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Teaching experience on online learning in higher education: Generational analysis

Ni Putu Adelia Kesumaningsari[1], Jatie K. Pudjibudojo[2], Maya Hilda Lestari Louk[3]
[1,2]Department of Psychology, Faculty of Psychology, University of Surabaya, Surabaya, Indonesia
[3]Department of Informatics Engineering, Faculty of Engineering, University of Surabaya, Surabaya, Indonesia

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ABSTRACT

A transition in learning model implementation occurred in higher education during the COVID-19 pandemic. Online learning answers the needs of long-distance learning. However, not all higher education institutions are thoroughly prepared for online learning. Therefore, this study aimed to understand the online learning experience at higher education institutions from the perspectives of multigenerational teaching staff. This study utilized mixed-method research through a quantitative and qualitative study. A total of 93 participants; male (n=40) and female (n=57) teaching staff filled out a research questionnaire consisting of closed and open questions about online learning. The data were analyzed using descriptive statistics and qualitative thematic analysis. The results indicated positive and negative contributions of the online learning process that affect the effectiveness of online learning according to multigenerational teaching staff perspectives. These findings contribute to the global discussion about the online learning process in higher education and recommend the usage of online learning for teaching staff across generations, complemented with an effective instructional design that would help provide a rigorous learning environment.

Corresponding Author:

Ni Putu Adelia Kesumaningsari
Department of Psychology, Faculty of Psychology, University of Surabaya
Tenggilis Mejoyo Street, Kali Rungkut, Rungkut District, Surabaya, East Java, Indonesia
Email: kesumaningsari@staff.ubaya.ac.id

1. INTRODUCTION

The COVID-19 pandemic has significantly changed the learning model in higher education. Conventional learning models are changing rapidly towards online learning models (internet-based online learning). Nearly half a billion students in various parts of the world undergo the learning process by distance mode [1]. This sudden change has resulted in a fast-paced adaptation of learning models and equipment to disrupt student learning. In addition, closures in various educational institutions in the early days of the pandemic have caused learning disruption or the loss of student convenience to gain substantial in-depth learning processes. In the long term, learning loss will be followed by the loss of theoretical and practical skills in students due to a non-optimal learning process, which impacts the productivity of a country's human resources [2].

Online learning has various definitions. In the meta-analysis study of various definitions of online learning literature, online learning is defined as a form of learning experience via the internet in synchronous classroom mode as a place for interaction between students with instructors and other students, and to take part in this learning does not depend on physical location. Online learning is a learning experience via the internet that may occur in asynchronous classes where students can interact with instructors and other

students at specific times determined based on convenience and do not require online or physical presence [3]. Thus, online learning can occur synchronously or asynchronously.

Distance learning through online media suddenly has several consequences on the educational process. Students, in this case, are forced to be able to adapt and adjust to a new learning environment, although in practice, online learning used conveys discomfort for the parties. A total of 21.3% of students reported experiencing mild anxiety, 2.7% moderate anxiety, and 0.9% experienced severe anxiety. This anxiety is closely correlated with changes in daily activities experienced and delayed or disrupted academic processes [4]. The online learning model requires students to regulate their motivation to study independently in front of the computer [5]. Later, the learning evaluation process has also changed to be carried out online, presenting several challenges: increased academic cheating among students, such as plagiarism or cheating [6]. Anxiety experienced by students increases plagiarism, and irresponsible behaviour indirectly interferes with learning trajectories and the learning process.

From the point of view of the teaching staff, the distance learning process poses its problems. Teachers do not have enough time to prepare for the online learning process. Besides preparing for the online learning process, the teaching staff needs to improve their competence in teaching online. Due to the lack of understanding and skills in running classes in the online learning model, online learning classes seem like just moving the face-to-face offline learning model into the online learning model. One of these impacts is the decline in students' learning engagement when studying online due to inappropriate instructional design. Research in England conducted on several educators in the first six weeks of lockdown reported the main feelings felt by teachers in dealing with this situation. The teachers interviewed made an analogy with their condition "Like a rug had been pulled from under you" [7]. The feelings that arise include feeling unsure of their ability to carry out distance education to answer students' academic and psychological needs. Their professional identity is also affected. Learning conditions that do not directly make them feel unable to transfer knowledge ideally as teachers. The condition affects their feeling and perception as good instructors. Besides that, the teaching staff also feel that online learning is not very effective, but on the other hand, online learning brings several benefits.

