17 Reflection on digital language teaching, learning, and assessment in times of crisis: a view from Italy

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Abstract

This chapter is a reflective account of the author's experience as a teacher of English at the University of Pavia during the first wave of the SARS-CoV-2 pandemic. It considers the design and delivery of an English for architecture and construction engineering course as well as the assessment stage of a text analysis course. It proceeds by presenting and discussing the decisions implemented as a consequence of the crisis situation and reflects on principles of English language teaching, learning, and assessment in general and English for Specific Purposes (ESP) in particular. In doing so, it addresses the book project rationale as an opportunity to reflect on the adjustments made to various planning and design factors informing language education during the health crisis and thought to be generalisable to language teaching, learning, and assessment in the global digital world. It concludes with thoughts on what the future of digital language teaching, learning, and assessment could look like.

Keywords: COVID-19, online language teaching, assessment, ESP, target situation analysis, learner-centred approach.

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1. Introduction

The present chapter reports on the author's experience as a teacher of English of a course designed and delivered right in the middle of the first outbreak of SARS-CoV-2 (Spring term 2020), and as responsible for the assessment stage of a text analysis course taught prior to the pandemic crisis. The account is accompanied by reflections on general English language teaching principles (e.g. Ur, 2012) and ESP (e.g. Basturkmen, 2010, Gollin-Kies, Hall, & Moore, 2015, Hafner & Miller, 2019) and applied to the specific situation. In doing so, it addresses the book project rationale as an opportunity to reflect on the adjustments made to various planning and design factors informing language education during the pandemic and thought to be generalisable to language teaching, learning, and assessment in the global digital world.

The first experience is an English for architecture and construction engineering course, which was redesigned and delivered entirely through the internet during the lockdown of March-May 2020 in Italy. This means that the teacher first met her students through the online mode, and developed and maintained the virtual relationship up to and including the final examination stage. The second concerns the assessment at the end of a text analysis (English Language 2) course for undergraduate students of modern languages. While the English Language 2 classes took place before the pandemic crisis, the assessment procedures were carried out exclusively online. In what follows, all stages in course design are presented and discussed in the broader framework of ESP pedagogy and revisited in light of the changed situation. Assessment done on the English Language 2 – Text Analysis Course is then discussed.

2. ESP course design

2.1. Context

As usually done when planning and designing a Language for Specific Purposes (LSP) course, the first factor that is taken into account is the context, both in terms

of target situation analysis and needs analysis, i.e. analysis of learners' needs and of stakeholders (typically faculty from the disciplines and professionals from the industry, e.g. Gollin-Kies et al., 2015). English for Architecture and Construction Engineering is normally delivered for small groups of an average 10-15 students in their last year of a five-year degree programme inclusive of a master's in architecture and construction engineering. The course is elective and usually chosen by students who are close to graduating and therefore keen on improving their employability prospects. The course takes the form of a 32-hour lab divided into 18 hours of more frontal teaching and the remaining 14 hours of more practical activities, which, prior to the health crisis, were focused on developing writing skills and in particular on writing up the design project report in English.

Although attendance is not mandatory in the majority of the degree programmes in Italian state universities, participants who choose this course tend to have a higher attendance rate than average for a number of reasons: engineering students in general attend classes more regularly than in other degree programmes, they are used to lab sessions and value attendance more than in humanities courses, where attendance is perceived as superfluous and thus devalued unless it offers practical benefits, such as, for example, when it is associated with continuous assessment. As said, the English for Architecture and Construction Engineering Course is optional and placed in the last year of study, when students are about to finish their studies and therefore very close to entering the relevant professions. Instrumental motivation therefore is usually very high (cf. Ur, 2012) as well as satisfaction with the course learning objectives, as demonstrated by the steadily positive feedback given in students' questionnaires at the end of each course.

2.2. Course objective and intended learning outcomes

The overall course objective consists in developing the writing skills relative to the project description and report. These are learner genres students are exposed to during their five years of study and therefore are familiar with, at least in their own native language. Moreover, they are part of the design master's thesis and correspond to some of the written genres typical of the building professions,

i.e. the project descriptions for the portfolio and for the architecture project competition (Spector & Damron, 2017).

