars at the Macro level – chiefly related to being physically present in the classroom – collapsed (see Fig. 1a and Fig. 1b).

It is worth noting that the disruption of the Macro and the expansion of the Meso contributed to an increase in the variety of ways in which teaching and learning activities can be re-organized thanks to the available digital tools. While before the pandemic, teachers and students relied on certain patterns and routines, suddenly, a variety of formats - hard to pin down concretely - appeared in relation to the use of various digital tools such as virtual meeting platforms, learning management systems, as well as other specific mobile or desktop applications. Such formats are a mere response to a situation of crisis as noted above. However, at least conjecturally, we may refer to them precisely as an expression of the variety of ways in which teaching and learning activities can be re-organized using the digital tools available, the recurrent dream of many educational technology scholars already since last century (Cuban, 2001).

It is worth noting that the increase of variety of ways in which

| Table 1 |
|---|
| Roles and processes related to the three organizational layers. |
| Macro | Organized | Anticipatory of outcomes | Certainty given by organized structures |
| Meso | Organizing | Responsive to situations | Handling contingency |
| Re-organizing | Generative of new/alternative organized forms of collaboration | Handling opportunities and uncertainties |
| Micro | Unorganized | Generative of variety | Source of variety |

2
teaching and learning can be organized does not automatically convert into educational change and innovation (Eradze et al., 2021). The potential re-organization of teaching and learning exposes teachers and students to uncertainty, and relates to the fact that new or simply different options become available the selection of which is not straightforward. We claim that looking at how students’ and teachers’ uncertainties and their mutual interconnections becomes an important step to take in order to steer the ongoing change towards educationally desirable goals.

2.2. Uncertainty in teaching and learning

What is uncertainty? Jordan (2015) posited that uncertainty concerns a subjective experience related to doubting, wondering, being unsure of what the future will bring and how things will unfold. In this sense, uncertainty should not be mistaken for simply ignoring that something is the case. However, uncertainty is not a mere subjective state: doubting, wondering, being unsure are prompted by being in a situation and dealing with issues that are yet to determine and settle, open to possibilities, the determination of which is primarily a responsibility that we take (Biesta, 2015). In this sense, facing uncertainty does not entirely overlap with a problem-solving activity, which can be addressed by relying on ready-made solutions coming from the past (Arendt, 1960). Consequently, uncertainties are what students and teachers experience and articulate when being in a situation that is not yet determined and still open to further developments.

There is a general consensus around the fact that teaching and learning are characterized by chronic if not radical uncertainty (Biesta, 2015; Labaree, 2000). No teaching situation will repeat itself in the same way (Sinnema et al., 2017). Teachers and students are dealing with unpredictable as well as unknowable situations (Floden & Clark, 1988). Feedback may remain ambiguous, as it depends on the student’s ability to articulate his/her needs, doubts, concerns, which cannot be taken for granted (Biesta, 2005). Pedagogical deliberation is not informed by objective knowledge, but it must accommodate itself to “what it finds, responsively and with respect to complexity” (Kessels & Korthagen, 1996, p. 19), which is what defines phronesis (cf. Eisner, 1999; Hostetler, 2016; McLaughlin, 1999). Uncertainty is also constitutive of learning. Bohm (2004) pointed out that learning “something new” is invariably connected to the situation in which the habitual and mechanical way of perceiving something in the world is dismissed. As Bohm explains, it is only through sensing the difference between what actually happens and what it is expected that learning takes place. And that is uncertain.

Additionally, the teacher-student relationship itself is of a peculiar kind, because it cannot be fully compared to the one that other practitioners, such as lawyers or surgeons, entertain with their clients (Cohen, 1988). Lawyers can successfully accomplish their tasks without their client even saying one single word (Labaree, 2000). Conversely, in the teacher-students relationship the teacher ontologically depends on the student(s) to achieve the desired outcome. As Matusov (2009) pointed out, such desired outcome chiefly involves the transformation of student’s meaning, over which the teacher does not have control.

Uncertainty is constitutive of learning and teaching. It may be productive (Mintz, 2016) and generative, thus conducive to learning for students and professional growth for teachers (Lygo-Baker, 2019). However, plunging into situations that are not determined or settled yet for which, teachers and students have to take responsibility, might be accompanied by confusion and the sense of being lost. That might eventually lead to experiencing profound distress, anxiety and guilt (Hargreaves, 1994; Syvanen et al., 2016). Approaching uncertainty is not a straightforward matter, and therefore, should be problematized.

