# 4 Revisiting the cloud: reintegrating the G Suite for Education in English for Specific Purposes teaching

**Elis Kakoulli Constantinou**[1]

## Abstract

In an era of continuous technological advancement and severe financial crisis, the cloud computing paradigm has become one of the most prominent and influential developments in information technology since the emergence of the Internet. This chapter describes the second phase of an action research study, which aimed at addressing the problem of lack of appropriate technology tools for the delivery of two blended English for Academic Purposes (EAP) courses for first-year students of the Departments of (1) Agricultural Sciences, Biotechnology, and Food Science and (2) Commerce, Finance, and Shipping, at the Cyprus University of Technology. The solution suggested involved the integration of the G Suite for Education[2] in the teaching and learning process. The suite was firstly introduced in the academic year 2016-2017 (Kakoulli Constantinou, 2018), and the feedback obtained then was valuable for its reintegration the following year. The present chapter focusses on the second attempt to integrate the suite in the context of which data was elicited in order to improve the use of the suite for the delivery of the two EAP courses in the future.

**Keywords: cloud technologies, blended teaching, English for specific purposes, G Suite for Education.**

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2. https://eduproducts.withgoogle.com/products/g-suite/g-suite-for-education

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## 1. Introduction

The utilisation of cloud computing services for educational purposes has started to encroach upon local 'hosting and operating resources', such as the ones offered at a school or a university network, due to the countless merits cloud computing encompasses (Khmelevsky & Voytenko, 2010, p. 1). There is an increasing number of educational institutions which opt for cloud computing services for several reasons that relate to the practical and economic advantages of this type of technology, but also because of its benefits for learning.

There are several definitions of cloud computing in the literature. Sultan (2010) describes it as "clusters of distributed computers (largely vast data centres and server farms) which provide on-demand resources and services over a networked medium (usually the Internet)" (p. 110). Cloud computing refers to both the applications/software offered on the Internet as well as the hardware and all the programming that occurs for these services to be provided. Such services provide easy access to different applications, which enable users to store, share, maintain, and generally manage material and communicate online from anywhere, using almost any device.

The present chapter concentrates on the use of the G Suite for Education in English for Specific Purposes (ESP). It reports on the second phase of an action research study conducted at the Cyprus University of Technology. The sections which follow provide a brief review on literature on cloud computing, information on the research context, and the results of the second attempt of the integration of the G Suite for Education in two ESP courses.

### 1.1. Using cloud computing services for educational purposes

According to Mell and Grance (2011), cloud computing is composed of five essential characteristics: (1) *on-demand self-service*, which refers to the ability of each user to manage computing services automatically; (2) *broad network access* that relates to the fact that services can be accessed from any place using

any device (e.g. mobile phones, tablets, laptops, and workstations) as long as there is a reliable internet connection; (3) *resource pooling*, which involves resources that include storage, processing, memory, and network bandwidth being available at all times; (4) *rapid elasticity* due to which services are made automatically available to consumers, unlimited at any time; and (5) *measured service*, which concerns the ability of both the provider and the user to measure, monitor, and control the resources utilised.

Furthermore, apart from all these affordances that indirectly support the teaching and learning process, there is evidence in the literature that cloud computing contributes both directly and indirectly to the learning process (Arpaci, 2017; González-Martínez, Bote-Lorenzo, Gómez-Sánchez, & Cano-Parra, 2015). All of the above characteristics, in combination with other affordances of cloud computing, such as its cost effectiveness, ease of use, and high scalability, have made cloud computing one of the most prevailing technologies or 'key trends' in the technology-enhanced learning domain (Ercan, 2010; Lakshminarayanan, Kumar, & Raju, 2013; Sultan, 2010).

Notwithstanding all its advantages, cloud computing involves certain challenges and dangers, mostly related to issues of privacy and security (Dillon, Wu, & Chang, 2010; González-Martínez et al., 2015). The interest in such issues has started becoming more intense during the last year, especially with the introduction of the data protection and online privacy rules which apply to both companies and organisations (public and private) inside and outside the European Union[3]. These newly established regulations will hopefully reinforce security and data protection, minimising the concerns expressed by skeptics.

### 1.2. ESP and the G Suite for Education

ESP is a "broad and diverse field of English language teaching" that refers to "language programmes designed for groups or individuals who are learning

3. https://europa.eu/youreurope/citizens/consumers/internet-telecoms/data-protection-online-privacy/index_en.htm

with an identifiable purpose and clearly specified needs" (Johnson & Johnson, 1998, p. 105). In other words, as its name denotes, ESP relates to the study of English usually associated with a particular field of study or a particular profession, for example English for Business, English for Hotel and Tourism Management, etc. As in every language learning context, ESP learners need to be exposed to as much authentic English that relates to their field of study as possible, since authenticity enhances learners' motivation, promotes learner autonomy, and immerses the learners in real world language communication (Shuang, 2014).

