



1 factors for successful online peer mentoring and help us gain insight into the kind  
2 of support that is necessary for mentors in order to engage in effective online peer  
3 mentoring relationships. Therefore, the study has been carried out as a qualitative  
4 study with the following underlying questions:

- 5
- 6 1) What factors enable successful online peer mentoring?
- 7 2) What factors constrain successful online peer mentoring?
- 8

9 First, the key components of effective mentoring relationships are presented.  
10 Then, the way in which a virtual environment impacts peer mentoring is  
11 examined. Finally, factors that could moderate the effects of technological  
12 mediation on interaction with the student are discussed. It was found that online  
13 peer mentoring cannot replicate face-to-face mentoring; possible reasons are  
14 examined and discussed.

## 17 Literature Review

### 19 Defining Peer Mentoring

20

21 One of the main challenges regarding the definition of peer mentoring is the  
22 fact that across the literature there are various terminologies used to describe  
23 mentoring such as guiding, tutoring and assisted learning (Kram 1985; Topping  
24 1996; Dioso-Henson 2012). As a result of this wide-ranging terminology, the  
25 terms are frequently mixed-up or used interchangeably. Making things clearer,  
26 Collier (2017) differentiates between *hierarchical mentoring* and *peer mentoring*.  
27 *Hierarchical mentoring* occurs when two people from two different social  
28 positions such as a counselor and student or an academic advisor and student or  
29 even a faculty member and student are involved, whereas *peer mentoring*, which is  
30 the focus of this paper, is described as a relationship involving a more experienced  
31 student providing assistance, knowledge and advice to a less experienced student.  
32 Shifting away from hierarchical mentoring, which I myself practise as an  
33 academic advisor, my aim is to examine the strengths and weaknesses of peer  
34 mentoring which take place not in the typical face-to-face form, but in an online  
35 environment which became the norm in the COVID-era and might continue in the  
36 high-tech modern era. Since the environment in which a service takes place is of  
37 paramount importance, the concept of the mentoring environment is analysed next.

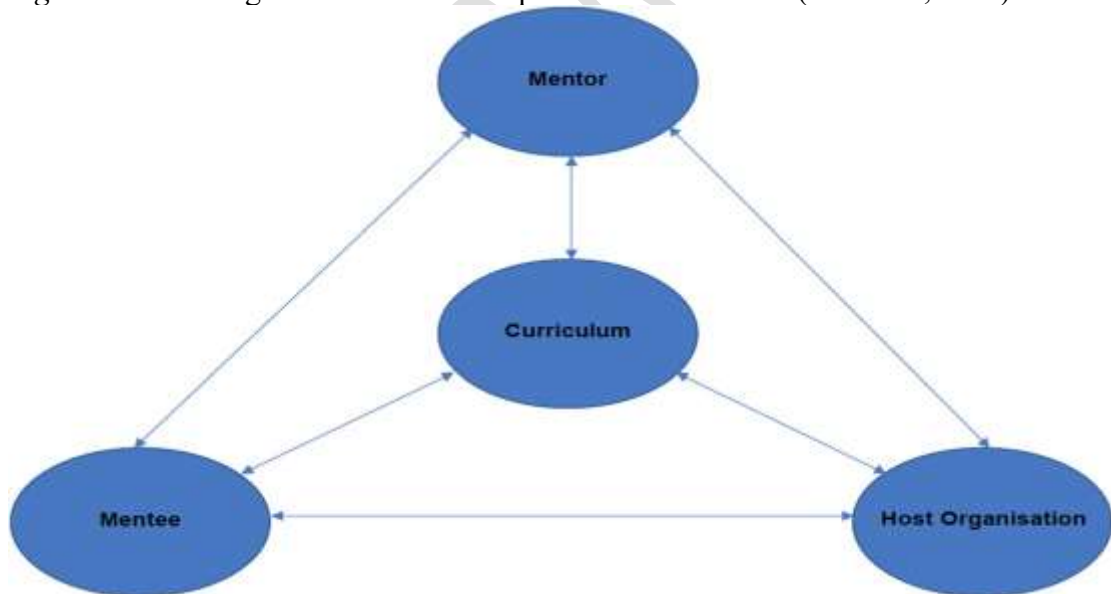
### 39 The Mentoring Environment

40

41 Davis and Nakamura (2010, p. 1060) characterise the mentoring environment  
42 as a “*function of a relationship that rests upon a set of interactional foundations*  
43 *that allow a protégé to capitalize on the strengths of the mentor thus facilitating*  
44 *behaviours that will enable the protégé to develop and internalize the requisite*  
45 *knowledge, skills, and attitudes (KSAs) as fully as possible*”. However, Sng’s et al.  
46 (2017) description of the impact the role of the mentor and the host organization

1 can exert on the mentoring relationships has challenged its applicability in the  
 2 modern practice of mentoring. Given the dearth of studies on mentoring  
 3 environments, Kalen, Ponzer and Silen (2012) argue that learning environments  
 4 could be used to provide understanding of mentoring environments. To clarify, the  
 5 learning environment structure consists of five sub-themes including the host  
 6 organisation, the formal curriculum, the tutor, the learner and the relationship  
 7 between them (Hee et al., 2019), which is the focus of this study and specifically  
 8 how this is experienced in an online setting. Accordingly, a collaborative  
 9 relationship based on mutual *commitment*, *cooperation* and *authenticity* fosters the  
 10 relationship between the tutor and the learner, enhancing the creation of  
 11 personalised ties while preventing the isolation of the learner (Hee et al., 2019).  
 12 Extrapolating learning environment data to the mentoring environment setting is  
 13 possible considering the commonalities in both settings and as a result mentoring  
 14 environments can be defined as “*shaped by the nature, culture and structure of*  
 15 *evolving mentoring relationships between the mentor, the mentee, the host*  
 16 *organization and the curriculum (henceforth quartet of stakeholders) [see Fig. 1].*  
 17 *Mentoring environments evolve to support and nurture mentoring relationships in*  
 18 *dynamic conditions and as particular relationships amongst the quartet of*  
 19 *stakeholders change.*” (Hee et al., 2019, p.2196). The key components of effective  
 20 mentor-mentee relationships in this quartet are analysed next.