Online and face-to-face learning show different learning contexts, so the teaching efficacy perceived by teachers in online learning is also different. In contrast, teaching efficacy is crucial in teaching self, determining whether the teaching and learning process can run optimally [8]. Several studies have shown that the views and beliefs held by teachers regarding the teaching-learning process affect self-efficacy when teaching, which is a significant obstacle to using technology in an educational process. However, computers and technology use have increased, but not all teaching staff view technology as a tool that can respond to teaching and learning needs [9]. Constraints to use technology by teaching staff in online learning are also allegedly caused by their technological prowess. Online learning is dependent on technological equipment and the internet. The dependency of online learning on a technological device and the provision of the equipment was a big challenge not only for the learners but also for institutions and faculty [10]. Among the teaching staff, technological proficiency is somehow also affected by the generational cohort.

Generational classifications are Baby-boomers (born between 1946-1964), generation X (born between 1965-1981), and generation Y or millennials (born between 1982-1999). Each generation has unique values and different perceptions, attitudes, and behaviours. Furthermore, each generation has strong and weak characteristics and constitutes a form of a characteristic led by their value [11]. Therefore, unique life experiences in each generation might create potential links with their use of technology. There are significant differences in the technological use of the digital generation compared with the former ones. Generation X and Y are more fluent in the use of technology because the internet and similar forms of technology were always typically used during their life era, hence becoming natural parts of life [12]. This finding is not surprising since generation X is trying to adapt to technological development and its related changes during the rise of technology.

Meanwhile, generation Y is a generation born as digital natives, reflecting their preference to use digital media to communicate daily via video calls, internet, email, text message, and social media [13]; therefore, the technology used to become an integral part of life. However, the technology used might challenge the baby boomers' generation. Older workers resist the forced implementation of tools, including technology, if they think it is unnecessary or inappropriate [14]. Older individuals generally got more pressure to work effectively with technologies, learn new competencies through technology use, and understand how using technologies can assist the transition from traditional to modern interaction. This resistance according to the use of technology, for example, instant messaging used in educational environments [15].

According to the generational differences in literacy and digital proficiency mentioned above, the basic technology capabilities of multigenerational teaching staff in higher education will affect the views, experience, and each generation's engagement in delivering online materials. Moreover, online learning relies on technology such as a learning management system, and research has found differences in responses

between generations regarding online learning systems used. From the results of this study, millennials (generation Y) are a generation with technical capabilities for online learning, so they are more involved in interaction with other students compared with other generations, although they have less interaction with tutor lecturers. They are also more comfortable with online discussions but do not have an online learning experience [16]. Therefore, in this study, the researcher also suspects that online teaching experience will differ between generations of teaching staff, given the differences in proficiency in using the online learning system, resulting in different views, beliefs, and experiences in online learning. Based on the workforce, this generational stratum examined in this study is the baby boomers (born 1946-1964), generation X (born in 1965-1981), and generation Y or millennials (born in 1982-1999). In various studies, these three generations have different values at work [11].

Higher education digital transformation is a topical issue that needs to be concerned. These novel technologies might affect digital readiness, determined by digital competencies. Hence, the abilities to apply Information and Communication Technology (ICT) are on an incremental level. Thus, universities must prepare potential professionals to face challenges and provide solutions in online learning [17]. Based on the description above, the researcher wants to explore the description of the online learning experience carried out by teaching staff at higher education institutions from the baby boomer generation, generation X, and generation Y. There are two questions posed in this study, they are: i) What is the perception of the multigenerational teaching staff on the contribution of online learning to the teaching and learning process in higher education?; and i) How does multigenerational teaching staff in higher education feels while doing online learning?

2. RESEARCH METHOD

The research is an explorative study using mixed-method research that consisted of a quantitative survey on teaching staff perception due to online learning and a qualitative study on the psychological condition (feelings) of teaching staff in online learning. A total of 93 participants from a tertiary institution in Surabaya, Indonesia, participated in this study: male (n=40 people) and female (n=57 people) teaching staff aged 25–69 years. The sample is teaching staff from various faculties derived from stratified random sampling technique, namely random sampling from the age cohort strata, namely the baby boomers generation (n=13), generation X (n=42), and generation Y (n=38) from various faculties. Research participants were lecturers from various faculties, such as psychology faculty (n=30), engineering faculty (n=17), law faculty (n=11), business and economics faculty (n=7), pharmacy faculty (n=7), faculty of biotechnology (n=6), faculty of medicine (n=7), faculty of creative industries (n=7), and polytechnics (n=1).