The development of writing skills builds on the auxiliary skills of vocabulary and grammar. Because the technical vocabulary of architecture and construction encompasses a large range of specialisations and related terms, the goal of the course was to develop awareness of the digital and printed resources that can be used to find the specialised vocabulary and phraseology needed. The expected learning outcomes therefore included acquisition of the basic lexicon of architecture complemented by awareness of the tools available to broaden the technical vocabulary. As far as mastery of grammar is concerned, the course similarly aimed at developing knowledge of some of the internet-based corpus tools that can be used for grammar checking and self-editing. Explicit grammar teaching was limited to specific areas deemed necessary following needs analysis, e.g. modified nominal structures, but avoiding excessive use of metalanguage (e.g. *noun + noun clusters* was used instead of *noun phrases*). Furthermore, the items chosen were never treated as exclusively grammatical, i.e. without separating lexis from grammar (e.g. modified noun phrases and technical vocabulary, use of prepositions of place expressing orientation in space).

As a by-product of genre mastery, students were expected to develop a more systematic understanding of the design process on the assumption that enculturation into the genres brings about enculturation into the disciplines, in this case the design disciplines, and helps develop membership into the community of practice – as stressed by many contributions in Gruber and Olman's (2019) collection on language and science, and in research on academic literacies by Nesi and Gardner (2012) and Schmied (2018), among others. The fact that exposure to the genres occurred in another language than the learners' native language reinforced the students' reflective process.

2.3. Evaluation and assessment

Assessment consisted in writing a design project report of one of the students' own projects that they were allowed to choose from any they had to design for

one of the disciplinary courses during their academic career (e.g. architectural composition, building technology). The report was evaluated for both its organisation (internal structure, genre conventions, and verbal-visual integration) and language accuracy. In particular, appropriateness of technical vocabulary and of the lexico-grammatical structures taught and practiced in class (e.g. noun modification) was assessed too. The report had to be sent to the teacher some days prior to the exam date and discussed orally on the date of the exam to address the teacher's questions and critiques.

3. Moving online: course redesign and implementation

As a result of the pandemic and the changed context, the course objectives and learning outcomes had to be revisited and the course redesigned accordingly. Additionally, new content could be created as well as new methods experimented with to replace traditional face-to-face teaching, learning, and assessment.

3.1. Target situation re-analysis

In the emergency of the lockdown, the University of Pavia left lecturers free to decide whether to record their classes on a talking presentation software such as PowerPoint and upload the entire course for asynchronous use by the students, or to deliver synchronous teaching sessions using a videoconferencing tool, according to the official schedule of the semester (instructions along these lines were issued by the rector of the university as early as 27th February 2020). After initial discussion of whether using Skype for Business could be a viable option, Google Meet was the tool resorted to, Google being the chosen provider of the university mailing system and thus including the videoconferencing tool for free. At the time, the number of institutional accounts on Zoom were not sufficient to cover all teachers and courses offered and exclusively reserved to graduation sessions across all university departments. This changed with the start of the new academic year and the courses delivered in the Fall of 2020, after the university decided to provide its teaching staff with a Zoom account for the online courses (see Conclusions).

Because of the small number of participants, the mainly practical nature of the course (a language lab in its vocation) and well-identified learning objectives, I decided that live streaming would be a more desirable choice than pre-recorded lessons. The decision was further based on the fact that even before the pandemic I had been using the Learning Management System (LMS) of the university, a customised version of Moodle called Kiro[2]. Kiro is a dynamic and interactive e-learning platform that offers features such as sharing documents and links to websites, posting news to participants, assigning and correcting homework, and more generally managing the whole course. This platform had been an integral part of my courses for a number of regular face-to-face teaching years supplemented by distance learning tools, but not exclusively replaced by them. However, before moving the course entirely online, I had not exploited Kiro to the full and actually used just a few of the many features available. For example, I had never trialled the various assessment options, which allow to put together and administer tests of various kinds with both open-ended and multiple-choice questions. In what follows I will discuss some of the features of the new course combing the enhanced use of the LMS and live classes on Google Meet in light of some of the values of good language teaching and learning, as, e.g. in participatory experience-centred approaches and collaborative language learning (Hafner & Miller, 2019; Larsen-Freeman, 2000, pp. 153-155).