With all its qualities and affordances, cloud computing could be one of the best tools to be integrated in an ESP class. The G Suite for Education is one of the most popular cloud-based productivity suites offered by Google, which includes Mail, Drive, Classroom, Docs, Sheets, Slides, Sites, Calendar, and other applications used by 70 million students and teachers (Fenton, 2017). The features and applications of the G Suite are praised by many researchers who stress the value of integrating the G Suite for Education in teaching and learning, elaborating on its ease of use and focussing on its affordances for collaboration, dissemination of material and information, organisation, and limitless storage (Florell, 2017; Herrick, 2009; Lindh, Nolin, & Hedvall, 2016; McCloud & Marinello, 2014). The suite can extend learning beyond the walls of the classroom and give the learners the opportunity to be exposed to real language use, which is fundamental not only in ESP in particular, but in language learning in general.

### 1.3. The context of the research

In fall 2016, the researcher, who was also the course facilitator, integrated the G Suite for Education in her teaching of two blended EAP courses at the Cyprus University of Technology, one for the Department of Commerce, Finance, and Shipping and another for the Department of Agricultural Sciences, Biotechnology, and Food Science. The suite was integrated in the courses as a solution to the problem of the lack of appropriate tools which ensure classroom management, saving, organising, and sharing material online and

also allow for online collaboration and interaction between learners (Kakoulli Constantinou, 2018)

Both courses were at a B1-B2 level of the Common European Framework of Reference (CEFR) for languages, and in both cases language competence was acquired through the use of text types, scenarios, and roles which promoted the production and understanding of spoken and written language related to the topics covered. The courses were based on social constructivist theories, some elements of connectivism, and student-centred teaching methods. The G Suite applications that were utilised for the delivery of the courses were Google Classroom with all its features, serving as a platform for the course, and Google Drive with Google Docs, Google Slides, etc. for the creation (individual and collaborative), storage, and sharing of material. Furthermore, Google search was used in order to find information and materials on specific topics, and Gmail was employed for communication purposes. Finally, a closed Facebook group was created for each course for posting announcements, sharing material outside classes, commenting on different topics, and communicating with each other.

## 2. Method

Being an action research study, the study evolved in a spiral process of continuous improvement; the study commenced with the identification of a specific problem, that is the lack of efficient technology tools for classroom management and other educational processes, it proceeded with the provision of a solution through the integration of the G Suite in the two courses (fall 2016-2017), followed by reflection, refinement and repetition of the whole process the following year (fall 2017-2018). The present chapter reports on the results of the second cycle of the research study (fall 2017-2018).

### 2.1. Tools

Apart from the students' comments and the course facilitator's field notes kept during the courses, an online questionnaire, created using Google Forms, was

administered to the students for purposes of reflection after the completion of the courses. The questionnaire consisted of 15 Likert-scale and open-ended questions. It was the same as the one used in Cycle 1 of the research study, and it aimed at obtaining data related to (1) the learners' profile, (2) the learners' perceptions on the G Suite for Education's ease of use, (3) the learners' perceptions on the efficiency of the G Suite for Education, and (4) general comments regarding the integration of the suite in the two courses.

The qualitative data obtained was analysed using thematic analysis, and quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) version 22, and descriptive statistics were used to report on the results.

## 2.2. Participants

The sample was comprised of 65 first year students: 33 from the Department of Agricultural Sciences, Biotechnology, and Food Science, and 32 from Commerce, Finance, and Shipping. All participants had common linguistic backgrounds with Greek being their native language. Table 1 describes the profiles of the participants in the study.