21

22 *Figure 1. Mentoring Environment - The quartet of stakeholders (Hee et al., 2019)*

23

24

25 **The Key Components of effective mentoring relationships**

26

27 Researchers on youth mentoring define the quality of mentoring relationships  
 28 as based on the *frequency of contact* between the mentor and the mentee,  
 29 *emotional closeness* and *durability* of the relationship (DuBouis et al. 2011).  
 30 Rhodes et al. (2005) also acknowledge mentor-mentee *closeness* and *empathy* as  
 31 two crucial contributing factors to high quality mentoring relationships.

## 1 **Emotional Closeness**

2

3 As Latino and Unite (2012) argue, students can share concerns with their peer  
4 educators more freely than with their professors as the former can be less  
5 intimidating. Supplemental Instruction as mentioned in their study fosters a  
6 nonthreatening environment since learning is facilitated by peers. As a result, the  
7 approachability of peers can be crucial for first-year students who may feel home-  
8 sick and find it difficult to develop a sense of belonging. Indeed, a mentor who has  
9 already experienced or currently faces similar challenges is in a better position to  
10 relate to their coevals. As Griffin and Romm (2008) pinpoint, peer educators can  
11 bridge the gap between the faculty and the student body, guide students to campus  
12 resources and constitute role models for academic and co-curricular behaviours.

13

## 14 **Empathy**

15

16 Student tutors and student learners having similar social roles are thought to  
17 be *socially congruent* (Schmidt, 1995). In other words, interpersonal qualities  
18 shared between mentors and mentees not only enhance informal and empathic  
19 communication, but also establish a learning environment which promotes an open  
20 exchange of students' personal concerns and ideas. Equally important is the role of  
21 *cognitive congruence* according to which student tutors and student learners have  
22 similar learning experiences and a similar knowledge base and are therefore  
23 considered to be on the same 'wavelength' (Bugaj, 2019). Indeed, the lack of  
24 knowledge and expertise of mentors, compared to more experienced faculty  
25 members could be offset by *cognitive congruence* (Dolmans et al, 2002; Groves  
26 et.al. 2005). The concepts of *social* and *cognitive congruence* are further analysed  
27 next.

28

## 29 **Social and Cognitive Congruence**

30

31 Research on the relationships created throughout peer mentoring in  
32 educational contexts highlight that effective mentors can respond to mentees'  
33 academic and psychosocial requests as well (Ward et al., 2014). Such levels of  
34 response postulate social and cognitive congruence (Ten Cate and Durning, 2007).  
35 Social congruence can be enhanced when mentors disclose information regarding  
36 their own learning experiences and reveal their own past or even present learning  
37 challenges (DuBouis et al. 2011). In turn, mentees are then more likely to disclose  
38 their own learning gaps thus enabling support from their mentors. Equally  
39 important to social congruence is cognitive congruence which is defined as the  
40 ability of mentors to understand the cognitive and learning challenges of their  
41 mentees as well as anticipate any learning difficulties (Melgar and Meyers, 2020).  
42 When this is coupled with social congruence, mentees feel that the difficulties they  
43 face in the learning process are not only realised by mentors, but also addressed  
44 through explanations suitable for their learning needs (Melgar and Meyers, 2020).  
45 Social congruence has to be established prior to the mentors' use of cognitive  
46 congruence to provide academic support. In other words, the establishment of a

1 strong emotional connection is necessary before mentors proceed with the  
2 achievement of the objectives of the programme or the academic support of the  
3 student. The extent to which social and cognitive congruence can be achieved in  
4 the online environment will be discussed, but first it is worth comparing online  
5 with face-to-face mentoring.

### 6 7 **Online vs face-to-face peer mentoring**

8  
9 The onset of the pandemic has proven that peer mentoring can take place in a  
10 technology-mediated environment, replacing the common in person-experience  
11 with online mentoring. Online mentoring can be both synchronous, with the use of  
12 video and audio conferencing tools, and asynchronous using text-based media  
13 (Schwartzman, 2013). Mentors, however, are faced with the challenge of  
14 maintaining student-centredness and engagement while providing their services  
15 online. Although the implementation of programmes that render peers as leaders in  
16 the academic domain continue to rise (Keup and Mullins, 2010), there has been  
17 scant research on whether these programmes could be successful in an online  
18 setting. As Melgar and Meyers (2020) highlight, in spite of the growing  
19 significance of online mentoring, studies on particular mentoring dynamics remain  
20 scarce. However, focusing on existing research on online mentoring, they argue  
21 that the online communication environment offers various advantages to  
22 participants in comparison to face-to-face mentoring programmes. Specifically,  
23 online mentoring can render all participants equal as demographic characteristics  
24 can affect interactions less (Scogin and Stuessy, 2015). Consequently, interactions  
25 between mentors and mentees are based on common goals and interests rather  
26 than on perceived differences or similarities stemming from demographic factors.  
27 Using online technologies may also be seen as less intimidating than interacting  
28 face-to-face by some online mentoring participants (Scogin, 2016). Hizer et al.  
29 (2017), in their study regarding the effectiveness of online supplemental  
30 instruction found that the outcomes of students taking part in online sessions were  
31 equivalent to those participating in face-to-face ones, a fact suggesting that the  
32 online environment was not an impediment to the effectiveness of the programme.  
33 A number of challenges regarding online mentoring programs do exist however,  
34 mainly related to engagement and whether this can be sustained via online  
35 communication platforms, especially when the mentor-mentee interaction is  
36 exclusively online (Melgar and Meyers, 2020). Decreased engagement can result  
37 from the lack of real time interaction, especially if contact between mentors and  
38 mentees is not frequent and timely. However, web-conferencing, among other  
39 synchronous communication tools, target to address the shortcomings of  
40 asynchronous tools since participants can employ useful verbal information, such  
41 as words and tone of voice, and non-verbal information while interacting in the  
42 mentoring session (Melgar and Meyers, 2020). On the other hand, Shpigelman and  
43 Gill (2013) argue that limited digital literacy skills on the part of participants can  
44 affect online interactions and impact not only the motivation of participants to  
45 engage, but also the frequency of the mentor-mentee communication. Scogin and  
46 Stuessy (2015) in their study of online mentoring found that, despite the