3.2. Course objective and assessment revisited

The first consequence of going entirely digital was the breaking of physical barriers, more internationalisation, and a more naturalistic English as lingua franca context. Thanks to the course being online, colleagues who teach academic English at Aalto University, Finland could participate in the first meeting and in the final students' project presentations, thus taking part in a collaborative teaching project where English was spoken not just among L1 speakers of Italian, but also with speakers of different L1s, including English. This learning situation is closer to real life situations at the workplace,

2. https://idcd.unipv.it/kiro3/

a tendency that has been observed by reviews of ESP pedagogy (Hafner & Miller, 2019). Under normal conditions, such collaboration would have been much more costly and time-consuming for the visiting teachers, instead with staff virtual mobility it had less impact on the teachers' home duties, while, at the same time, it brought great benefit to students at the receiving institution for the reasons outlined above. Although the telecollaboration stemmed from an ongoing EU-funded research project on language and communication education for engineers[3], it was accelerated by the digital environment.

This collaborative teaching and international context allowed me to revisit the course learning objectives and led to the inclusion of oral presentation skills as an additional goal of the course. Evaluation was thus included in the final classes, when students' 10 minutes oral presentations were assessed. Students presented online by sharing their screens and using 3D animation software for architecture project renderings, thus engaging in the learning process more actively as in project-based learning (cf. Hafner & Miller, 2019). After each presentation, the teachers could comment and ask students questions. Marking criteria focused on the mastery of architectural discourse conventions and effectiveness of communication rather than strict oral proficiency. Also, continuous assessment was deemed the most appropriate form of evaluation at a time of crisis that challenges strictly normative views of testing and prefers formative assessment centred on scaffolding and "on a continuous feedback loop" (Gottlieb & Katz, 2020, p. 48). This had a double effect, on one hand it allowed to incorporate psychological factors more explicitly into the course, something that would not normally happen or, at most, would have been a concession without the intervening exceptional circumstances. On the other hand, it brought constructive feedback to the centre of the course.

3.3. Being social

As one way of tapping into psychological and affective factors affecting communication and language learning, teaching sessions were sometimes

3. https://www.thebadgeproject.eu/

opened with the feel wheel[4], a way to establish interpersonal connection as well as expose students to new general English vocabulary relevant to the emotional states caused by the pandemic crisis (as suggested in one of the trainings in which I participated, see 3.7 below).

The schedule was the same as the one originally agreed for the conventional classroom, with two classes taking up a four-hour morning slot, with a break around 11 am for students to make their own coffee. Sometimes the feel wheel was used when reconvening after the break just to make a smooth transition into the more technical content.

3.4. Enhanced feedback

Feedback is valued in LSP pedagogy as part of a broader student-centred philosophy of teaching and learning that tries to address very specific needs and motives for learning a language, where learning equals being capable of putting into practice. The digital environment augments the need to provide specific and constructive feedback, as a way to maintain social contact and preserve continuity in the learning process.

Detailed and timely feedback meant regular assignments and more careful calibration of workload on the part of the teacher, both in terms of what was feasible for students from one meeting to the next and reasonable correction time for the teacher. Because most of the feedback was written and uploaded on Kiro, it also required the teacher to think about the phrasing so as to make it simple, unambiguous, and useful all at once. The enhanced role of feedback (Gottlieb & Katz, 2020; White, 2017) has been an opportunity for intensive error analysis.

3.5. Collaborative project-based learning

All of the contents and methods created anew for this course were collected on the LMS and successfully employed to enhance teaching and learning.

4. https://imgur.com/gallery/tCWChf6

The most notable of these was the glossary collaboratively constructed by the students and the teacher. The model was initiated by the teacher, but students contributed to refining it and to overcoming some of the limitations of the e-learning platform affordances. The aim of the glossary was not to replicate the many monolingual or bilingual technical dictionaries already available for free consultation, but rather to give students a chance to contribute entries of their own choice that they would encounter during the course, and instead of providing a definition of the terms, complement them with examples taken from the different authentic sources included in the teaching material.