Table 1. The participants

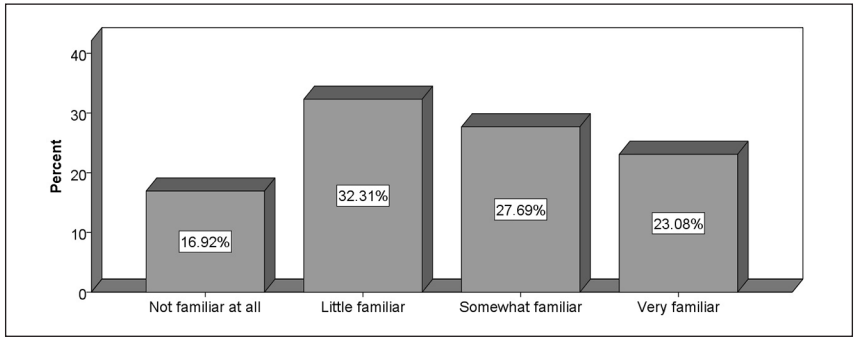
| | N=65 | % |
|---|---|---|
| **Departments** | | |
| • Agricultural Sciences, Biotechnology, and Food Science | 33 | 50.8 |
| • Commerce, Finance, and Shipping | 32 | 49.2 |
| **Sex** | | |
| • Female | 32 | 49.2 |
| • Male | 33 | 50.8 |
| **Age** | | |
| • 17-20 | 59 | 90.8 |
| • 21-24 | 5 | 7.7 |
| • 25-30 | 1 | 1.5 |
| **Origin** | | |
| • Cypriot | 63 | 96.9 |
| • Greek | 2 | 3.1 |

## 3. Results and discussion

### 3.1. The participants' profile

At the beginning of the courses, in order for the researcher to have a comprehensive view of the profile of the participants, students were asked to state whether they were familiar with Google applications; their comments revealed that some students were not familiar with some applications, therefore the researcher ensured that they received the appropriate guidance they needed to be able to use the tools while the course was taking place. The results of Cycle 1 of the research study (Kakoulli Constantinou, 2018) had also indicated specific aspects of the course that the facilitator needed to pay closer attention to in the second integration of the suite in her courses (Cycle 2). Moreover, a question regarding students' level of familiarity with Google applications when they started the course was also included in the questionnaire, and the responses reinforced the initial findings. As illustrated in Figure 1, responses to this question ranged from not familiar at all (16.92%) to very familiar (23.08%), with the majority stating that they had little familiarity with Google applications (83.08%); this indicated that some of the students could have found the use of the suite more challenging than the rest (probably the ones who were not familiar with the applications at all, and the ones who were little familiar with the applications, 49.23%).

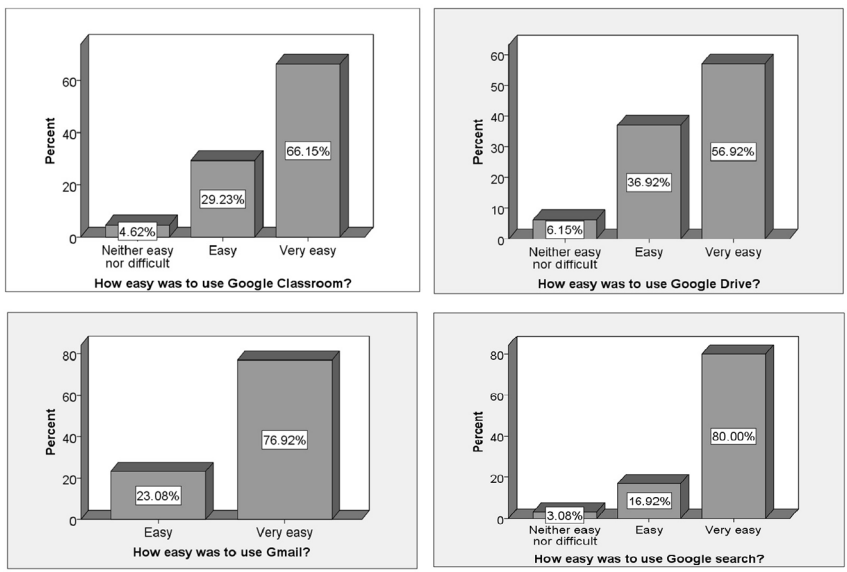
Figure 1. Students' familiarity with Google applications



### 3.2. G Suite for Education ease of use

Regarding learners' perceptions on the G Suite for Education's ease of use, students were requested to describe the use of Google Classroom, Google Drive, Gmail, and Google search, which were the main Google applications utilised for the delivery of the course. Students' comments during the course as well as the facilitator's field notes revealed that generally both students and the facilitator considered the suite as easy to use, facing only minor challenges during its use. Students' questionnaire responses, displayed in Figure 2, confirm this. Generally, students regarded the tools as easy to use, with Google search and Gmail being regarded as the easiest, probably because these are tools that students in Cyprus often use in their everyday life. It is interesting to note that none of the students responded that they considered the tools to be difficult to use, a fact that confirms Herrick's (2009) and Fenton's (2017) claim that simplicity is among the virtues of the suite.

