
ONLINE COMMUNICATION AND ASSESSMENT PRACTICES DURING THE COVID PANDEMIC: A STUDY OF THE PORTUGUESE HIGHER EDUCATION STUDENTS' PERCEPTIONS

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Abstract

This proposal is part of an ongoing research and presents the results on the perceptions and pedagogical practices experienced by students from various higher education degrees in Portuguese higher education institutions, during the period of social confinement determined by the Portuguese Government, due to the COVID-19 pandemic. The main objective of the general research was to understand how Higher Education faculty and students experienced the digital transition to emergency education and the pedagogical practices adopted during the period. The research was based on a mixed methods approach and, in order to address the research objectives and describe the pedagogical practices implemented, specific instruments were developed for data collection. A questionnaire was developed, aimed at students, and interviews aimed at both students and faculty, focusing on technological and pedagogical dimensions, as well as the assessment of the experience. Data collection was carried out after the first lockdown, at the end of the first semester of 2020, and took place in eight higher education institutions. In this paper we will present a preliminary analysis of Questionnaire results related to two dimensions: online communication and assessment.

Introduction

Higher education institutions (HEI) have experienced, in the period of lockdown, new situations that involved the closure of physical campus spaces and a gigantic disruption, in the transition to online, on an unprecedented scale. In general, institutional responses were given with a rapid shift to emergency digital learning, in what Zimmerman (2020) classified as the “Great Online-Learning Experiment” and Wu (2020) defined as a test of organisational agility, which evidenced the resilience of the actors and educational organisations involved. In Portugal, although many HEI already have some experience and

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dedicated support structures (e-learning offices, distance learning units or support departments for educational technologies), the stages of implementation of strategies in this area are different. This has been shown in the latest annual initiative of institutions and elearning units – eLIES. Another relevant factor is the fact that Portugal lived without specific distance learning legislation until 2019, when was first published the regulation in this field – DL 133/2019. In the context of CoViD-19, all HEI made a move to online by adopting emergency solutions to keep courses running. Thousands of students went to classes online; thousands of teachers gave their lessons online (worldwide, 1.5 billion students were affected (UNESCO, 2020; UNICEF, 2020)). In this context, initiatives of experts, and of HEIs have also sprouted, creating online communities of practice and diverse support networks. Open educational resources (OER), open educational practices (OEP) and courses on-the-fly for formal and informal training have been developed and shared. Networks have been created to support teachers and the academic community in a way that no programme or policy initiative for digital inclusion or transition or funding for digital empowerment of teachers, to date, has been able to deliver (INCoDe.2030, or the Horizon Report forecasts, 2019). Crawford, Rudolph, Makawi, Glowatz, Burton, Magni, and Lam (2020) document, through a meta-analysis across 20 countries, the type and speed of responses given in higher education, namely at the time of first lockdown, where they focused mainly on moving content to the online environment without the provision of an appropriate pedagogy adapted for online. In this framework, it is therefore important to stress that we are dealing with what some, like Murphy (2020) call “emergency eLearning” or other, such as Hodges, Moore, Lockee, Trust, and Bond (2020), Emergency Remote Teaching (ERT): “a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. The primary objective in these circumstances is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis”. All this situation has brought distance education to the forefront, introducing inevitable comparisons. From the perspective of Bozkurt and Sharma (2020) the distinction made between ERT and distance education determines “the degree to which educators believe in distance education these days will play a significant role in the prosperity of distance education in a post-COVID world” (p.2). Beyond this aspect, it is important to know the pedagogical strategies implemented and the practices experienced, identifying for example the focus adopted in online communication – synchronous versus asynchronous –, what Lovink (2020) called “living in video space” with levels of digital fatigue (Wiederhold, 2020)