This study collected data related to teaching staff perception due to online learning through an open and closed questionnaire. Closed questionnaires include survey questions regarding teaching staff perceptions of the contribution of online learning to the teaching and learning process adopted by teaching staff about distance education survey [18]. Research respondents responded to the statement by approving five response responses in close questionnaires, namely "Strongly agree," "Agree," "Neutral," "Disagree," and "Strongly disagree. The quantitative data were tabulated and analyzed by descriptive statistics. The statistical tests were performed using IBM SPSS Version 21.0 software.

Meanwhile, to understand the teaching staff's psychological condition when teaching online learning modes, participants were asked to fill out open questionnaires asking about their emotions while delivering online learning. Thematic analysis was used to identify common feeling elements across participants. Thematic analysis is a response analysis technique generally used to identify and regulate a response pattern into thematic naming according to the meaning of the response [19]. Thematic analysis followed the process of data familiarization, initial coding, theme identification, reviewing themes and sub-themes, and theme naming [20]. The initial codes were generated by the first author and then discussed with the co-authors. In the second stage of the coding process, 18 initial codes wore compressed into nine codes. The naming themes were done with an iterative process. Each author discussed participants' responses in interpreting the themes concerning teaching staff emotion during online learning. After completing the thematic codes about emotions that arise in lecturers during online learning, the researchers analyzed the frequency of the emotion themes across generations.

3. RESULTS AND DISCUSSION

The results of this study attempted to explain teaching staff perceptions of the online learning process in higher education. The teaching staff perceptions about online learning in higher education, in this case, are also reviewed from the perspective of between generations of teaching staff. The analysis was carried out descriptively on 93 respondents through a cross-tabulation test. In this study, the results of the

cross-tabulation test showed that teaching staff perception regarding online learning between the baby-boomers generation, generation X, and generation Y is not significantly different ($p>0.05$).

Table 1 shows that most participants were female, 57% (53 people). Most 45.2% (42 people) were generation X. The years of employment were varied; most 49.5% (46 people) were 0-10 years of employment, followed by 26-30 years of employment at 20.4% (19 people), 21-25 years of employment, 14% (13 people), 16-20 years of employment 10.8% (10 people), and 11-15 years of employment 5.4% (5 people). The majority of respondents were from the Faculty of Psychology at 32.3% (30 people). Most respondents had no experience delivering online learning before the pandemic COVID-19 was rising 65.6% (61 people). However, most respondents were already equipped with training related to online learning, such as a series of seminars or workshops 83.9% (78 people).

Table 1. Demographic data

No.	Demographic	Number (f)	Percentage (%)
1	**Gender**		
	Male	40	43
	Female	53	57
2	**Generation**		
	Gen baby boomers	13	14
	Gen X	42	45.2
	Gen Y	38	40.9
3	**Years of employment**		
	0–10 years	46	49.5
	11-15 years	5	5.4
	16-20 years	10	10.8
	21-25 years	13	14
	26-30 years	19	20.4
4	**Faculty**		
	Psychology	30	32.3
	Engineering	17	18.3
	Law	11	11.8
	Business and economics	7	7.5
	Pharmacy	7	7.5
	Biotechnology	6	6.5
	Medicine	7	7.5
	Creative industries	7	7.5
	Polytechnics	1	1.1
5	**Experience in delivering online learning before COVID-19**		
	Yes	32	34.4
	No	61	65.6
6	**Experience in receiving training related to conducting online learning (seminars, workshops)**		
	Yes	78	83.9
	No	15	16.1
	Total	100	100

The cross-tabulation results related to experience in delivering online learning before COVID-19 and online training experience shown in Table 2 indicate no significant difference between the baby boomer generation, gen X, and gen Y regarding the experience of online learning before COVID-19. Statistical analysis indicated that all the generations mostly had no experience conducting online learning with the students. However, a significant difference was found regarding their experience in receiving training related to conducting online learning ($p=0.006$, $p<0.05$). Most respondents who stated ever receiving training related to online learning were gen X with 47.7% (37 people), followed by gen Y with 43.6% (34 people). In contrast, most respondents who stated they have not yet joined any online learning training such as seminars or workshops were the baby-boomers generation with 40% (6 people). This result indicates that the baby boomer generation had less preparation and knowledge regarding online learning than other generation groups. Moreover, almost 75% of the baby boomer generation has never done teaching in online mode. This finding shows the opposite with gen X and gen Y. Although generation X and Y mostly had no experience conducting online learning before COVID-19, most of them have received or attended training related to online learning.