1 motivational support provided to mentors, there were variations in terms of the  
2 type and amount of support provided. They attributed these variations to  
3 challenges related to communication in an online environment and therefore  
4 recommendations were made for further training for online mentors. Shpigelman  
5 and Gill (2013) concluded that a more formal and distant communication style  
6 used by mentors in their interaction with mentees was conducive to unsuccessful  
7 online mentoring relationships. The authors also found that high levels of  
8 uncertainty in terms of which was the best way to use an online format led to  
9 unsuccessful interactions and, as a result, they recommend that online mentoring  
10 should function around specific discussion topics. Successful mentors, on the other  
11 hand, asked their mentees direct questions, employed a conversational style and  
12 offered them further learning resources (Scogin, 2016). Studies pertinent to the  
13 effectiveness of synchronous communication tools provide mixed results.  
14 Beaumont et al. (2012) in their study of peer assisted programs found that a sense  
15 of connection between the mentor and mentee was low although communication  
16 took place through video conferencing and audio. Similarly, Hizer et al. (2017) in  
17 their research on the effectiveness of peer-led sessions at university in which both  
18 synchronous and asynchronous communication tools were used found that  
19 students opted for chat-based interactions instead of real time mentoring sessions.  
20 Overall, research on online peer mentoring programmes is an area that needs to be  
21 further developed with researchers calling specifically for further research on the  
22 effectiveness of synchronous communication tools in peer mentoring and to what  
23 extent they can replicate the face-to-face experience. The purpose of this paper as  
24 explained next is to contribute to this direction.

25

26

27

## Methods

28

### Research Design

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31 This study provides a process evaluation with the intention of aiding the  
32 decision-making process when a review takes place. Since the objective of  
33 evaluators is to aid decision makers make wiser decisions, evidence is provided  
34 which shows both the successes and drawbacks of programmes. As a result,  
35 evaluators pinpoint some of the factors involved with better or worse outcomes, as  
36 well as explain how the programme works in practice. There are expectations,  
37 then, that these data will influence the decision-making process and affect the  
38 actions that managerial staff takes (Weiss, 2005). To gain full understanding of  
39 mentoring, evaluation measures should ideally address the mentoring process and  
40 the outcomes as well as the factors that could shape it (National Academies of  
41 Sciences, Engineering and Medicine, 2019).

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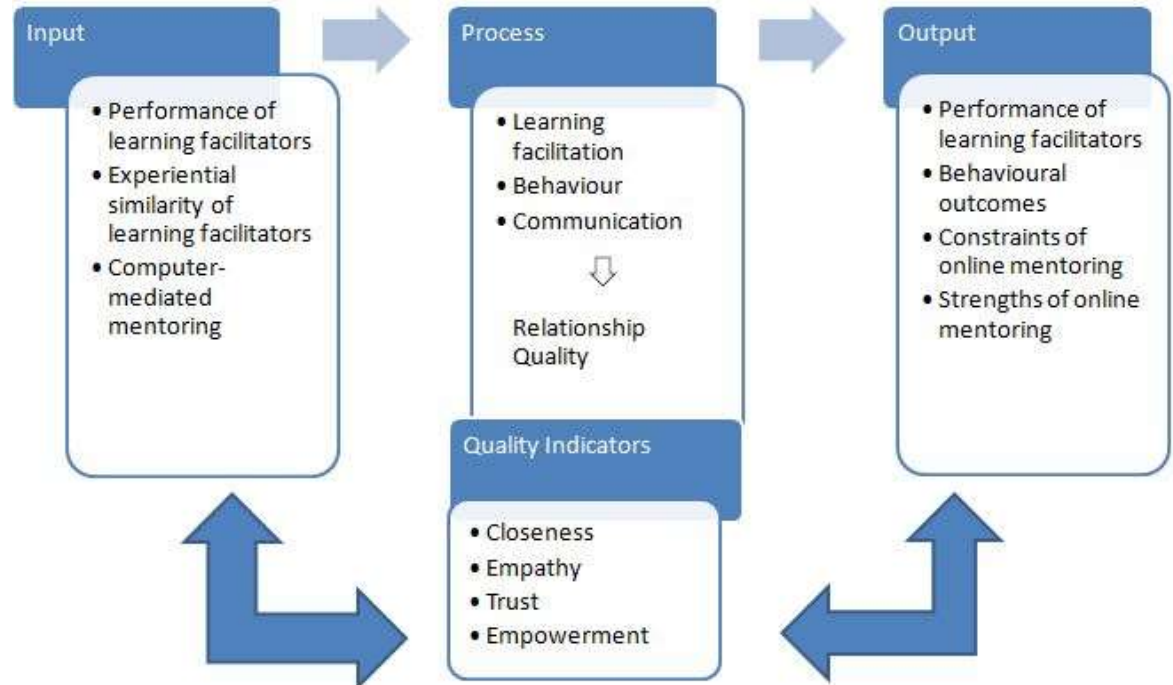
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The conceptual framework in order to evaluate the transition from face-to-  
face peer mentoring to online peer mentoring and its effect on mentors' feelings  
and experiences was a general input-process-output one as illustrated in Figure 2.  
The model was based on Input-process-output model of mentoring adapted by Eby