In order to do that we argue that we should look at how students’ uncertainties, and their teacher’s, are interconnected and thus mutually affect one another. Building on the work done by Lucas (1996), Bardone and colleagues (2017) pointed out that students and their teacher enter in a relationship that can be described as a triadic one, in which the student (1) is responsible for carrying out tasks (2) to the teacher (3). Responsibility is also shared upward, meaning that the teacher in performing his/her social role of educator is acting on behalf of society as a whole, to which he or she has, in turn, to respond (See Fig. 2).

The way in which such triadic relationship unfolds brings about a number of scenarios that concern the specific uncertainties experienced by teacher and students, as well as the possibility that those uncertainties are or may become conducive to learning, growth, and educational change. For example, teachers may create learning activities devoid of ambiguities that allow the students to more effectively reach learning outcomes and contribute to students’ sense of achievement. However, that might eventually lead to the avoidance of more realistic and ill-defined matters, and therefore, should be problematized.

![The three organizational levels in normal times (a) and in times of crisis (b) (cf. Eradze et al., 2021).](image-url)
reduce uncertainty. Additionally, the quest for certainty might also affect teachers. For example, Schuck and Buchanan (2012) noted that the emphasis that is often placed on objective teaching standards in teacher education programs prioritizes confidence and self-efficacy over doubt and wonder, whose value might thus be drastically undermined.

Uncertainty plays an even more important role when teaching and learning activities themselves are the main object of re-organization. Re-organization may prompt teacher and students to re-define their mutual expectations, what can be achieved, the use of technology and roles, which potentially can be the basis, as we noted, for crucial changes that might be carried over into a hopefully post-covid education. That is what the present article specifically addresses.

3. The focus of the article

The context of the study is the re-organization of teaching and learning activities carried out by one of the High School teachers working in a private school called Rocca al Mare. The school in question was founded in 2000 and has offered since then primary and secondary education to approximately 1000 pupils in three locations in [anonymized].

In coincidence with the re-organization of the school activities related to the pandemic, Aet [real name anonymized] tried to develop her own teaching practice, which would 1) give students a more active role during the teaching process and 2) be the stepping-stone towards more progressive, self-directed forms of education, which the school could start from to renew itself.

Together with the other author of the article, Aet developed and implemented a plan specifically targeting the re-organization of her own teaching practice in a form of an intervention, which constitutes a didactical unit based on the requirements of curriculum. Our focus is to look at the uncertainties related to the intervention within the context of the triadic relationship to conceptually disambiguate the notion of uncertainty. In the specific context of this article, we addressed two specific issues:

1) what are the uncertainties that students have articulated, when their actual role changed due to the re-organizing of learning and teaching activities undertaken by their teacher?
2) what are the uncertainties that the teacher herself articulated in relation to the re-organization of her teaching practice?

Additionally, another element of interest, which sits in the background, is the use of technology. We posit that the role shifting and the subsequent re-organization of teaching and learning activities also affect the way in which the different digital technologies can be used to support learning and teaching activities, which is another potential source of uncertainty to consider.

4. Research design and methodology

4.1. Embedded case study

Investigation of the uncertainties related to the re-organization of teaching and learning during the pandemic is carried out in the specific context of the ongoing changes in Aet school. The uniqueness of the case consists in the fact that the school has been undergoing a process of re-organization in connection to the pandemic. As we will see in detail in the next section, the management of the school with the participation of the teachers initiated a series of changes in Summer 2020. Such changes were meant to prepare the school for the Autumn semester and a possible second wave, but also as a springboard for a general re-organization of the teaching and learning activities in the school. It is within this case that we situate our specific focus.

What we are going to present can be described as an embedded case study (Scholz & Tietje, 2001). While the holistic case study design addresses a particular case as a whole — in our case, the school, the embedded case study design is characterized by multiple units of analysis (Budiyanto et al., 2019; Scholz & Tietje, 2001), each of them focusing on different aspects within the case. As anticipated, the unit of analysis under consideration in this article is the re-organizing of teaching and learning led by one specific teacher during the pandemic in the form of an intervention, which, as we said, overlaps with a didactical unit.