Table 2. Teaching staff experience related to the experience of online learning

Generation	Experience in delivering online learning before COVID-19		p	Experience in receiving training related to conducting online learning (seminars, workshops)		p
	Yes	No		Yes	No	
Baby-Boomers	3 (9.4%)	10 (16.4%)	0.539	7 (9%)	6 (40%)	0.006
X	14 (43.8%)	28 (45.9%)		37 (47.4%)	5 (33.3%)	
Y	15 (46.9%)	23 (37.7%)		34 (43.6%)	4 (26.7%)	
Total	32 (100%)	61 (100%)		78 (100%)	15 (100%)	

In terms of online learning readiness, the baby boomers are the generation with the lowest level of preparedness compared to generation X and Y. This can be seen from the lack of online teaching experience before pandemic COVID-19 compared with other generations. Moreover, baby boomers are the generation that has less participation in online learning training. Although the baby boomer generation is at least less prepared than other generations, their perception of online learning is not statistically different from other generations. Likewise for generation Y, although generation Y is the largest generation that already has experience teaching online, it turns out that the perception of online learning is also statistically no different from other generations. Likewise, generation X, the generation with the highest participation in online learning training, also shows no statistical difference in perception. These perceptions of online learning include teaching staff general views about the ease of online learning, feelings when conducting online classes, perceptions about the effectiveness of online classes, and views about the need for a different methodology to complement online learning. The multigenerational teaching staff's perception of online learning is discussed in the following discussion.

3.1. Teaching staff perception of the convenience of online learning

Almost all teaching staff perceive online learning as a comfortable teaching and learning process as shown in Table 3. Most respondents, 44.1%, agreed, and 12.9% strongly agreed that online learning provides convenience. Regarding the intergenerational cohort, most respondents in each group also agree that teaching online is convenient. Although the perception of the convenience of online learning was not significantly different across generations (p=0.938), some differences were seen in the distribution of percentages in the cross-tabulation. Specifically, generation X is the generation that most agrees (42.9%) and strongly agrees (16.7%) on the convenience of online learning compared to generation Y and the baby boomers generation, then followed by generation Y with a proportion of 47.4% answering agree and 10.5% strongly agree. The baby boomers generation is the generation with the proportion of answers that are not much different descriptively between agreeing, neutral, and disagreeing. This grey opinion shows that the convenience of online learning is hard to determine by the baby boomers.

According to the result, online learning is dominantly beneficial for generations X and Y. The different responses can be explained due to basic technological capabilities, and generations X and Y are more technologically capable than baby boomers [12]. Therefore, preparing and conducting online learning was more visible for generation X and Y. Online learning is perceived to be more practical and efficient than offline classes. Generation Y also feel that online learning benefits the students because it allows them to access the class recordings asynchronously. Besides the practicality, generation X and Y think online learning is beneficial because it supports them in fulfilling domestic tasks. A flexible teaching location supports their work-family task arrangement.

> *"You can teach from anywhere without changing classes if there are other activities. The asynchronous model is also convenient because students can learn at their own pace"* (Y, Male, 39 years, Faculty of Engineering)

> *"There is no need to go far to work even though it is complicated to divide time by accompanying children to study at home and do domestic tasks"* (X, Female, 50 years, Faculty of Psychology)

Table 3. Teaching staff perception of the convenience of online learning

Generation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	*p*
Baby boomers	0 (0%)	3 (23.1%)	4 (30.8%)	5 (38.5%)	1 (7.7%)	0.938
X	2 (4.8%)	5 (11.9%)	10 (23.8%)	18 (42.9%)	7 (16.7%)	
Y	1 (2.6%)	6 (15.8%)	9 (23.7%)	18 (47.4%)	4 (10.5%)	
Total	3 (3.2%)	14 (15.1%)	23 (24.7%)	41 (44.1%)	12 (12.9%)	

Convenience towards online learning can be defined as the convenience of time, place, and performance to perform a task when using technology [21]. Online learning allows teaching staff to conduct a class from various places. Another study also shows a similar result that the ease of online learning implementation becomes another benefit of online learning. The benefits of online learning were mainly low cost, convenience, and flexibility. Online learning also allows students to do self-learning [22]; hence the lecturers unnecessary meet the students virtually and have an opportunity to drop off the materials anytime. Therefore, technology provides flexibility for the learning arrangement of larger classes, suiting the students' needs [23]. Most studies reported that teachers' perception of online learning is positive due to the convenience of online learning tasks in time, place, and implementation, which increases the acceptance of-learning systems [24].