1 et. al (2013) and National Academies of Sciences, Engineering, and Medicine  
2 (2019) and was further adapted to serve the purpose of this research.

3

4 *Figure 2.* Input-process-output model of mentoring adapted by Eby et al. (2013)  
5 and National Academies of Sciences, Engineering, and Medicine (2019)



6

7

## 8 **Context of the Study**

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10 This study was conducted in the largest private college in Greece, Deree  
11 College, which, as reported in its website ([www.acg.edu](http://www.acg.edu)) serves almost 4200  
12 students in a variety of fields. Student Academic Support Services (SASS) is  
13 presented as a key benefit of the College since this service is not offered by other  
14 private colleges, let alone public universities. The role of SASS, which is also  
15 shared on the site of the college (<https://www.acg.edu/undergraduate/academic-enrichment-programs/student-academic-support-services/the-role-of-sass/>), is to  
16 enhance the educational experience through both one-to-one and group sessions.  
17 The philosophy of learning facilitators at SASS is non-instructional reflecting their  
18 own mindset, critical reasoning skills and abilities. Their role is supportive and  
19 distinct from that of instructors as the learning facilitators are not content experts  
20 or evaluators. However, instructors and learning facilitators collaborate and  
21 through their cooperation aim to assist students with developing appropriate  
22 college skills to become owners of their own learning process.  
23

24

## 25 **Impact of COVID-19 on Peer mentoring at Deree College**

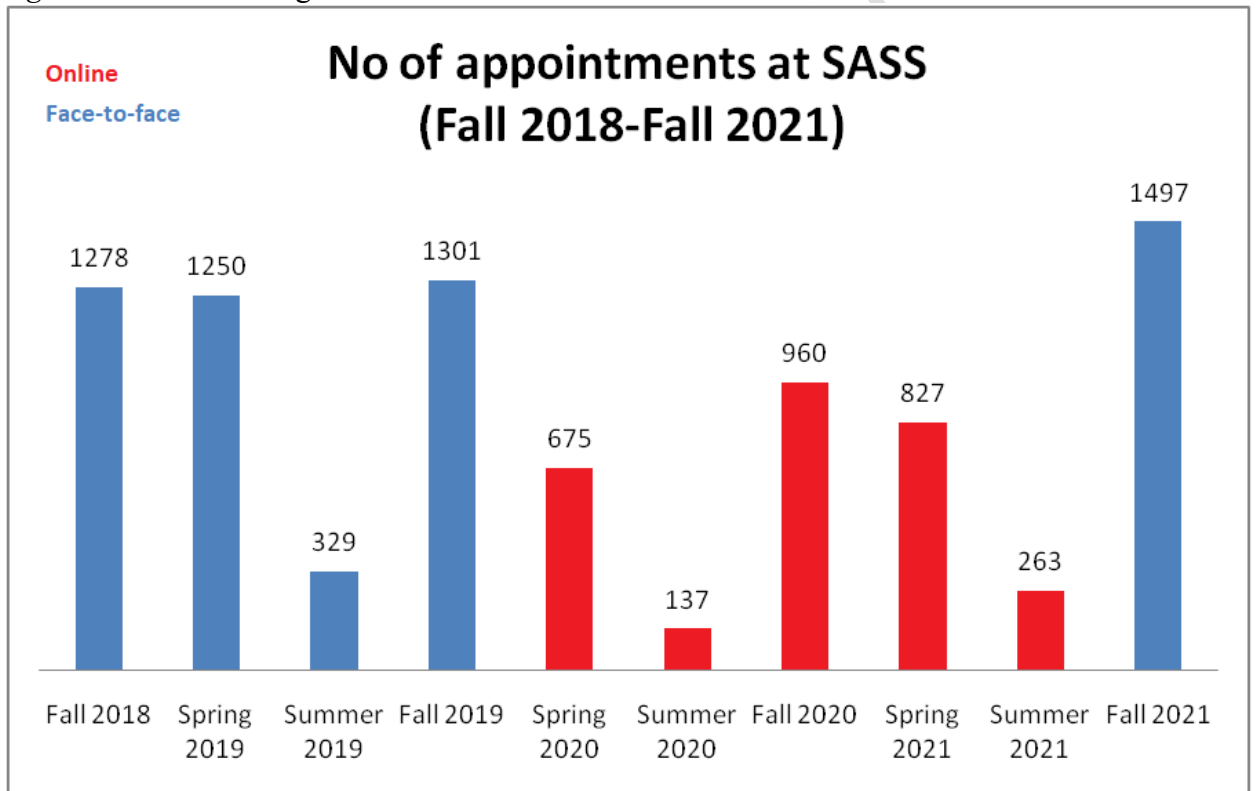
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27 Mentoring students face-to-face was abruptly overturned at Deree College  
28 during the Spring Semester 2020 due to the COVID-19 pandemic. While in the

1 Fall Semester of 2019, 1301 students received learning facilitation on campus, a  
 2 number similar to that of the previous year (see Figure 3), in the Spring Semester,  
 3 with the onset of the pandemic and the closure of the college on March 3<sup>rd</sup> and  
 4 with the learning facilitation turning online, the number plunged to almost half. It  
 5 is worth noting that although the figure for Spring Semester 2020 refers to online  
 6 mentoring, few sessions took place face-to-face in January and February 2020.  
 7 After March and until all learning facilitators returned to campus in September  
 8 2021, mentoring sessions were conducted via Zoom meetings and MS Teams.  
 9 Remote mentoring continued in Spring and Summer 2021, with 827 and 263  
 10 students being mentored mainly via MS Teams respectively.