4.2. Action research

The activity of re-organization led by the teacher can be methodologically framed as action research. By definition, action research implies the interaction between different activities performed by a teacher such as the identification of an issue to address, the collection and analysis of data relevant to the case at hand, which may then produce insights and reflections to bring to a higher level of abstraction (Mills, 2000). In the present case, we will focus specifically on an intervention carried out by the teacher in the autumn. The intervention was inspired by the principles of action research (Baskerville, 1999), because 1) there was a commitment to change through action; 2) they were oriented at producing changes in a complex social setting; 3) practical concerns are connected to more theoretical issues and 4) they are meant to produce reflections.

As already stated, the intervention is contextualized in an ongoing process of re-organization of teaching and learning.
activities. Fig. 3 shows the timeline of the activities undertaken. The main purpose of the intervention (see Fig. 4) was to experiment with an activity that could be conducted as a distance learning one and that would involve the students as creators of study aids exploiting the principles of “learning by teaching” (Fiorella & Mayer, 2013). Working in groups, students had to devise study tasks that would help their colleagues learn a specific curricular topic assigned by the teacher (see Appendix A). Students were given up to 10 days to complete them, after which the study tasks were distributed. As noted already, such intervention was meant to provide a learning experience that would take advantage of the ongoing re-organization at the school level.

4.3. Co-researching and observant participation

When it comes to data collection and data analysis, we deployed co-researching. Co-researching is an approach that is based on the involvement of non-professional researchers in a given study (Bergold & Thomas, 2012). Co-researching allows for the integration into the research of what is usually referred to as the emic viewpoint. The term “integration” refers to the fact that such viewpoint was not simply recorded during the study, but it was part of the research since its outset. The co-researcher was fully included in the study since its inception and provided her point of view at each stage of the investigation. The research conducted together and reported in this article is formally part of a project devoted to designing two interventions that would support high students’ openness, in which Aet was involved together with the first author of the article.

The data for the embedded case study was collected by the co-researcher, who was engaged in observant participation (Moeran, 2009). Students’ uncertainties and reflections were collected anonymously in a written form. Appendix A describes the questions asked during the intervention in Autumn. For the data collection Google Forms were used, which is part of Google for Education the school had been using since 2018. Google Form allowed the students to answer questions directly from their mobile device.

The study does not focus specifically on how students relate to uncertainty, as in case of Jordan (2015), where the author shows students’ different propensities to uncertainty and their related pedagogical value. However, we are aware that asking students to articulate and express in written form their own uncertainties as these arise provided an important scaffold for the students. Specifically, the scaffold allowed students to pause to reflect, which Jordan acknowledges as a resource for the students in facing uncertainty.

Students’ answers were then timely analyzed by two authors of the article. Students’ answers were complemented by Aet on-action reflections, which were collected during the study by the first author of the article, who held up a sort of mirror for Aet to develop her own reflexivity and connect her reflections to broader and more abstract issues concerning re-organizing and uncertainty. Appendix B describes that.

5. The case study

5.1. Background

In March 2020 Aet school went into forced lockdown, which was extended until the beginning of June 2020 due to the COVID19 pandemic. The period of forced remote teaching turned out to be for some of the teachers the chance to re-think how to re-organize teaching and learning activities in the new school year. Consequently, in May 2020 the management of the school organized a task force aiming at: 1) taking stock of the experience gained during the emergency remote teaching and 2) preparing for the new school year in absence of clear guidelines from the national government as to how to proceed in case of a second wave. The reorganization was meant to make significant steps towards increasing students’ responsibility for their learning process and incorporating new ways and methods of learning from the next academic year.

Later in June the task force gathered with 39 teachers - roughly 40% of the teaching population of the school - to discuss the re-

![Fig. 3. The timeline of the re-organizing activities.](image3)

![Fig. 4. The sketch of the intervention.](image4)
organization of teaching and learning activities in the year that would follow, bearing in mind the general orientation described above. In the subsequent meeting in August, right before the beginning of the academic year, the key aspects were found to be the introduction of independent study days at all levels of school, which would combine contact classes with distance learning practices to support different ways and paces of learning.

As the new school year began, the situation with COVID-19 had rapidly worsened. The school was not able to carry out the initial plan of independent study days, but, instead, was forced to begin hybrid learning — the school being at distance learning on alternate weeks except for primary school.