The glossary took the shape of a digital list of terms accompanied by a rich illustrative apparatus of examples showing the use of the terms in their natural context of occurrence, on the recognition that it is not the term as such, but the collocation and patterning that are difficult to learn for the L2 speaker. A drop-down menu of so called 'aliases' allowed for the inclusion of synonyms (e.g. *floor, storey, story*) and equivalent Italian terms. This kind of jointly constructed glossary had the advantage of reinforcing the learning process based on principles of redundancy in second language learning and acquisition (Larsen-Freeman, 2000) and learner autonomy and collaborative project-based learning in ESP (Hafner & Miller, 2019). By adding a lemma they encountered while reading or listening to authentic sources, students were deliberately choosing what was salient for them and reinforcing the acquisition of the item also by selecting the relevant examples. By adding the Italian equivalent term, they were then learning bilingual correspondences in the terminology. If the term chosen was already present in the list because another course participant had contributed it, then there was still room for adding new examples. The development of the glossary prompted metalinguistic reflection on polysemy, synonymy, and equivalence, when, for example, the same term in English corresponds to two different terms in Italian (e.g. *floor* meaning both 'piano' (*storey*) and 'pavimento' (*the surface of a room you walk on*), and on optimal ways of representing semantic and field relations between terms, e.g. when trying to group items belonging to the same field, e.g. *crenellation*, *portcullis*, *mullioned windows*, etc. as features of gothic (and neo-gothic) architecture; *profiles*, *joist*, and *installations* used when describing structures

and systems, etc. or ranging across sub-fields, e.g. *design development*, *bid*, *brief*, *component*.

3.6. Students' evaluations

Students' feedback at the end of the course was unanimously positive and pointed to the digital environment as a strength rather than a weakness of the course, as can be seen in the following two quotes from the questionnaires:

> "è stato molto interessante e mi ha permesso di implementare la mia conoscenza dell'inglese, in particolare legata alla professione che dovrò affrontare nel futuro (*It was very interesting and it allowed me to implement my knowledge of English, in particular as it is linked to my future profession*)".

> "nonostante sia un corso di inglese, si focalizza sugli aspetti architettonici ed ingegneristici, dando un valore aggiunto al corso ed aprendo la possibilità ad un mondo lavorativo oltre l'Italia. La collaborazione il 'BADGE PROJECT' è un buon metodo, in grado di porci obiettivi che magari si sarebbero trascurati (*Although it is an English course, it focuses on architecture and engineering features, giving added value to it and opening up possibilities of working abroad beyond Italy. The BADGE PROJECT collaboration is a good method that gives us objectives that would otherwise have been overlooked*)".

3.7. Teacher development

The next two considerations regard research-informed teaching and fast teacher development as an unexpected outcome of the shift online. In order to favour maximum accessibility, a mechanism was put in place to enable the videorecording of the entire course after obtaining permission from participants. This yielded a wealth of ethnographic data that would lend itself to thick qualitative descriptions of the whole course. A first output was a 10-minute video produced by the author (see supplementary materials), i.e. an edited version of the students' final

presentations with the teachers' evaluations to capture some of the learners' achievements as well as needs to inform the design of the next course.

Moreover, after opting for the synchronous delivery combined with the e-learning platform, I felt the need to get fast and reusable training on distance teaching. The crisis became an opportunity for teacher development in many areas, including innovation, which would not have otherwise occurred. Because locally no real internal training had been offered besides assistance with the technical features of the LMS, I looked out for possibilities, as offered for example, by other universities, notably the Graduate Program in Applied Linguistics and Language Studies (Linguística Aplicada e Estudos da Linguagem, LAEL) webinar series of the Pontifical Catholic University of Sao Paulo, Brazil[5], and by materials publishers, e.g. National Geographic Learning of Eli Publishing, the latter specifically dealing with online English language learning (see Shin & Borup, 2020). Although not directly concerned with online teaching, the LAEL webinars allowed me to participate in the audience and learn how to use the interactive affordances of the videoconferencing tools on the students' side (especially the chat and the Q&A). The many opportunities for professional development had now become easily accessible and worthwhile and put the teacher in contact with a global community of practitioners sharing similar needs and experiences.