11  
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Figure 3. Peer mentoring sessions at SASS from Fall 2018 to Fall 2021



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 14  
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**Data Sample**

17 Participants in this research are the learning facilitators of SASS who are  
 18 directly involved in the delivery of mentoring to other students, regardless of the  
 19 programme attended at Deree College. Learning facilitators serve as an academic  
 20 resource to students by helping them understand and apply course content; they  
 21 support the development of essential academic skills by offering their guidance to  
 22 students to reach their academic goals. As a result, learning facilitators help  
 23 students identify their needs in the context of specific tasks and propose processes  
 24 and methods appropriate to the course level and assignment. The SASS learning  
 25 facilitators perform their duties in direct or indirect cooperation with Deree  
 26 instructors, bearing in mind the ultimate purpose, which is to help students



1 improve. In addition, all learning facilitators belong to at least one “Circle of  
2 Learning”, which is determined by the facilitator’s major field of study,  
3 corresponding to the following “Circles”:

- 4
- 5 • Quantitative courses, Natural Science, Computer Science
- 6 • Business fields
- 7 • Social Sciences
- 8 • Humanities
- 9 • Performing & Visual Arts

10

11 The intention of the study was for all circles to be focused on, so that the  
12 sample is qualitatively representative and a holistic perspective is achieved. The  
13 aim is accomplished as shown in Table 1 below. I subjected data from male and  
14 female participants, albeit using pseudonyms, so that similarities and differences  
15 could be identified.

16

17 *Table 1.* Circles taught by each participant

<b>Participants</b>	<b>Giannis</b>	<b>Maria</b>	<b>Giorgos</b>	<b>Pavlos</b>	<b>Ioanna</b>	<b>Vasilis</b>	<b>Tina</b>	<b>Rita</b>
<b>C I R C L E S</b>	<b>Quantitative courses, Natural Science, Computer Science</b>			√	√	√	√	√
	<b>Business fields</b>	√		√		√		√
	<b>Social Sciences</b>	√	√		√	√	√	
	<b>Humanities</b>		√		√		√	
	<b>Performing &amp; Visual Arts</b>		√		√			

18

19 The Office of SASS at Deree College consists of the Director of the Student  
20 Academic Support Services, the Secretariat and 21 learning facilitators. The  
21 intention was that 8 learning facilitators, more than 1/3 of the overall group, be  
22 interviewed to ensure saturation. In the event that saturation was reached within 5  
23 interviews, (one participant from at least one Circle), it would still be necessary to  
24 extend the interviews to 8, if not more, to ensure a holistic perspective of SASS  
25 regarding the topic to be researched. However, in the event that saturation was not

1 reached within 8 interviews, the number of the participants would be extended as  
2 needed.

3 Participants whose studies were from different circles were selected from the  
4 total of 21 Learning Facilitators at Deree College to ensure that the sample is  
5 qualitatively representative. All participants were audio recorded after signing a  
6 consent form. The interview consisted of 6 open-ended questions which, eliciting  
7 oral data, focus on the mentors' experience of interacting and teaching online. In  
8 addition, prompt questions were also posed throughout the interview in order to  
9 elicit as much information as possible, depending on the flow of the interview, and  
10 to foster the environment of a casual conversation, rather than a strict interview  
11 process. The main themes covered were: 1) the experience of the interviewees  
12 with the change to online mentoring and the feelings derived from such a change,  
13 2) the main challenges they faced and how they would evaluate such a change, 3)  
14 how they would assess the impact of such a change on mentees 4) which are the  
15 best practices to adopt and action to be taken by both SASS and universities to  
16 enhance the online mentoring experience.

17 All interviews were conducted face-to-face and were audio recorded. The verbal  
18 data were transcribed into written form so as to conduct a thematic analysis. It is  
19 worth mentioning that in my effort to conduct an effective thematic analysis the  
20 transcripts retained all the necessary information while remaining true to their  
21 original nature (Edwards, 1993).