That was the context in which Aet went into the new school year and later carried out the Autumn intervention with her two classes. Aet had already experimented with more participatory forms of teaching before the lockdown. In previous years, students were asked to suggest materials that could be used for listening, reading, or grammar tasks. Also, she asked students to try out new pieces of software for their presentation or find and share sources to use when writing texts. The protraction of remote teaching and the plans that the school had in store constituted fertile ground for Aet. First of all, unlike in the past, she could now experiment with distance learning, which became an option only after the pandemic began. Besides, she felt that she could develop plans that would partly exploit the principle of “learning by teaching”, which would constitute, pedagogically speaking, a further development in comparison with what she used to do and would also be in line with the ongoing reorganization of the school. In other words, she was aware that her explorations would not be carried out in vain, as there was a clear intention at the institutional level to re-organize teaching and learning in the direction of blended learning and student-directed learning.

5.2. The “autumn” intervention

The Autumn intervention was carried out respectively with 2 groups of year 12 students and 1 group of year 10 students. The students worked in small groups to create a study aid on an area of English (grammar in one case and vocabulary in the other) that was then used by others studying the same topic. Students were free to choose the means and tools they considered best suited for understanding the material. They were given ‘the end product’ — what those using the study aid should know when they have gone through the material.

Both iterations followed the same pattern. Students were informed about the task during a webinar, which took place at the beginning of the intervention. In the first iteration, students were assorted in groups by the teacher, while in the second one they worked in pairs. The teacher also set a deadline for completing the job, collected the study aids designed by the students and sent them around to the students themselves. As we mentioned before, during the intervention the students had the chance to contact the teacher privately or during several webinars that the teacher pre-scheduled.

Students were asked to elaborate on their uncertainties at two specific checkpoints in written form: first, after the design task was explained and then after the task was completed. Additionally, students were asked to reflect on the whole process at the end of the intervention and to provide their answers in written form anonymously. While the students were given the choice of whether to answer in English or Estonian — their mother tongue, all the students who agreed to answer chose for the former.

5.2.1. First iteration

The first iteration of the intervention involved overall 24 students divided up into two cohorts of students, who were in their final year of higher secondary education (year 12).

The major uncertainty that they articulated concerned the study aid. Students were not sure about what was expected from them. One student admitted that they did not know where to start from. Another student wrote that he/she was not sure what the final outcome should look like as well as other formal elements such as the length and the level of details. The same student noted that the design task had “no boundaries” and that they “had to figure it out” for themselves. The same was echoed by another student, who wrote that the major uncertainty concerned the actual “form” that the task should have.

The quality of the study aid was also a major topic for the students. Several students reported that a major source of uncertainty was related to whether the study aid would actually be “useful” and “concise”. That is because, in one student’s words “if [the study aid] is too long, none will be able to remember it!”. Helpfulness was also another major uncertainty expressed by the students, especially in relation to their fellow students. As noted already, in the first iteration students in year 12 were supposed to design the study aid for students in year 11. The general topic of “quality of the material” created some doubts and uncertainty related to whether the study aid would actually be “understandable for everyone”. One student wrote that she/he is was not sure, about their fellow students’ actual language proficiency and therefore “how they [would] cope with the exercise we have provided them with”.

Another source of uncertainty concerned their actual grammar knowledge. Several students felt unsure whether they “knew enough” about the topic to produce a study aid for other fellow students. One student, for example, specifically wrote that she/he could not be sure how to formulate the study aid. That the creation of the study aid was not something straightforward was stressed by another student who stated that “it made me wonder how it would be possible to easily explain a complex subject to as many students as possible since this topic is hard for myself”. The same student candidly remarked that grammar was not his/her “strong point” and that made him/her wonder whether he/she would be able to distinguish between “necessary information and everything else”. That they may not provide their fellow students with the “most correct information” was also an uncertainty expressed.

After students created the study aid, they were asked again to articulate their uncertainties. Most students did not report any significant source of uncertainty. The uncertainties that were mentioned revolved around how the study aid would be received by their fellow students. Again, helpfulness was a major concern along with clarity and the possibility to interest them.

At the end of intervention students were asked to reflect on the process. The vast majority of them – 20 students out of 24 – reported that they would like to try a similar activity in the future. Those who were critical mentioned that the task was rather time consuming and that they would not do it “with every new theme”. One student mentioned that he/she would prefer to be “on the receiving end of the task”, stressing the challenging nature of the task.