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or zoom fatigue (Sacasas, 2020), and high cognitive and work overload (Morris, 2020). Replicating the face-to-face pedagogy of the classroom, but with a “zoom pedagogy or zoom university” for teachers and students, plus also ongoing self-presentation efforts in the mediated communication (hyper-communication) (Whalter, 1996; Anderson, 2003; Whats, 2019). In this line, if some pedagogical practices developed tend to be teacher-centred, and not student-centred, as is usual in distance education (Bates, 2019), it was noted the need to look for practices that would contribute to focus the student’s attention in the teaching-learning processes, approaching this centrality of the educational process. Thus, with this study, we tried to get to know aspects of the students’ experiences which, being sometimes less valued in the normal scenario of face-to-face classes, are inseparable from the design of engaging, meaningful, participatory pedagogical scenarios. At the same time, we considered it important to study the often-widespread idea that the richness of communication is poorer in online environments than in face-to-face environments (Quintas-Mendes et al., 2009) including the assumption that the richness of emotional communication online is linked to the appropriateness of the strategies used (Derks, Fischer, & Bos, 2008; Paiva, Giger, Faisca, & Batista, 2011).

This paper is part of an ongoing general exploratory study (Paiva et al., 2020) that aims to understand students’ perceptions of their academic experiences during ERT and to analyse teachers’ and higher education students’ experiences during this digital transition, as well as to identify facilitating and blocking pedagogical strategies/practices through teachers’ and students’ narratives. Accordingly, this article presents part of the results obtained in the questionnaires regarding the perceptions of communication and evaluation practices.

Methodological Approach

The present study is of exploratory nature, justified by the current and pertinent topic, having as focus the experience of the rapid digital transition for an “emergency teaching”, which is a distinct scenario from distance education. A mixed nature methodology was used (Hesse-Biber, 2010), quantitative and qualitative, while the data collection was made by applying an online survey by questionnaire and a total of 40 interviews through video conference (Salmons, 2012; Archibald et al., 2019), to 20 teachers and 20 students. This study’s participants are students and teachers from 8 institutions of the Portuguese Higher Education Network, four are University Education Institutions (3 public and 1 private) and four are Polytechnic Institutes (3 public and 1 private) encompassing the Lisbon and Tagus Valley, Alentejo and Algarve regions (the centre and south of Portugal).

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Instrument: questionnaire

For the present research a questionnaire was made, specific for higher education students that have experienced a transition for remote teaching. The specific goals of the questionnaire were the following: (a) characterize the student's profile (demographic, digital, about ODL and online participation of academic activities); (b) identify the perceptions and practices about the synchronous and asynchronous communication situations experienced in the online activities; (c) identify feedback and assessment practices developed; (d) gather the interactive situations proposed on the curricular units, with contents, faculty and students; (e) analyse the cognitive, social and emotional adaptation processes to the online academic activities; (f) identify the communication strategies used in the online academic activities; (g) characterise emotional states associated with experiencing online activities; (h) assess the global evaluation of the academic experience lived during this period. The questionnaire consisted of 53 items, divided into 5 parts. In the first part, an informed consent form was included. The second part consisted of 10 closed and open questions (Q), aimed to ascertain data about the student's profile: sociodemographic and use of technology, previous experience in Distance Education and online participation practices in this period. On the third part, 6 closed questions were presented, asking the students to situate themselves in terms of attendance, using a Likert scale with 4 points to each item (from *Never* to *Very Frequently*). The aim was to know their perception about the experienced synchronous and asynchronous communication situations, as well as the assessment practices developed in the online learning activities. The fourth part incorporated 3 dimensions: interaction-contents, interaction-student-teacher, interaction-peers, divided into 13 statements, with the goal to gather data on their perceptions about the situations created in the curricular units, asking them to position themselves in a 5 points scale (from *Never* to *Very Frequently*). In the fifth part, the goal was to gather data on their perceptions about the used strategies for cognitive adaptation, social and emotional processes to the online academic activities. A scale comprising 20 items was used, where the participants reported their opinion on each item, in terms of agreement, i.e. from 1 (*Totally Disagree*) to 5 (*Completely Agree*). This scale was divided into 3 main dimensions: autoregulation and socio-cognitive strategies, emotional and relational communication strategies and emotions expression strategies.