22

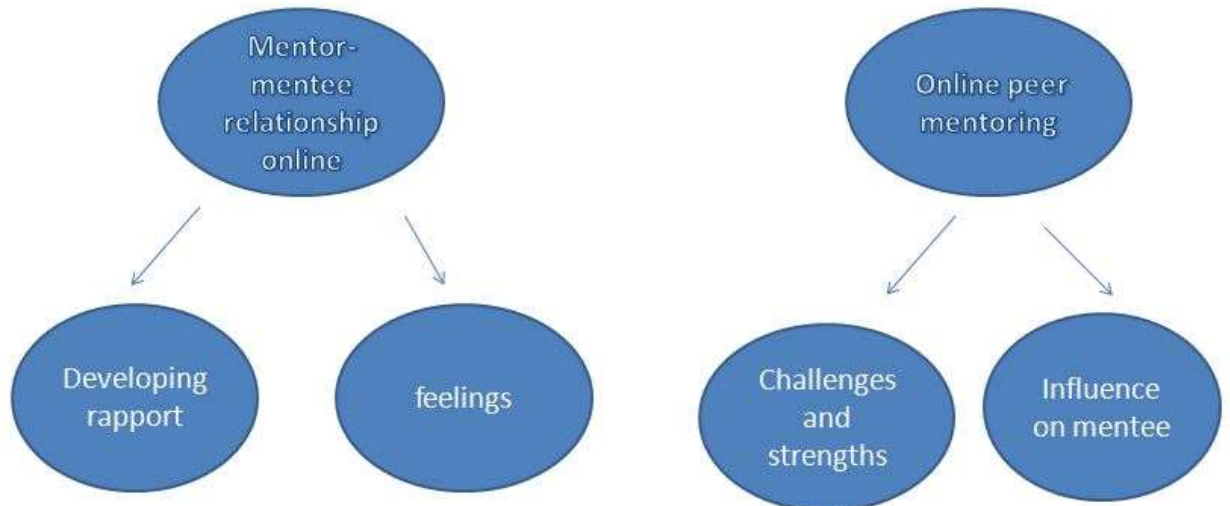
### 23 **Interview Analysis**

24

25 Analysis focused on the area of interest, that is, how learning facilitators  
26 experienced their role after abruptly having to mentor peer students online and the  
27 equivalent thematic codes. In the following section, taking into consideration  
28 online peer mentoring and the implications based on the quality indicators of  
29 mentor/mentee relationship mentioned in the literature review, I will analyse the  
30 experience of the learning facilitators interviewed. Overall, the thematic analysis  
31 that follows is inductive, being data-driven and not fitting into a pre-existing  
32 coding frame or any analytic prejudices of the researcher (Braun and Clarke,  
33 2006). Thematic analysis was used due to its flexibility and opportunity to provide  
34 a rich and detailed account (Braun and Clarke, 2006). A theoretical approach  
35 which required my engagement with the literature prior to analysis was used  
36 (Braun and Clarke, 2006). By examining the interviewees' experiences of  
37 mentoring students online as learning facilitators, I investigated how their own  
38 feelings mirror the challenges of online mentoring mentioned above. Interview  
39 excerpts presented in this paper provide the basis for my research findings while  
40 rendering the concepts understandable and applicable. It should be noted that  
41 learning facilitators were asked to share their feelings of mentoring students online  
42 based on their experiences rather than which they perceive to be the differences  
43 between online and face-to-face mentoring. What is more, the interviews include  
44 examples of the mentors' experiences illustrating this comparison. Based on Braun  
45 and Clarke's (2021) step by step guide of doing thematic analysis, I firstly  
46 familiarised myself with data (phase one), then did coding (phase two) and

1 generated initial themes (phase three) which I developed and reviewed next (phase  
 2 four). My final themes and sub-themes, after refining, defining and naming them  
 3 (phase five) are the following:

4 *Figure 4. Map showing two main themes derived from interviews and sub-themes*



6  
 7

8 I am aware that the coding I have undertaken helped me retain an empathetic  
 9 awareness of the experiences described by the participants. This enabled me to  
 10 engage in theoretical analysis of the discourse without losing connection to the  
 11 affective quality of their accounts. In the last phase (phase 6) I began writing up  
 12 the analysis presented next.

13  
 14

## 15 **Results and Discussion**

16  
 17

18 Based on the research questions and within the theme of mentoring  
 19 relationships online and its subthemes, the main points that emerged were feelings  
 20 of impersonalisation and lack of intimacy primarily because mentors often did not  
 21 have eye contact with the student and could not see their facial expressions as in  
 22 many cases students opted for a turned off camera.

23  
 24

### 23 **Feelings of Impersonalisation and Lack of Intimacy**

24  
 25

25 Seeking assistance from learning facilitators at a distance can be achieved in a  
 26 variety of ways, with video conferencing being the most preferred method. Unlike  
 27 face-to-face mentoring sessions, online mentoring may lack the visual cues,  
 28 including body language and eye contact that help students and mentors develop a  
 29 positive relationship; this occurs when the mentee opts for a turned off camera. As

1 a result, the mentor, being unable to see the mentee's face, must infer from the  
2 tone of voice what the student's concerns are. It is clear that all participants  
3 expressed their concern that online mentoring posed hindrances for mentors in  
4 terms of comprehending whether or not the mentees fully understood what was  
5 being conveyed to them due to the absence of non-verbal cues. It was also stated  
6 that interpreting mentees' feelings and insecurities was not as straightforward with  
7 online mentoring. Since full communication involves understanding both verbal  
8 and non-verbal cues, there was consensus that online communication posed  
9 challenges. Both Giannis and Maria mentioned the lack of intimacy experienced as  
10 opposed to face-to-face mentoring sessions. Specifically, Giannis mentioned:

11

12 *"It was quite difficult because most people wouldn't turn on their cameras. So, it was*  
13 *like talking to the wall, I wasn't sure if they listened. They pretty much stayed in the*  
14 *call until I was done talking which was kind of puzzling [...] I think that you get a lot*  
15 *from the other person's facial expressions. [...] So, it was like we were completely*  
16 *detached with one another. There was a wall between us."*

17

18 Maria added her concern about impersonalisation rendered due to the lack of  
19 eye-contact stating:

20

21 *"It wasn't the same as doing it in person because there are many things that*  
22 *influence the face to face session and the online. One of the more important aspects*  
23 *of the face to face and facilitation in general is the connection you can have with the*  
24 *student [...] especially for a student having dyslexia or something like that, there's a*  
25 *need to have the presence there [...] I need to see the body, I need to know that they*  
26 *see me in order for them to be focused."*

27

28 Similarly, Giorgos, Pavlos, Ioanna and Vasilis presented the scarcity of facial  
29 expressions and body language as a great impediment to learning and mentoring.  
30 Characteristically, Ioanna stated: *"[...] the interaction is so different. Here I can*  
31 *see their facial expressions, I can see their body language [...] with online*  
32 *especially many times they wouldn't even open their cameras. I need to have a face*  
33 *to go with a name. And I was essentially talking to a blank screen quite a few*  
34 *times"*.