Another study also finds a similar result. A study in Indonesia has also analyzed that teacher positively perceive ease of use and usefulness of online learning [25]. Most studies reported that teachers' perception of online learning is positive due to the convenience of online learning tasks in time, place, and implementation, which increases the acceptance of e-learning systems [24]. Perceived usefulness drives online learning acceptance and adoption [26]. Moreover, online teaching helps the academic staff to arrange the fulfilment of work and domestic tasks. This reason somehow makes the academic staff think that helped by the advancement of ICTs and that online learning models are beneficial due to their flexibility. Along similar lines, research indicates that if employees can operate under flextime work schedules, the possibility of achieving work-life balance is higher than their counterparts who utilize traditional fixed-hour schedules [27]. The preceding discussion implies that the teaching staff's perception of online learning is positive due to its convenience and flexibility.

3.2. Teaching staff emotions during online learning

As online learning has become so integrated into the academic world but at the same time is also challenging, the researcher aims to understand the feeling of teaching staff when delivering online learning. Based on the cohort of generations, all generations show more positive than negative feelings toward online learning as revealed in Table 4. The most positive feeling experienced by most teaching staff is being motivated and comfortable delivering classes online. Comparatively, worry is the most negative feeling teaching staff experience regarding online learning. The awareness of teaching staff to ensure the delivery of materials to the students comes as the reason why teaching staff feel much more worried. Albeit the feelings of multigeneration are not statistically significant, each generation had specific feelings toward online learning, according to the qualitative study.

Table 4. The feeling of teaching staff doing online learning

Generation	Motivated	Comfortable	Confidence	Burdened	Not optimized	Tired	Depressed	Worried	Anxious
Baby-Boomers	3 (23.1%)	4 (30.8%)	0 (0%)	2 (15.4%)	0 (0%)	0 (0%)	0 (0%)	3 (23.1%)	1 (7.7%)
X	10 (23.8%)	11 (26.2%)	5 (11.9%)	3 (7.1%)	0 (0%)	0 (0%)	3 (7.1%)	8 (19%)	2 (4.8%)
Y	16 (42.1%)	6 (15.8%)	2 (5.3%)	4 (10.5%)	3 (7.9%)	1 (2.6%)	0 (0%)	6 (15.8%)	0 (0%)
Total	29 (31.2%)	21 (22.6%)	7 (7.5%)	9 (9.7%)	3 (3.2%)	1 (1.1%)	3 (3.2%)	17 (18.3%)	3 (3.2%)

p=0.269

The positive feeling felt by baby boomers is that they feel comfortable with online learning because they can freely express how to learn, but on the other hand, this online learning model is also considered worrying and becomes a burden due to the technology barriers and the perception of learning competencies. Those worrying and burdensome aspects present difficulties in achieving learning effectiveness. Learning competencies are not optimal, with limited interaction with students and the inhibition of the internet network, which often hinders the learning process.

> *"Because the internet network is not always smooth, the lectures are also not completed on time"* (Z, Male, 60 years, Faculty of Pharmacy)

> *"Learning effectiveness is competence, not just graduation"* (Z, Male, 61 years, Faculty of Business and Economics)

In generation X, the dominant feeling that appears is also a feeling of comfort with online learning, while the dominant-negative feeling that arises is a feeling of worry. The feeling of comfort is related to practicality, flexibility, and efficiency. Meanwhile, the most frequently expressed concern is whether the

material provided can be conveyed to students and absorbed effectively. Feelings of stress, anxiety, and burden are other negative feelings.

> *"Although many can adapt, I think there are some students who cannot concentrate in the teaching and learning process, and I find it difficult to be able to help one by one"* (A, Female, 47 years, Faculty of Biotechnology)

> *"This material related to human science needs to be exemplified by movement, facial expressions, and voice intonation. I feel anxious that students only grasp the surface but feel that they have fully grasped the meaning of the material"* (B, Male, 54 years, Faculty of Psychology)

In generation Y (millennials), the dominant feeling appears more positively. The dominant positive feeling is "feeling motivated". Online learning makes generation Y feel challenged to create creations that make students more involved in online learning. Another 15.8% feel comfortable with online learning.

> *"There are many challenges experienced by the teaching team when they are online, but these challenges can be a motivation for themselves to develop effective and efficient methods for teaching staff and students continuously. Whatever the lecturer gives, students will get a positive feedback if the lecturer can build good communication with students. Online is not a barrier for teaching staff to work and provide student services"* (C, Female, 31 years, Faculty of Law)

> *"I am motivated to always look for student innovations so that material delivery can be achieved well, as well as to keep trying to learn and explore any applications that can be used for teaching and learning activities. I have never done this during offline lectures, and it turns out that I have learned a lot of exciting things"* (D, Female, 31 years, Faculty of Pharmacy)

> *"I believe this is the system of the future, and this system also encourages me to learn new things that I might not have been interested in before, such as video editing and using google forms"* (E, Female, 37 years, Faculty of Technology)

In general, generation Y is a generation that feels more motivated when facing the online learning process than other generations. However, negative feelings during learning also include generation Y. Regarding the negative feelings, the dominant-negative feeling that arises is worry. These concerns included worrying that students felt burdened, worried about student understanding of learning material, unconfident that learning outcomes were maximally achieved, and worried that students would not benefit from the learning process.