4. Moving online: re-examining assessment

The other experience I will briefly discuss is assessment at the end of a course for undergraduate students of modern languages. The course, the compulsory second year of a three-year program for students majoring in English and one or two other languages (among French, German, Russian, Spanish), depending on the individual curriculum, had been delivered in the first semester before the COVID-19 outbreak through traditional face-to-face teaching. However, because of the changed situation in June, the final assessment had to be done remotely. The exam usually consisted of a reading comprehension and text

5. http://corpuslg.org/lael_english/

analysis followed by the oral examination on the course contents, titled 'Making sense of text'. Despite the initial pressure from the Department of Humanities to avoid written tests altogether, for my course this represented a unique opportunity to learn to use Kiro's testing options. I therefore tried to maintain the same test format as in the paper-based version, i.e. a text with comprehension and analytical-descriptive questions, and experimented with test items design as allowed by Kiro, particularly, short guided open-ended questions, multiple-choice, gap-fills, and longer open questions inviting for more writing.

Turning the written test into a computer-based one involved rethinking not so much the test format as the connection between test items and course syllabus, carefully choosing from the syllabus items and balancing them in the written test as a guarantee of test validity (see Gollin-Kies et al., 2015). This was facilitated by the affordances of the digital platform in which each question had to be labelled with a tag corresponding to each content item in the syllabus. This brought about a deep evaluation of the syllabus as well as systematic analysis of each test item individually (*what is item x testing?*) and in relation to the overall test (*how does item x fit the whole test?*). The digital format allowed storing the items easily into a reusable database and even though the questions are text-based, one can draw from the database to put together different tests based on the same reading text to be used in successive testing sessions or for formative assessment. The digital test was then trialled as a mock exam to help students familiarise with it and to receive feedback on the practical limitations or difficulties linked to the format (e.g. time needed to scroll up and down the screen to go back to the text after reading each question). It also helped clarify the phrasing of the instructions and prompts, which I could then streamline in my preparations of the test for the final exam.

The test was administered using an improved Kiro platform called KiroTesting[6], which allows for timed tests, combined with a Safe Exam Browser software, impeding internet navigation throughout the duration of the test, and a Zoom videocall for the teacher to be able to actually see the students while taking the

6. https://kirotesting.unipv.it

test. The time-consuming part, especially for the first testing session in June, was the rollcall, which was meant to check the students' set up and video framing on Zoom. For this first testing session, I could count on the IT assistant, who was connected to the videocall and had access to KiroTesting. The session went smoothly: only three out of 52 examinees experienced issues with the testing platform or the internet connection and were allowed to retake the test the following day. The overall students' performance was good and the pass rate comparable to that of the paper-based test the year before. When informally asked to give feedback on what it had been like to take the test remotely, some students said they enjoyed taking the test from home in a familiar environment and not having to commute to Pavia just for the exam. Others said they preferred the pen and paper version. The test experience would deserve a more systematic evaluation of the students' perceptions. Should the digital format be maintained, it will be done as a step forward in the research on online language assessment. From the teacher perspective, the digital administering proved convenient and timesaving to the extent that it did not involve deciphering the students' handwriting. However, marking was not too efficient and rather time-consuming because the nature of the test items, all open-ended (see supplementary materials), made it impossible to check answers automatically.

5. Conclusions

In all, the unforeseen movement toward digital language teaching and learning seems to have brought about new pedagogical possibilities that build on and boost already existing good educational practices (e.g. enhanced feedback, collaborative work, task-based learning, additional learning objectives, assessment). Sudden and dramatic changes such as those brought about by the pandemic reshaped the teaching context by turning what were local limitations and constraints into a global space without borders and with enhanced means that allowed for new forms of collaborative work. Break-down of physical barriers and reduced means limitations meant improved accessibility, a positive change that could be sustained. A blended paradigm that combines in-presence contact with the students and more practical and collaborative learning activities online seems to

be the scenario of the future, where learner's centredness and empowerment are at the heart of successful language learning. Blended learning is versatile and can offer learners more opportunities for social interaction through the tools of digital communication (e.g. the chat), more autonomy (e.g. the web searches), and additional advantages such as promoting real life language use.