35

36 Rita mentioned: *"[...]some students were not opening their cameras, so I had*  
37 *to ask because it was like talking to the wall. And I didn't know if they were*  
38 *understanding what I was saying or not. So, I was asking them turn on their*  
39 *cameras, because it's better, you can teach better, you can see if they're confused,*  
40 *or not [...] face to face is better because you have like connection with the student*  
41 *[...] what I'm doing is like sitting next to them, so I can understand when they're*  
42 *confused, where to stop."*

43

44 These statements shed light on how online mentoring instigates alienation and  
45 how the participants felt disconnected from their mentees. However, the  
46 difficulties present in virtual interaction with the students may hinder not only  
47 communication, but also the establishment of rapport with the mentee. Pavlos  
mentioned, *"[...] when people come here, you kind of build a connection. Because*  
*some people feel like they're too close with you or friends with you. [...] It's kind of*

1 *weird, but it's better because I believe it builds a better connection and better*  
 2 *relationship even if you're not friends. [...] I think the main difference is the*  
 3 *relationship you can build through face to face and not with online classes.”*

4 A similar concern was expressed by Vasilis who stressed the need for  
 5 cooperation, empathy and closeness with the mentee while building a relationship  
 6 in which mentor and mentee are equals. Specifically, Vasilis mentioned, *“I think*  
 7 *that empathy is important [...] I think that there needs to be cooperation between*  
 8 *the student taking the course and the learning facilitator. They have to work*  
 9 *together to come as close as possible, [...] try to get to know each other a bit.*  
 10 *Build a relationship, that it's not necessarily the one of a teacher student, because*  
 11 *in the end, we are not teachers, we are just humans that have passed the course.*  
 12 *This is something that the students need to understand. We were in the same*  
 13 *position.”*. This approach can indeed foster not only engagement in learning  
 14 (*cognitive congruence*), but also psychosocial support (*social congruence*).  
 15 Giannis also highlighted that empathizing with the mentee in person greatly  
 16 differentiates face-to-face mentoring from e-mentoring. In his own words  
 17 *“(mentees) need to know that we're just like them [...] we struggle as well.”*

18 Since interaction mediated by technology could impede the establishment of a  
 19 relationship or rapport (Driskel et al, 2003), the need for the creation of such  
 20 intimacy while interacting with the student online is of paramount importance. As  
 21 Giorgos suggested it is vital for the mentee to concentrate and be able to  
 22 communicate fully with their mentor. To ensure concentration, it is advisable for  
 23 the mentee to feel that they have entered the learning space of the mentor, thus  
 24 drawing the attention of the mentee. However, the online environment posed  
 25 challenges to all the participants.

## 27 **Challenges and strengths of online peer mentoring**

28  
 29 One of the main challenges all participants faced was the difficulty in  
 30 replicating the best practices of face-to-face peer mentoring. The majority of the  
 31 participants found online peer mentoring time-consuming and their job restricted.  
 32 Characteristically, Tina argued:

33  
 34 *“I felt like a job being done as 20% instead of potentially 100%. The students,*  
 35 *including myself, are in a completely different context. Because since we are in our*  
 36 *own rooms, there are a lot of familiar distractions, a lot of things that you kind of feel*  
 37 *like that you wanna devote your time to them instead of what's happening right in*  
 38 *front of you.”*

39 Similarly, Ioanna, teaching Natural Science and Math courses, highlighted  
 40 *“we covered half the material that we would have if we were face-to-face”*. It is  
 41 worth quoting Ioanna's challenge while teaching Biology:

42  
 43 *“How on earth am I supposed to teach someone photosynthesis, if I can't actually*  
 44 *draw something and show him a flower to start with. It was very, very hard to convey*  
 45 *the information that was needed in a way that made students understand what the*  
 46 *topic, the material was about. Now, MS Teams does have a whiteboard but with the*  
 47 *cursor, trying to draw it was really bad writing and time-consuming”*.

1

2 It is worth noting however, that this time-consumption derived from low  
3 computer literacy skills or even lack of equipment on the part of mentees.  
4 Specifically, Pavlos stated that “ *(mentees) don't know how to check, they don't*  
5 *know how to use the code, they don't know basic stuff, which makes it very*  
6 *difficult. [...] And there are many difficulties with equipment. Some of them don't*  
7 *have computer, some of them don't have Wi-Fi connection.*”

8

9 It must be stressed that there was consensus among learning facilitators and  
10 especially for those teaching Natural Science courses and quantitative courses that  
11 the online environment cannot replicate the practices of face-to-face peer  
12 mentoring. This became more evident to certain learning facilitators who dealt  
13 with students having dyslexia or other learning difficulties. The experience of  
14 Giorgos who has dyslexia himself is worth considering: “*For me, because I have*  
15 *dyslexia [...] it was very hard to focus. So, this was a problem for my online class.*  
16 *I imagine students that also have learning difficulties, how difficult it was to*  
17 *concentrate.*”

17

18 However, despite the challenges, every learning facilitator employed their  
19 own practices to enhance the online mentoring process and facilitate mentees so  
20 that the negative impact on the mentees, analysed next, could be mitigated.