> *"It is convenient, especially using the asynchronous method, because students' learning opportunities are open anytime. However, some teaching staff and students demand synchronous via video conferencing because the explanation is more straightforward and opens questions and answers. Meanwhile, during the video conference, I felt that the students were not interested in asking questions; instead, the class tends to be just a formality by muting voice and video even though it is the same if using video recording and delivered asynchronously. Even if you use asynchronous, there is a question, and answer forum and WA chat to answer every question"* (F, Male, 30 years, Faculty of Business and Economics)

> *"I am worried that students do not get good knowledge. Because several times I tested the students by sampling, it turned out that they did not understand the material I gave. Students also become very passive compared to offline classes because student cameras are often turned off; finally, as a lecturer, I cannot directly monitor whether the student in question is in the zoom room or not, even though every lecture, I also remind to turn on the camera. A sign that online learning is not very profitable is seen from the results of exams that are often copied and pasted through the internet or other student work. So, I think this is ineffective, and gradually I am also increasingly apathetic"* (G, Male, 28 years, Faculty of Law Lecturer)

The data appears to suggest that ensuring the understanding of students from instructional activities in online learning is challenging for multigeneration teaching staff. Teaching staff are worried about whether the students can receive and understand the materials optimally. There is growing literature on online

learning, which indicates that "learning loss" is one of the issues arising within all educational levels [28]. Learning loss is commonly used to describe student knowledge, and skills decline. Therefore, in terms of learning loss, most teaching staff are not sure that educational progress in online learning occurred at the same rate as face-to-face interaction.

3.3. Teaching staff perception of online learning effectiveness

Based on descriptive statistical analysis, although it creates psychological comfort for teaching staff in higher education because of its flexible and practical nature, not all teaching staff believes the online teaching and learning process is effective. This finding is in line with the responses given by respondents to open-ended questions as described previously. From the statistical analysis results, almost half of the respondents said online learning is more ineffective than offline learning as revealed in Table 5. Most respondents stated that they did not agree that online learning was as effective as offline learning; 32.3% disagreed and 10.8% strongly disagreed. This finding indicates that most educators in higher education think that the effectiveness of online learning is not as effective as offline learning. The lack of effectiveness of online learning can be understood from the lecturer's perspective regarding student engagement in online teaching and learning. The results of research on student involvement in online learning show that the online learning environment can encourage student involvement, for example, by increasing student reasoning activities. However, the traditional face-to-face learning process encourages collaborative learning processes, student-faculty interactions, effective teaching, improves the quality of interaction, and encourages active discussion [29].

Table 5. Teaching staff perceptions of online learning as effective as offline learning

Generation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	p
Baby boomers	0 (0%)	7 (53.8%)	2 (15.4%)	4 (30.8%)	0 (0%)	0.288
X	6 (14.3%)	10 (23.8%)	16 (38.1%)	8 (19%)	2(4.8%)	
Y	4 (10.5%)	13 (34.2%)	11 (28.9%)	10 (26.3%)	0 (0%)	
Total	10 (10.8%)	30 (32.3%)	29 (31.2%)	22 (23.7%)	2(2.2%)	

Although online learning is considered no more effective than offline learning, respondents still consider online learning to be valuable. Table 6 presents the cross-tabulation results regarding the benefits of online learning. When asked to respond to the questionnaire item "I think distance learning is not beneficial," most respondents expressed their disagreement. Specifically, 12.9% of respondents strongly disagree, 47.3% disagree, and 25.8% are neutral. This finding illustrates that most educators think online learning is a good learning process. Therefore, it is suspected that there are certain benefits felt by teaching staff, both in terms of personal and academic impact on students from the online teaching and learning process that has taken place.