Data Collection and Analysis

The instruments were approved by the Research Unit Ethics' Committee, and submitted to a previous validation, allowing the adjustment of its adequacy in relation to several characteristics. Data collection took place online, at the end of the second semester, between the end of May and July. Faculty and/or course coordinators were contacted and

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presented with information about the objectives, procedures, guaranteed data confidentiality and asked for their informed consent. As regards the statistical treatment and analysis, SPSS software was used.

Results

Online Communication Practices and Evaluation

Some of the data characterising the profile of the students who answered the questionnaire are briefly presented. In total, 482 students answered the questionnaire, 78.4% were female and 21.6% male, with the following age distribution: 34.8% between 17-20 years old; 48% between 21-30 years old, 7.8% between 31-40 years old and 7.2% between 41-50 years old. Other data characterising the profile of the students surveyed are: Previous experience of online distance learning (ODL): 52.7% of students stated that they had never had this experience. Of those 43.4% say they have had some contact with ODL, 13.6% have had it infrequently and 14% have had it rarely; Year of the course attended: the distribution of respondents is mostly (67%) in the first two years of the course and 18.7% in the third year.

Regarding Time spent online and types of activities, the answers to Q10 ("Per day, on average, how many hours were you doing online activities (synchronous and asynchronous)") show that a large part of the respondents (43.1%) were more than 6 hours on average per day doing online activities, while 34.9% were between 3 and 5 hours.

Table 1: Select the type of online activities you took part in during the curricular units

Types of online activities	Freq.	Perc.
Submission of assignments in platforms (Moodle, Teams, Google Meet, etc.)	435	90.2
Group work	427	88.6
Oral presentations	410	85.1
Individual work	356	73.9
Formative tests	280	58.1
Participation in Forum Discussions	198	41.1
Video recorded presentations	174	36.1
Online final exam	130	27
Projects	112	23.2
Self-assessments	94	19.5
Simulations	70	14.5
Games	32	6.6
Role Playing	23	4.8

The answers to Q11 ("Select the type of online activities you took part in during the curricular units") show that the most referred activities were the Submission of assignments in platforms (90.2%), Group work (88.6%) and Oral Presentations (85.1%).

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Regarding students' perceptions of synchronous online activities, Q12 assessed to what extent they were considered diverse, tiring, monotonous or stimulating (Table 2). Regarding the diversification of synchronous online activities, the highest scores were distributed between *Not Very Frequent* (39.6%) and *Frequent* (46.3%), with a marginally higher value in the latter case. As for the feeling of tiredness caused by synchronous online activities, the highest value was *Frequently* (38.4%), followed by *Very Frequently* (26.8%). With regard to the feeling of monotony caused by synchronous online activities, the highest values were distributed between *Less Frequently* (34.2%) and *Frequently* (30.9%). As regards how stimulating synchronous online activities were, 38% of the respondents considered it to be *Less Frequently* and 32.6% considered it to be *Frequently*. It should be highlighted that 20.3% considered that they were *Never stimulating*.

Table 2: Q12. During Emergency Teaching classes, online activities based on synchronous platforms were:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Diversified, because new strategies were developed online	4.4	39.6	46.3	9.8
Tiring, because they were mainly content transmission by the teacher	11.0	23.9	23.9	26.8
Monotonous, because they replicated face to face classes	17.2	34.2	30.9	17.6
Stimulating, because they made communication with the other students easier	20.3	38.0	32.6	9.1

Regarding the asynchronous activities (using the forums), Q13 assessed the extent to which participation in the discussion forums was used to create topics, answer the teacher, engage in discussions or report information about their assignments (Table 3). The respondents' answers show that they considered the use of the discussion forums to create topics *Less Frequently* (40.2%) and *Never* (33.2%), to answer the teacher *Frequently* (43.2%) and *Very Frequently* (23.9%), to engage in discussions *Less Frequently* (37.6%) and *Never* (28.4%) and to report information about their assignments *Frequent* (37.6%) and *Less Frequently* (26.8%).