Figure 2. G Suite for Education's ease of use



### 3.3. Challenges faced

Students were also asked to comment on the elements that they found challenging. The vast majority stated that they did not face any challenges with using the tools. The challenges that were reported by the students were the following:

> "I never used Google Classroom and Google Drive before, and I had to learn how to use them. One difficulty that I encountered was that I couldn't click on a button to save something on Google Drive, so sometimes I was afraid to close the window despite that I knew that my work would be saved without clicking on it" (EAP for Agricultural Sciences, Biotechnology, and Food Science student).

> "I just needed some time to get familiar with Google Classroom but after using it a couple of times I got used to it" (EAP for Agricultural Sciences, Biotechnology, and Food Science student).

> "Not being familiar with Google Drive" (EAP for Commerce, Finance, and Shipping student).

The fact that students did not encounter serious challenges with the use of the suite implies that the changes that the facilitator had introduced with the refinement of the courses (more guidance with the use of the tools, both face-to-face and also by means of written instructions uploaded on the Google Classroom platform) were effective.

### 3.4. G Suite for Education efficiency

Concerning the learners' perceptions on the efficiency of the G Suite for Education, results showed that in general all the tools used in the courses were regarded as efficient for their delivery. Students' questionnaire responses are presented in Table 2. Google Classroom was regarded as a very effective tool for various purposes, as listed in Table 2; however, it was considered as less efficient for commenting on different topics and seeing different announcements

about the course. This was perhaps due to the fact that students were more active on the Facebook closed group that the facilitator had created for the course that they were attending. The present study did not examine the use of the Facebook closed group; nonetheless, a study conducted by Veira, Leacock, and Warrican (2014) showed that students seem to prefer using a Facebook wall for discussion and interaction over a Google group, most probably because today's students are regarded as 'digital natives' who are more familiar with the use of social media. Consequently, students' preference for social media could explain why a small percentage of students characterised Google Classroom as poor for commenting or posting announcements for the course.

Table 2. The efficiency of G Suite for Education tools

| | Very poor % | Poor % | Acceptable % | Good % | Very good % |
|---|---|---|---|---|---|
| **How good is Google Classroom for…** | | | | | |
| serving as an online platform for the course? | - | - | 3.1 | 35.4 | 61.5 |
| keeping you informed about the topics and learning outcomes for each session every week? | - | - | 10.8 | 27.7 | 61.5 |
| providing you with material for the course (documents, videos, links, course outline, etc.)? | - | - | 3.1 | 44.6 | 52.3 |
| providing you with information about the instructor? | - | - | 7.7 | 44.6 | 47.7 |
| giving you instructions for each task? | - | - | 4.6 | 46.2 | 49.2 |
| uploading assignments? | - | 1.5 | 7.7 | 26.2 | 64.6 |
| viewing your grades? | - | - | 9.2 | 29.2 | 61.5 |
| commenting on different topics? | - | 1.5 | 6.2 | 36.9 | 55.4 |
| seeing different announcements about the course? | 1.5 | 1.5 | 7.7 | 35.4 | 53.8 |
| creating a feeling of belonging to a community? | - | - | 13.8 | 29.2 | 56.9 |
| **How good is Google Drive (including Docs, Slides, etc.) for…** | | | | | |
| writing notes/answers to tasks for each class? | - | - | 13.8 | 35.4 | 50.8 |
| creating assignments? | - | - | 10.8 | 40 | 49.2 |

| | | | | | |
|---|---|---|---|---|---|
| organising your files and keeping records of classes/storing files? | - | 3.1 | 7.7 | 29.3 | 60 |
| collaborating with classmates? | - | 3.1 | 10.8 | 38.5 | 47.7 |
| sharing material? | - | 3.1 | 1.5 | 33.8 | 61.5 |
| **How good is Gmail for…** | | | | | |
| communicating with the instructor? | - | - | 9.2 | 26.2 | 64.6 |
| communicating with classmates? | - | 1.5 | 10.9 | 29.2 | 58.5 |
| receiving feedback on the assignments? | - | - | 6.2 | 30.8 | 63.1 |
| **How good is Google search for…** | | | | | |
| finding information on different topics? | - | - | 4.6 | 30.8 | 64.6 |
| explaining unknown vocabulary? | - | 1.5 | 9.2 | 33.8 | 55.4 |

### 3.5. G Suite for Education experience in general

As regards the general evaluation of the whole experience using the Suite, students' comments during the two courses, the facilitator's field notes, and their questionnaire responses revealed that students were satisfied with the whole experience. Figure 3 presents students' satisfaction with the whole G Suite experience, as expressed in their questionnaire responses. Their responses regarding the support that they received from the course facilitator were similar (Figure 4).