20

## 21 **Impact on students/mentees**

22

23 Regarding the interview question about the impact of the change from face-  
24 to-face peer mentoring to online mentoring, there was agreement by all  
25 interviewees that the impact on students was mainly negative. Giorgos, underlying  
26 the difference between face-to-face and online mentoring mentioned:

27

28 “*They're more committed in class [...] pay more attention to take notes [...] and they*  
29 *are more prone to study, because they're in the environment of the library (where*  
30 *SASS is located). They see other students in other classes to start doing (mentoring*  
31 *sessions)*”.

32

33 This could partly explain the significant drop in the number of appointments  
34 at SASS depicted in Figure 3. The sharp decline in mentoring sessions taking  
35 place in a technology-mediated environment during the COVID -19 era must be  
36 attributed to the online environment. As verified by Tina, “*we had a lot less*  
37 *appointments at academic support services, exactly for this reason, because there*  
38 *was absolutely no motivation on the part of the students [...] A student is going to*  
39 *seek help from people they trust, not from strangers (meaning learning facilitators)*”

40

41 Ioanna commenting on the negative impact of the transition from face-to-face  
42 to online peer mentoring raised interesting points about the difference of being  
43 taught by a professor from being taught by a peer as well as the difference of the  
44 learning environment, be it virtual or real, as a crucial parameter. Specifically,  
45 Ioanna stated: “*The mentality of actually having a facilitation session with*  
46 *someone [...] not a classroom professor is very different. You take it with a*  
47 *completely different frame of mind. [...] I have students who are drinking wine as I*  
*was facilitating a session or smoking a cigarette. [...] Much more relaxed,*

1 *informal [...] which is because I'm a student, I'm a classmate of theirs. But still*  
 2 *[...] It's a session. Pay attention. [...] sometimes they were really relaxed, like*  
 3 *people (learning facilitators) were their friends and somebody to rely on during*  
 4 *that difficult period". This statement challenges the benefit of the online*  
 5 *environment being less intimidating for mentees, as mentioned in the literature*  
 6 *review, by presenting the downside of such an informal and relaxed atmosphere.*  
 7 Areas for improvement in online peer mentoring are presented next.

## 9 **Areas for Growth in online peer mentoring**

11 Since contributing to changes in practice necessitates a robust understanding  
 12 of the practices and how these practices could change, (Saunders, 2012) the last  
 13 half of the interview questions focused on this. The context of use in this  
 14 evaluation is institutional with the emphasis of the practice being quality  
 15 enhancement and accountability (Saunders, 2012). As a result, responses to the last  
 16 3 questions of the interview were centered around the need for change and  
 17 adaptability providing food for thought as well as certain implications for  
 18 improvement.

19 In addition to sharing the challenges they faced, participants talked about the  
 20 areas they felt could be improved upon to better support themselves when offering  
 21 peer mentoring online. Based on the responses they shared, all eight participants  
 22 expressed the need to be provided with more advanced technological products,  
 23 such as computers, cameras, earphones that will assist them reach out to the  
 24 mentee more. Giannis stressed the need for reevaluation of teaching techniques  
 25 and the need to have students more engaged in an online setting. Vasilis continued  
 26 by describing the idea of attending seminars by experts to enhance their skills  
 27 while Ioanna highlighted the need for presentation sessions, in particular. To that  
 28 end, all participants expressed the need to be well trained, so that they can be  
 29 prepared to mentor students in an online environment and respond to specific  
 30 student needs in an online setting.

## 33 **Conclusion**

35 This study addresses a gap in the peer mentoring literature by furthering our  
 36 understanding of the impact of online peer mentoring on the mentor-mentee  
 37 relationship. While previous studies of peer mentoring have mainly focused on the  
 38 experiences of mentees in a classroom environment, this study highlights mentors'  
 39 experiences in a virtual setting. In line with published research on the significance  
 40 of establishing social congruence (Rhodes et. al, 2005) this study focused on  
 41 whether and to what extent an online mentoring environment can foster  
 42 interactivity and the provision of psychosocial support. The purpose of this study  
 43 is to gain a deeper understanding of how learning facilitators feel while providing  
 44 their services online. According to the data derived from the interviews, learning  
 45 facilitators operate differently in an online space, and this might influence how  
 46 well they are able to offer peer mentoring and set up meaningful relationships with

1 their mentees. In order for students to receive the benefits of effective peer  
 2 mentoring services, learning facilitators must deliver these services using the  
 3 appropriate tools and with positive feelings. The detailed descriptions of the  
 4 mentors' experiences presented in this paper as opposed to the experiences of  
 5 mentees, which are commonly presented in literature, although not in a virtual  
 6 setting as is done in this study, contribute to a holistic perspective and underscore a  
 7 side that, albeit neglected in literature, offers crucial insight for decision making.  
 8 Several implications emerge from this analysis. Firstly, both the mentors and the  
 9 mentees need to set expectations regarding timeliness in communication. In  
 10 addition, the mentor must ensure availability, confidentiality, and trustworthiness  
 11 so that the relationship between the mentor and the mentee is built on shared  
 12 communication as well as mutual respect and equality. Subsequently, mentors  
 13 need to personalise, contextualise and adapt their mentoring practices to individual  
 14 mentees, while ongoing training is probably the most crucial contributing factor to  
 15 a successful online peer education programme (Latino and Unite, 2012). With  
 16 intentional planning, a technology-mediated mentoring session which enhances  
 17 both social and cognitive congruence, can better prepare colleges for a possible  
 18 prevalence of online peer mentoring in the future.

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