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Table 3: I used the Forums mainly to:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Create topics and post my messages	33.2	40.2	22.0	4.6
Answer teacher requests	11.6	21.4	43.2	23.9
Engage in discussions	28.4	37.6	27.2	6.8
Report information about my assignments	17.8	26.8	37.6	17.8

In Q14 we wanted to assess the extent to which online forum-based activities were considered easy, difficult, richer and flexible by students (Table 4). The respondents' answers show that they considered the activities based on the use of discussion forums, easy as *Less Frequently* (33.6%) and *Frequently* (33.4%), difficult *Less Frequently* (42.7%) and *Never* (25.9%), richer *Frequently* (38.8%) and *Less Frequently* (34.2%) and flexible *Frequently* (37.1%) and *Less Frequently* (25.3%).

Table 4: Q14. During Emergency Teaching classes, online activities based on forums were:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Easy, because we already used the forums before	25.1	33.6	33.4	7.9
Difficult, because there was too much reading and writing due to other participants' contributions	25.9	42.7	23.9	7.5
Richer, because they enabled multimedia communication	14.9	34.2	38.8	12.0
Flexible, because each student manages his time	18	25.3	37.1	19.5

When questioned about the evaluation practices developed in the online activities by the teacher during this period (Q15, Q16, Q17), the respondents positioned themselves as follows (Table 5): 49.2% perceived continuous feedback *Frequently* and 17.2% *Very frequently*, which translates to a monitoring practice of *proximity*. Despite this, 4% of respondents considered it to be *Less Frequently*, and even 4.8% considered that it *Never* occurred. In the case of the productivity of the feedback given by the teacher, about half (48.5%) of the respondents consider it to have been *Frequently*, plus 13.3% who consider it to have been *Very Frequently* productive feedback. When asked about the customisation of the feedback given by the teacher, the answers were divided: 40.5% considered that it was *Frequently*, 35.7% considered it *Less Frequently* and 10% considered that there was *Never* any effort at customisation.

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Table 5: Q15. During Emergency Teaching classes, I felt that teacher feedback to online activities was:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Continuous	4.8	28.8	49.2	17.2
Productive	6.0	32.2	48.5	13.3
Customized	10.0	35.7	40.5	13.9
Creative	12.0	43.4	35.7	8.9

When asked about the feedback given by the teacher to the final assignments, i.e. at the end of the semester, the following results were registered (Table 6): the majority 47.9% considered it to be *Frequently*, as being continuous and productive, while 44.6% evaluated it as having been customised, although 40.7% of the respondents rated it Less Frequently as creative. However, this characteristic was perceived by 36.3 % as being a practice of teachers. If we consider the values of the item *Very Frequently* of any of these dimensions, we can conclude that the type of feedback given was in the positive range of the scale (*Frequently* and *Very Frequently*).

Table 6: Q16. During Emergency Teaching classes, I felt that teacher feedback to final assignments was:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Continuous	7.7	33.0	47.9	11.4
Productive	8.1	32.0	47.9	12.0
Customized	9.8	34.9	44.6	10.8
Creative	14.3	40.7	36.3	8.7

The question about assessment strategies developed (Q17) was answered as follows (Table 7). Most students consider that teachers have incorporated new assessment techniques, with 40.9% *Frequently* and 11.8% *Very Frequently*. Despite this positive trend, 31.3% perceived this practice by teachers as *Less Frequently*. The same trend is registered when 41.5% of the respondents' state that Enhanced strategies were *Frequently* applied through the use of technologies and media and 10.6% *Very Frequently*, although 36.5% respond that this practice was *Less Frequently* and 11.4% are peremptory opting for *Never*. On the other hand, 41.7% consider that these strategies have not changed since the beginning of the lessons, although 35.5% consider that they have changed *Less Frequently*. When asked to position themselves on whether assessment strategies have been adapted for online remote learning, the trends are more assertive in this respect: 45.4% *Frequently* and 24.9% *Very Frequently* clearly pointing to adaptation to the new scenario (70.3%).