Some of the elements of the two EAP courses that were regarded as the most enjoyable by the students were the following:

- sharing work and collaborating with classmates;
- communicating through the platform (Google Classroom);
- working on assignments and group projects;
- watching the video clips that were uploaded on Google Classroom;
- working online;
- working on Google Classroom;
- using a PC during the lesson;

- cooperating with the course facilitator;
- using online dictionaries;
- using Google Drive and having everything stored on the cloud;
- using Gmail and Google search;
- the fact that the course was organised; and
- the hybrid use of digital and live teaching.

Figure 3. Evaluation of the experience using the G Suite for Education

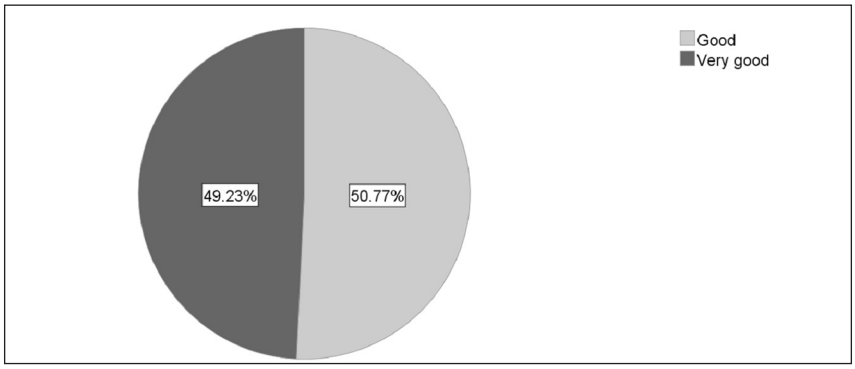
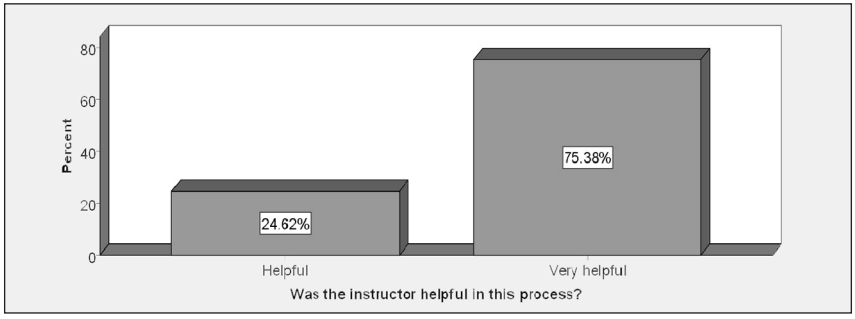



Figure 4. The course facilitator's support




Students' satisfaction with the integration of the G Suite in their EAP course was also illustrated in their responses related to their wish to use these tools again in the future as summarised in Table 3.

Table 3. Students' wish to use the G Suite for Education in the future

| Students' Responses | % |
|---|---|
| No | 1.5 |
| Yes | 84.6 |
| No response | 13.8 |

## 4. Conclusions

Despite the fact that research in the use of cloud computing in education is still young, previous studies that have been conducted in the field concur that this type of technology is a very promising one and that it could constitute a 'new dawn' in education (Ercan, 2010; González-Martínez et al., 2015; Lakshminarayanan et al., 2013; Sultan, 2010). Cloud computing is practical, flexible, easy to use, cost effective, and offers high scalability. Moreover, with all of its affordances, which allow for interaction, communication, collaboration, finding, sharing, and storing material, it can support research and it can facilitate learning; according to the latest developments in the theories of learning which embrace social constructivist and connectivist approaches, learning is based very much on social interaction with the environment and networking, which means learning from each other. Such approaches can be catered for by cloud technologies, such as the G Suite for Education.

The study may have limitations, mostly related to the fact that action research is conducted with small samples and it operates in specific contexts trying to provide solutions to specific problems. For this reason, action research does not aim at generalisability but going in depth through iteration and the continuous cyclical process of improvement, which ensure quality and reduce subjectivity (Burns, 2005). Nevertheless, the study may yield some interesting insights pertaining to the use of cloud computing in general and the G Suite in particular that may prove useful to ESP educators, general English practitioners, teacher trainers, or even educational institutions who wish to adopt cloud technologies in the future.

The present study also generates ideas for future research. More specifically, it would be interesting to investigate how the integration of the Google Suite for Education evolves through the years; adopting new features and applications that the suite will offer in the future. Another parametre that would be useful for future research to examine would be to go beyond students' perceptions and assess how effective these tools are in the acquisition of the target language. Finally, future research in the field of cloud computing could also explore to what extent students in general continue using the specific tools for study or even in their everyday life after being initiated in the use of these technologies in the context of their studies.

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