When it comes to the change of role, some students remarked that it was enriching, and it did broaden their perspective. For example, one student wrote that they usually consume the material, but “this time we had a good chance to look at things from a different perspective”. Being more active also implied to take pride in the final outcome, as another student remarked: “the most complicated part of the task was to make sure that we have used enough materials and that the depth of the material was sufficient to understand the topic. All in all, I guess we managed to create a good study aid for other students and for us as well”. The change of perspective also made some students understand better what being a teacher may imply.
Let us now turn to the uncertainties articulated by the teacher. Aet’s reflections provide a counterpoint coming from the other end of the teacher-students relationship. The main uncertainty that Aet articulated concerned what the students eventually created. She was surprised that the study aids that the students designed turned out to be quite similar to the ones that she herself would make. Students chose to create slide shows, worksheets, provide links to different online exercises and a video explaining a concept. When asked what year 11 students thought of the study aids, they commented that if they had not been told year 12 students had created the materials, they would have thought these were coming from the teacher or some grammar-book. Aet wondered about the role of the school in making students think “in the box”. She also wondered about her own role in encouraging students in doing so.

In direct relation to that, Aet also wondered if holding interim discussions with each group would have helped students become more creative. It is worth noting that, initially, Aet decided not to interfere during the design phase, while remaining available to students. However, they did not take advantage of that possibility. Trying to understand the possible reasons behind that, Aet also wondered if students are willing to reflect on their work, which is particularly important when the learning activity and the communication happen in an online environment.

Interestingly, students did not report any uncertainty concerning online collaboration. Some students mentioned collaboration as something that supported them in facing their doubts and discussing opportunities. Only one group struggled with dividing up the responsibilities and they reported contribution issues. So, while there is no evidence of the contrary, Aet still wondered whether that reflected reality, as only one group out of eight reported issues related to division of work and communication.

5.2.2. Second iteration

The second iteration took place a few weeks after the first and involved, as mentioned, a different group of students. The 16 students who participated were all from year 10 and the class had formed only in September, which is also when Aet started teaching it. The task was adapted to the curricular needs of the class. The students had to evenly distribute the vocabulary list among themselves and form pairs who would work together. They had a week during their distance learning time to complete the assignment (dividing vocabulary items, forming pairs, creating a study aid and trying out at least four of their peers’ creations). This time, Aet in her introductory webinar with the students, explicitly mentioned that she wanted them to reconsider the ways in which they learn vocabulary, and therefore, she would expect something different from what students were used to.

Just like in the first iteration, the first major source of uncertainty concerned the nature of the task. As mentioned, Aet explicitly mentioned that students had to come up with something original. Elaborating on this, one student wondered what “original and innovative” means “in these days” hinting at the fact that it is not an easy thing to do. The teacher’s expectation was also an uncertainty that other students articulated, who pointed out that it was not easy “to find a new task type”. An element of competition also emerged in the words of one of the students, who observed that other students choosing a similar approach for their study aid might have compromised their chance of coming up with something original. Uncertainty regarding the task was also voiced by other students, who expressed their doubts about what was actually expected, which prompted them to “read the instructions multiple times to exactly understand what we had to do”.

The other source of uncertainty that was mentioned was related to online collaboration. Due to the restrictions imposed by the pandemic, students could not meet physically. Additionally, the class was formed only at the beginning of the school year. One student pointed out that the novelty of the task also concerned the fact that they had never worked in pairs online. This uncertainty was echoed by another student who explicitly mentioned that the nature of the task implied that students would “rely on each other and communicate very closely […]” when choosing the words for the task.

Uncertainties related to the quality of the study aid emerged only at the second check point, once they had finished the designing task. In their written answers some students wrote that they were not sure if what they had created was good enough. Also, they wondered what would come next.

In their final reflection, students expressed their appreciation for the intervention observing that it was something different from what they were used to, that is, “causal learning” and “just doing plain exercises”. They found it to be an “eye-opening” and a “fun task”. Also, a student observed that he/she actually learnt new words while completing the design task, explicitly referring to the fact that it was two tasks in one (“it is like a two in one task”).

Interestingly, in spite of the fact that as they started, a major source of uncertainty was online collaboration, several students pointed out that eventually, the intervention gave them the chance to socialize and enjoy collaboration. They could “motivate each other” and “try out new things” together. The intervention gave them “the excuse to talk to someone new” cementing the sense of belonging to the class.

Only one student had a critical remark. He/she suggested that there could have been more room for creativity, mentioning that everyone could have been given the entire vocabulary instead of a fixed number of words.