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Table 7: Q17. During Emergency Teaching classes, the assessment strategies:

	1 – Never	2 – Less Frequently	3 – Frequently	4 – Very Frequently
Incorporated new evaluation techniques	16.0	31.3	40.9	11.8
Were enhanced by other technologies and media	11.4	36.5	41.5	10.6
Did not change since the beginning of classes	10.8	35.5	41.7	12.0
Were adapted to online remote teaching	7.7	22.0	45.4	24.9

Preliminary Discussion of Results

Types of online activities

The most commonly performed online activities seem to fit into the traditional pedagogical practices of face-to-face teaching, transposed to online. However, it should be noted that some of the activities that can benefit from the potential of online digital technologies and/or LMSs, or are exclusive to them, have high values, as is the case of *Formative tests* (58.1%) and *Participation in Forum Discussions* (41.1%). The value of 36.1%, regarding *Video Recorded Presentations*, shows that more than a third used this procedure, which increases flexibility, allowing students who could not be present in synchronous classes to view them afterwards. However, others such as *Self-Assessments* (19.5%) as well as activities of less typical pedagogies but which could have a good online support, such as *Simulations* (14.5%) or *Games* (6.6%), were less used. It is worth mentioning the value of the *online Final Exam*, which corresponded to 27%, evidencing that it was possible to transfer this assessment online, but only in a quarter of the cases.

Time spent online

The results show that almost 50% of the students spent more than 6 hours a day in online activities. Although it is not possible to disaggregate the results into synchronous and asynchronous hours, the analysis of the open answers and the interviews show that most of them are synchronous hours, corresponding to the direct transposition of face-to-face classes into a synchronous regime and that their perception is of a high workload (one of the points mentioned as less positive in the emergency remote learning experience in the answers was “Many hours at the computer”). Further analysis of the open answers and interviews will allow us to assess whether procedures to minimize phenomena such as zoom fatigue (Bates, 2020) were considered, although the results of the analysis of the answers to Q12 already point to a negative answer.

Synchronous online activities

Synchronous online activities seem to have had some degree of diversification, with the introduction of new online work strategies, given that the results that fall within the positive range of the scale (*Frequently* and *Very Frequently* 56.1%) are marginally higher than the negative range. Regarding fatigue due to the teacher's transmission of content, it seems evident that this was a common activity that will have typical zoom fatigue effects. The results that fall in the positive scale interval (*Frequently* and *Very Frequently* 65.2%) point to a higher frequency of the feeling of fatigue, i.e. about $\frac{2}{3}$ consider that the online activities caused fatigue due to being mainly transmission of content by the teacher. Regarding the feeling of monotony due to replication of face-to-face classes, the results do not show a clear trend. The results that fall within the positive range of the scale (*Frequently* and *Very Frequently* 48.5%) are only marginally lower than those that point to a lower frequency, regarding the feeling of monotony due to the activities being a replication of the face-to-face classes. Regarding stimulating effects, the results in the negative range of the scale (*Never* and *Less Frequently*, 58.3%) show that the potential of synchronous communication was not sufficiently valued, exploited or promoted in online activities. In short, synchronous online activities are perceived as tiring due to the transmission of contents by the teacher and, to a lesser extent, not very stimulating by allowing improved communication with other students. However, the feeling of monotony for replicating face-to-face classes, which would be expected to accompany the tiredness values, is less high than this one, which seems to indicate that replicating face-to-face classes was not necessarily monotonous, possibly due to the introduction of some diversification with new online work strategies.