At the time of writing this, I have just completed the English Language 2 Course redesigned and delivered fully online as in Fall 2020 Pavia and the whole Milan region are entering a second lockdown. The university has now acquired Zoom licenses for all its staff, has developed how-to-teach-with-zoom guidebooks through the Information Technology (IT) department, and is requesting lecturers to teach live, record the entire course and save it on a Google Drive shared folder and make both the livestream and the recordings accessible through links on the local e-learning platform Kiro. This has raised controversy over unsolved copyright issues. At the same time, I have revisited the syllabus, more carefully planning the sequencing and grading of contents, experimenting with interactive tools such as break-out rooms with the students, and reusing KiroTesting for formative assessment during the course. What has been achieved has a lot of potential for dynamic innovation (Grgurovic, 2017), but the teachers need more training to fully embrace the digital paradigm and exploit its pedagogical possibilities to the full. What we, as language practitioners need in the future is more opportunities for teacher development, from more technological and pedagogical training to more international exchange on teaching practices to take the conversation beyond the local and toward the global. I believe this project is one such opportunity.

6. Supplementary materials

Ten-minute video: https://drive.google.com/file/d/1gP9Y8mPg6SydUtF1hXIX8c8CASDMDArv

Text analysis test items: https://docs.google.com/document/d/1kcZx7v18Y3JDk1JZpzAU65Hsrd3uLZg8d9n0UTZu16g

References

Basturkmen, H. (2010). *Developing courses in English for specific purposes*. Palgrave.

Gollin-Kies, S., Hall, D. R., & Moore, S. H. (2015). *Language for specific purposes*. Palgrave.

Gottlieb, M., & Katz, A. (2020). Assessment in the classroom. In C. A. Chapelle (Ed.), *The concise encyclopaedia of applied linguistics* (pp. 44-52). Wiley Blackwell.

Grgurovic, M. (2017). Blended language learning: research and practice. In C. A. Chapelle & S. Sauro (Eds), *The handbook of technology and second language teaching and learning* (pp. 149-168). Wiley Blackwell. https://doi.org/10.1002/9781118914069.ch11

Gruber, D. R., & Olman, L. (2019). (Eds). *The Routledge handbook of language and science*. Routledge.

Hafner, C. A., & Miller, L. (2019). *English in the disciplines. A multidimensional model for ESP course design.* Routledge.

Larsen-Freeman, D. (2000). *Techniques and principles in language teaching* (2nd ed.). Oxford University Press.

Nesi, H., & Gardner, S. (2012). *Genres across the disciplines: student writing in higher education*. Cambridge University Press. https://doi.org/10.1017/9781009030199

Schmied, J. (2018). A global view on writing research articles for international journals: principles and practices. In J. Schmied, M. Hofmann & A. Esimaje (Eds), *Academic writing in Africa: the journal article*. *REAL 15* (pp. 1-18). Cuvillier.

Shin, J. K., & Borup, J. (2020). Global webinars for English teachers worldwide during a pandemic: "they came right when I needed them the most". In R. E. Ferdig, E. Baumgartner, R. Hartshorne, R. Kaplan-Rakowski & C. Mouza (Eds), *Teaching, technology, and teacher education during the COVID-19 pandemic: stories from the field* (pp. 157-162). Association for the Advancement of Computing in Education.

Spector, T., & Damron, R. (2017). *How architects write* (2nd ed.). Routledge.

Ur, P. (2012). *A course in English language teaching* (2nd ed.). Cambridge University Press.

White, C. (2017). Distance language teaching with technology. In C. A. Chapelle & S. Sauro (Eds), *The handbook of technology and second language teaching and learning* (pp. 134-148). Wiley Blackwell. https://doi.org/10.1002/9781118914069.ch10

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