Students acknowledged that their role changed from being passive recipients of instruction to task creators. That meant, for example, to be more active in finding reliable sources on the Web via “googling” as well as get familiar with digital tools they had not previously used as creators such as Kahoot! Interestingly, in this group students stressed that the change of role made them revisit the relation with their peers. First of all, as creators, they realized the challenges that creating materials for others may involve. As one student reported, “it is not easy to do something interesting and different for students”. With that also came the appreciation for teacher’s work. Secondly, they also came to see collaboration in a new light stressing the importance of “good teamwork”. Here again, as one student put it “we had to really invest in it [teamwork] and couldn’t rely on a teacher, more on each other.”

As mentioned, in their final reflection the students unanimously expressed their appreciation for the task. Interestingly, one of Aet’s uncertainties that she reported in her reflection was whether the task was too easy. As she was not yet that familiar with the group, she wondered if the online format might have created an additional uncertainty concerned the nature of the task. Had the task been very easy, she thought it is not easy to do something interesting and now Aet is contemplating the possibility of increasing the complexity of similar tasks in the future.

Another source of uncertainty was related to the credibility of the task. It is important to mention that both iterations were not curricular activities. Students had to understand that the vocabulary would actually occur in a test. So, what made Aet wonder was whether the students would take the task seriously or not. Incidentally, this was still related to the complexity of the task. Had the task been very easy, she thought that the students would have treated it flippantly.

The last source of uncertainty is related to the enjoyable elements of the task. What Aet pointed out in her reflection was that some tasks might have created more enjoyment for the creators than to those learning from them. For example, googling different
types of exercises to do and picking something silly. This was briefly discussed also during a webinar that Aet had with the class after they had tried out their peers’ work. A student commented that after one or two people had tried particular assignments, word got round that those tasks were ‘pointless’ and most of the peers just skipped them afterwards. This led Aet to ponder the question of retaining enjoyable elements of the assignment, while at the same time getting students approach it earnestly.

6. Discussion: from expectations to generative uncertainty

The case study presented was supposed to shed light on the uncertainties brought about by the re-organization of teaching and learning activities in the form of an intervention conducted by a high school teacher and her students. The intervention was part of a strategic vision embraced by the whole school, which in the long term would help other teachers and students to move to forms of learning more dependent on students’ initiative and that would take advantage of the experience gained during the pandemic. In the case presented, the re-organization and consequent change concerned, first of all, the format, which was entirely online, and, secondly, the roles that students and their teacher enacted. One crucial element of which was that students were given the task to design a study aid to help their peers to study an actual curricular topic.

We defined uncertainty as the subjective experience of being in a situation or dealing with issues that are not yet determined or settled and that therefore are essentially open to different possibilities. Therefore, resolving the uncertain situation is something students and teacher take responsibility for. However, as we noted, uncertainty is characterized by a fundamental ambiguity: on the one hand, it is conducive to learning for students and professional development for teachers; on the other, it might eventually be experienced in ways that initiate and fuel various defensive mechanisms (Jordan, 2015). We posited that it is within the triadic relationship which students and teacher are entangled in that such ambiguity can be fruitfully considered.

6.1. Uncertainties regarding expectations

When we look at the sources of uncertainty that students articulated, we may argue that there is a fundamental tension between uncertainties that concerned expectations and those that can be viewed as productive or generative. We claim that the shift from one to the other depends precisely on the triadic relationship. And it is such a shift that potentially unlocks what we referred to as the generative nature of uncertainty. Let us see how.

In both iterations, some students expressed doubts concerning the nature of the task. That is, they were not sure of what they were expected to deliver to the teacher. This can be viewed as an instance of uncertainty that is not generative. The reason why we argue so is that we see that students expressed a type of uncertainty that still focused on what they thought the teacher would like to receive, rather than on what they might create. We may see this as expressive of the fact that students still felt somehow committed to responding to the teacher, even when the task was essentially open and neither students nor the teacher could know “the answer” beforehand.

As students and teacher are entangled in the triadic relationship, such a situation may force the teacher herself to face her own uncertainties. In a more traditional task, uncertainties related to teacher’s expectations can be more or less easily addressed by providing more support or additional instructions. That would cue the students towards the desired outcome.