Table 6. Teaching staff perception of the benefits of online learning

Generation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	p
Baby boomers	2 (15.4%)	6 (46.2%)	1 (7.7%)	4 (30.8%)	0 (0%)	0.182
X	5 (11.9%	18 (42.9%)	14 (33.3%)	5 (11.9%	0 (0%)	
Y	5 (13.2%)	20 (52.6%)	9 (23.7%)	2 (5.3%)	2 (5.3%)	
Total	12 (12.9%)	44 (47.3%)	24 (25.8%)	11 (11.8%)	2 (2.2%)	

Social and communicative interaction between student and teacher is essential for classroom learning. The dynamics of the learning process are established by students' ability to ask questions, share opinions, and disagree related issues. It can be achieved through active discussion, direct conversation, discourses, and debate among students and between teacher and students. Hence, the new concept can be clarified, an assumption can be challenged, skills can be practised, and learning objectives can be achieved. However, online learning requires several instructor adjustments to make the learning process effective. Nevertheless, on the other hand, direct communication often substitutes the interaction via discussion boards, synchronous chats, emails, and electronic bulletin boards [30]. Therefore, the virtual interactive venue seems to be a learning effectiveness barrier.

However, the effectiveness of the online learning process must be understood more comprehensively. Online teaching might also not be equally effective depending on the course. Research indicates that some educational programs may fit into an online setting, such as medical and physical education, but not the same in other educational programs [30]. Therefore, the result of research on the

effectiveness of online learning compared to offline learning vary widely. In several comparative studies of online learning among undergraduate students, there was a difference in the effectiveness of online and online learning. For instance, a study in India [31] among undergraduate medical students found that online learning improves students' ability to write prescriptions compared with textbook-based learning. According to the research, digital learning done by the students supports deeper and self-directed learning. In contrast, another study on medical students in South East Asia [32] found that offline learning is not as effective as combining online and offline learning as a teaching method. The preceding discussion implies that carefully designed and implemented online learning should need to be concerned in order to create effective online learning.

3.4. Teaching staff perception of student engagement during online learning

Learning engagement is a challenge in online learning. Online learning students are less involved in collaborative learning and discussion sessions. However, on the other hand, the students also felt that there was not enough exposure to effective teaching. The suboptimal quality of interaction is also an obstacle in online learning [29]. The quality of interaction is in line with respondents' assessments of student engagement as presented in Table 7. Most of the respondents expressed their disagreement that the presence of students in online learning was optimal (disagree 32.3%, disagree 11.8%). However, 38.7% of respondents did not determine whether student attendance was optimal during online learning. The results indicate that student engagement in online learning is challenging for educators to capture when teaching. The difficulty of reading student engagement in the teaching and learning process can also be seen in the respondents who answered "neutral" inattention to lecture material, namely 34.4% of the total respondents. On the other hand, online learning is also considered not to increase student activity, and the dynamic online learning process does not make students more active in contributing. 43% of respondents stated that they disagreed that students were more active when studying online than offline learning. Besides, 31.2% of respondents also felt that students did not pay enough attention to the material when learning online.

Table 7. Teaching staff perception of student engagement in online learning

Aspects of student engagement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Optimal student attendance	11 (11.8%)	30 (32.3%)	36 (38.7%)	13 (14%)	3 (3.2%)
More active when studying online than offline	15 (16.1%)	40 (43%)	25 (26.9%)	10 (10.8%)	3 (3.2%)
Just pay attention to the material when learning online	13 (14%)	29 (31.2%)	32 (34.4%)	17 (18.3%)	2 (2.2%)

These findings show a similar result to another study. Students are reported to be less likely to engage in collaborative learning and discussion and show a lower quality of interaction between friends or their lecturers [29]. Student involvement in online learning environments seems more behavioural than cognitive engagement. Behavioural engagement in online learning is reflected in users' behaviour toward the interface, such as clicking, navigating, submitting, and scrolling. In contrast, cognitive engagement is reflected by students thinking process at a deeper level and work through learning materials. Therefore, these types of engagement are not intrinsically connected. A student might engage in a learning management system platform and review the materials but not profoundly engage with it in a higher-level thinking process [33]. Students' engagement in online learning is affected by many factors. Self-motivation is essential and significantly contributes to cognitive engagement [34]. A web-based distance learning environment creates isolation and alienation between students, leading to frustration [34] and somehow affecting students' motivation for online learning.

According to the result, most teaching staff find it challenging to monitor their student engagement and learning progress during online learning. The inability to monitor student engagement in the online platform can be understood because teacher immediacy behaviour cannot ultimately occur in an online learning environment compared to face-to-face interaction in offline mode. In offline mode, providing immediate response to students is easy to monitor. According to LaRose and Whitten [35], teacher immediacy behaviour consists of social approval such as praising students, providing feedback and smiling. Another teacher's immediacy behaviour is status recognition (using personal examples, addressing the instructor by the first name). Another teacher's immediacy behaviour might be difficult to do in an online learning context by teaching staff because sometimes it demands physical activities. Social interests' behaviour, such as addressing students by name, monitoring the class, asking questions to students, and soliciting student opinions, are done virtually, and it is not possible to touch students physically, such as hands-on-shoulder touch. Furthermore, status enhancement (initiated out-of-class contact, moved around the

classroom, permitted digressions, used gestures, varied vocal expression) also can be an issue that cannot be done in the online setting.