Asynchronous online activities (Discussion Forums)

The answers regarding asynchronous online activities in discussion forums seem to indicate teacher-centred pedagogical practices, with the results on the use of the forum to answer the teacher's questions that fall within the positive range of the scale (*Frequently* and *Very Frequently* 67.1%) being higher. The results on the use of the forum to participate in discussions, which fall in the negative range (*Never* and *Less Frequently* 66.0%), point to an underutilization of online discussion forums, as a means of written and asynchronous communication, and of their specific affordances, for debate activities that allow developing critical and higher-order thinking (Garrison, 2017). As for the students' perceptions of this form of asynchronous communication, the results show that most of them had not found the forums easy because they had used them before (the answers falling in the negative range of the scale, *Never* and *Less Frequently*, make up 59%), in line with the fact that 52% had no previous experience with distance education. A clear trend

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shows that they did not find it difficult to use because there would not be much to read and write (the answers falling in the negative range of the scale, *Never* and *Less Frequently*, make up 68.6%). This figure seems to confirm the indications about the type of use of the forums which were noted earlier. On the other hand, There was some recognition of the advantages in terms of flexibility for the management of their learning time, since the answers in the positive range of the scale, *Frequently* and *Very Frequently*, make up 56.6%. Indirectly, it can be perceived that asynchronous activities did not have the same weight as synchronous activities. In other words, it seems that both institutionally and for teachers and students, classes are the synchronous sessions (online equivalents of face-to-face sessions), and asynchronous activities are the equivalent of homework or extra-class activities (data from student interviews clearly point in this direction). The triangulation of these data with the faculty interviews' data will enable us to ascertain how and with what objectives synchronous and asynchronous activities were carried out and if they followed specialized literature recommendations for their use (Watts, 2016), causing the effective students' perceptions.

Feedback and assessment practices

The results point towards the conclusion that online assessment in general activities was perceived by a 60% majority as having occurred continuously and productively, which indicates a very positive teaching practice. On the other hand, this aspect may also have been facilitated by the implementation of synchronous and asynchronous activities allowing for a feedback from the teacher expanded in time. The perception of the feedback received (Savividou, 2017) according to pedagogical, contextual and even relational aspects should be explored in greater depth, crossing with the data from the interviews of teachers and students. However, one of the aspects that stands out in these results is that the feedback occurred continuously and was productive (effective), thus pointing to a good pedagogical practice (Hattie & Timperley, 2007) and the teachers' choice of communication strategies focused on a general feedback and not so much on individualized feedback. These results can also be supported based on the types of assignments carried out and the majority choice of teachers to submit them on platforms (Moodle, Teams, Google Meet), focused on individual (73.9%) and group (88.6%) assignments and on the fact that automatic feedback strategies supported by digital platforms and tools were not used (only in Online Exams – 27%). On the other hand, the strategy of personalised feedback, although mentioned as having been a relevant practice, implies higher teacher workload but ensures the “perception of monitoring” and “being-there”. This data can be deepened with the teachers' and students' narratives.

Conclusions

The main conclusions of the study may be summarized as follows:

- Students perceived to be too much time online;
- Data about synchronous activities shows evidence of zoom fatigue effects due to being mainly transmission of content by the teacher and that the potential of synchronous communication was not sufficiently valued, exploited, or promoted by teachers (although there was some diversification of activities);
- Data about asynchronous activities (forums) shows some recognition of the advantages in terms of flexibility for the management of their learning time and no difficulty in having too much to read and write but also an underutilization of online discussion forums as a means of written and asynchronous communication, and of their specific affordances;
- Data about teacher feedback shows fair levels and quality of teacher feedback;
- Assessment strategies were also fairly adapted to online remote teaching.

Recommendations

We propose the following recommendations for similar future practices:

- Rethink synchronous sessions taking in account differences from face-to-face settings;
- Diversify activities exploring affordances of the new medium;
- Implement more asynchronous activities properly designed and not so teacher centred
- Improve teacher feedback (use more creativity);
- Enhance assessment strategies using other technologies and media.

The results presented here are only partial. We intend, with the case studies, through the narratives based on students' and teachers' perceptions, to contribute to discuss good practices, understanding what can be improved and avoided, in the construction of blended or distance learning scenarios, by reflecting on good pedagogical practices rebuilt in the post-pandemic transformation accelerated by the digital experience. There are some clear common trends, but others are less clear, pointing to possible differentiated practices, which only a more in-depth study, namely through the analysis of correlations with other variables, will clarify.

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