6.2. Uncertainties regarding open-ended tasks

How about when the outcome is open and therefore a genuine source of uncertainty? In relation to this, Aet wondered if the online format of the intervention might have constituted a barrier for the students to come and talk to her. Also, she wondered if students had not yet developed the habit of reflecting on their work and seeing when they would need help. Such uncertainties suggest that she did not give up on her role as a supervisor – students still needed to respond to a supervisor – students still needed to respond to her, and she was responsible for them. However, when she expressed regret that students did not contact her, she also clarified that her role would be to point them to the open space and invite them to continue the exploration. The teacher seemed to see herself as a co-explorer rather than an instruction giver who already knows what the outcome should look like.

Some other students expressed other uncertainties that were chiefly related to the quality of the study aid and whether their work could be helpful for their fellow students. That was, we argue, a shift of perspective. Students turned their attention away from what (they thought) the teacher expected, to what they could do and create together with their peers. Additionally, by wondering whether their study aid could be helpful, students also acknowledged the change of perspective, as they realized that they had to do something that could really help their peers. We may argue that the generative nature of uncertainty refers to the fact that students had to confront a situation in which the outcome could not be anticipated in their minds nor in their teacher’s. That is, their uncertainty was genuinely expressive of the indeterminateness of the task itself. And as such it could unlock a greater educational potential, as it would demand to take responsibility for it.

The unlocking of such greater educational potential is even more visible in a further instance of generative uncertainty. We are referring to the case when some of the students from year 10 wrote that they were unsure whether the online format would help them collaborate. As mentioned, the class was formed in September. Here again, students dealt with a situation that could have only been faced for what it is – an open one - and which they inevitably had to take responsibility for. Eventually, as reported, the intervention helped them become familiar with each other and cement the sense of belonging to the class.

6.3. Generative uncertainty and the triadic relationship

As we mentioned, the generative nature of uncertainty can be identified in seeing the students turn their attention away from teachers’ expectations. However, at least in theory, that might also lead the students not to take the task seriously. Oftentimes the teacher may propose “alternative” activities as mere fillers to face downtime. Students may sense this, and their commitment, often fueled by extrinsic factors, may simply vanish. That did not materialize in our case, in which the activity was not a mere filler. However, Aet was not sure whether students would take it seriously. As reported, she kept the task relatively easy. Such risks are inevitable, and they also show that responsibility is shared upward, to go back to what Lucas argued. The teacher is responsible for the students. It is worth noting that in Aet case, the school did support her and as a result she was free to re-organize her teaching practice with the digital tools available. This lessened the burden for the teacher to be able to respond to the institution. However, being responsible for the students remains for the teacher an open task.

The same was visible in another instance, where the uncertainties concerned the use of educational technology. Aet remarked that the online format made her unsure whether the students from year 12 had the chance to express their doubts
during the design of the study aids. And, as just mentioned, she expressed doubts in relation to the complexity of the task for the year 10 students. In this instance, the uncertainty concerned the delicate job of providing and receiving feedback. This leads us to the conclusion that whether uncertainty can turn productive for the students crucially depends on how uncertainties are handled within the triadic relationship between students, on the one hand, and their teacher, on the other.

7. Conclusions

The main story line that we followed in this article is that the pandemic forced schools to re-organize due to the temporarily disorganization of the Macro level exemplified by the suspension of in-class activities, in consequence of which new options emerged in an expanding organizational space that we referred to as the Meso level. In our case study we documented how a secondary school teacher tried to take advantage of such a space to re-organize the teaching and learning activities with three groups of students. The re-organization took the concrete form of an intervention to be carried out as an actual part of distance learning in which the role of students and teacher changed.

The main conclusion that may draw from our case is that uncertainties are not to be treated as a problem to solve; they are inherent to a space — the Meso, which is potentially generative of what may ultimately lead to educational change.

When we turn our attention specifically to uncertainty itself, we see that it is characterized by a fundamental ambiguity. Uncertainty is ultimately related to open situations one takes responsibility for. However, taking such a responsibility does not occur in a social vacuum, but in a pre-existing relationship that entangles students with their teacher, which we defined as a triadic one, in which responsibility is then shared upwards.

With our case study we have tried to show how some uncertainties reflect a certain relationship of answerability (Lucas, 1996) - students responding to teacher, not the open situation. In this case uncertainty is not generative of the envisaged change, as the students themselves do not experience the situation at hand as open to their own contribution. We do not undermine or scorn such uncertainties. We claim that their emergence is precisely related to the fact that any open and creative task still happens in a socially dense network of interactions, which crucially involve expectations and their management and of which answerability is a pillar.

Uncertainty becomes generative, when, inversely, students take responsibility for the task at hand. This is when the uncertainties become the expression of a genuine creative tension, as they become attuned to the very task at hand, rather than what is allegedly expected from them. This is not the whole deal, though. Here is when the teacher may intervene and in doing so, she may expand or shrink such a generative space as a direct response to her own uncertainties. In our case the teacher expressed her uncertainties precisely in relation to how to support students explore the open space, rather than narrowing it down so as to achieve a certain outcome.

Interestingly, the teacher could focus on her students, because the broader context in which she operated permitted her to do so. The teacher’s initiative was not an isolate case, but part of a broader vision, towards which the school itself was and is still working. While this is the reason explaining the relevance of the case, we are aware that it is also a limitation, because we effectively could not report on the tension between teacher and school, which might have led to a different story.

A broader conclusion can be drawn in relation to the relevance of studying uncertainty in the specific context of this article. Our main aim was not to uncover patterns, which would then inform how to face uncertainty. That would contradict the spirit of the article. What we may argue is that in the end educational re-organization, and therefore change, is and remains the site where non-trivial decisions are eventually made. Such decisions cannot entirely be anticipated, but they are, on the contrary, the expression of a responsibility for what is ultimately a creative process inevitably open to the beautiful risk of education, as Biesta put it.

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Appendix A

The Autumn Intervention

Stage 1: Preparation

The teacher informs the students about the task to carry out in a webinar. Students are told to devise study tasks that would help students themselves learn a specific topic and that could be used in distance learning.

Task for Year 12 students. The instructions for the task of the first iteration are the following.

You are going to work on some grammar topics in a small group. The groups are assigned by the teacher. The aim of your group work is to create a study aid that helps learners to understand the nuances of an aspect of English grammar. The study aid must be reproducible — it should be usable unspecified times. Your group decides which means and tools are the best for creating a study aid on your topic.

The topics are as follows:
Group 1 — How to use correctly Future Perfect Simple and Continuous
Group 2 — Inversion: form and usage, typical mistakes and how to avoid them
Group 3 — How to use correctly Future Simple and Continuous
Group 4 — Passive (all tenses): form and usage, typical mistakes and how to avoid them

For the theoretical part, please take the attached material as the basis for your work

(4 documents for grammar references are attached to the task description)

Task for Year 10 students. Here is vocabulary on the topic of Success and a Quizlet link to go with it. Divide yourself into 8 pairs. Coordinate among your classmates to divide the vocabulary evenly between the groups and create a vocabulary revision activity for your pair’s set of words. Please do not use any of the task types that you have used in class (crossword, word search, Quizlet) but try to come up with something new and enjoyable. Upload your work result in the STREAM as a response to my Nov 30 post by the end of school day on Dec 4. Do not forget to answer the reflection questionnaires as you begin and finish your task.
Students are informed that the study tasks should be reproducible and designed specifically for distance learning. While the topic is decided by the teacher and related to the curriculum, the rest of the challenge is left unspecified.

Stage 2: Design

The Design stage will last for 1 week, during which the groups will have the chance to consult the teachers 4 times in Google Meet. The purpose of these meetings is not to give students answers, but to 1) keep track of their progress and 2) to encourage them to articulate their own uncertainties. The teacher keeps a diary where to note down students’ comments or questions regarding the task.

Reflection task for the students. Before beginning the task, students are asked to answer the following questions in written form:

- What kind of doubts are you experiencing?
- What makes you feel unsure about what is going to happen?

When having completed the task, the students are asked to answer in written form the following question:

- What kind of doubts are you experiencing?
- What makes you feel unsure about what is going to happen?

Stage 3: Integration

The main goal of the Integration Stage is to collect the study tasks devised by the groups in the previous stage and integrate them into the normal class activities. Students will be graded.

Stage 4: Evaluation

Questions for the students after the intervention is over.

- How would you describe your contribution to it?
- How do you know now that you did not know before?
- How did your role as a student change with this task?
- What kind of obstacles did you actually overcome?
- Would you like to try something similar in the future? Please, explain.

Appendix B

The teacher is asked to reflect on:

1. Students’ answers as the task began; Students’ answers to the questions after completing the task; Students’ answers once the activity was completed; Students’ feedback to the course.
2. Content and design of the study aids; the effectiveness of the study aid;
3. Students’ performance (grades)

And to elaborate on her own uncertainties related to the intervention.

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