3.5. Teaching staff opinions about the need for complementary methods during online learning

Online learning is a different learning alternative that offers novelty and creativity in teaching. Distance learning alone is not enough to create an effective learning process. The respondents' views can be seen from the ineffective learning process, most of whom agree that online learning is effective; it requires the support of other learning methods, for example, combining it with offline learning methods as shown in Table 8.

Table 8. The view that online learning requires the support of other learning methods

Generation	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	p
Baby boomers	1 (7.7%)	1 (7.7%)	3 (23.1%)	7 (53.8%)	1 (7.7%)	0.306
X	0 (0%)	2 (4.8%)	7 (16.7%)	21 (20.8%)	12 (11.7%)	
Y	0 (0%)	2 (5.3%)	5 (13.2%)	18 (47.4%)	13 (34.2%)	
Total	1 (1.15)	5 (5.4%)	15 (16.1%)	46 (49.5%)	26 (28%)	

Theoretically, various things can support the success of online learning. Factors supporting online learning success include management by higher education institutions, learning environment, instructional design, service support, and evaluation of learning programs. Other combinations of learning methods include modifications to the learning environment [30]. Less intimidating virtual space may complement traditional classrooms to enhance students' participation. Instructors may design additional online discussion modules (by using discussion boards) to extend participation opportunities for students who are not ready for direct discussion in the classroom [31]. This approach is predicted to enhance the quality of student participation, where the past studies show that an online setting may encourage in-depth and reasoned discussion [32]. Moreover, complementary methods in online learning should consider the exogenous factors that may interfere with learning effectiveness. The exogenous variables, in this case, are instructor, course content, assignment, and teaching objectives [31].

4. CONCLUSION

This study described the online teaching experience of multigeneration university teaching staff. Generally, the perception of online learning across generations is not statistically different, but specific patterns were found. This study indicated that the online learning model provides several benefits and advantages for the educational process, although educators still doubt its effectiveness. Doubts about this effectiveness can be related to the teacher's assessment of student engagement in the teaching and learning process, such as whether student attendance indicates optimal absorption of information, students' attention to the material taught during the teaching and learning process, and also the level of active participation of students in class. Psychologically, teaching online evokes more positive than negative emotions across generations of teaching staff. These positive emotions include feeling motivated, comfortable, and confident. On the other hand, the negative emotions educators feel are more about worries about not being able to deliver the materials optimally, which confirms that educators still feel that delivering material online is not as optimal as it should be compared to delivering material offline.

These quantitative descriptive findings provide input to stakeholders in the higher education environment, including students, educators, and institutions, regarding the effectiveness of online learning. Therefore, institutions are expected to improve their online learning implementation strategy so that educators can perceive it as more effective, including increasing student engagement using a learning management system. Furthermore, considering in this case that online learning is profitable and provides convenience because of its practical and flexible nature, lecturers need to identify the learning designs that have been carried out so far, evaluate them, and create the most effective online learning designs to optimize the online learning process. Institutions can support teaching staff to increase the effectiveness and engagement of students with reliable-interactive technological infrastructure and pedagogical training regarding online learning for all lecturers across generations.

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BIOGRAPHIES OF AUTHORS

Ni Putu Adelia Kesumaningsari is a lecturer, Course Coordinator for Developmental Psychology, Faculty of Psychology, University of Surabaya, Indonesia. She teaches cyberpsychology, developmental psychology, and education for the exceptional learner. In 2017, she obtained her Master's Degree (In developmental psychology) from Maastricht University, the Netherlands. Her research area is cyberpsychology and the relationship between human development and technology. She can be contacted at email: kesumaningsari@staff.ubaya.ac.id.

Jatie K. Pudjibudojo is a lecturer and professor from the Department of Developmental Psychology, Faculty of Psychology, University of Surabaya. She had her Bachelor's, Master's, and Doctoral Degree from the University of Gadjah Mada, Yogyakarta. Her research focused on developmental psychology, psychosocial aspects of human development, and family psychology. She has worked on numerous research and community projects with national and international institutions. She can be contacted at email: jatiekpudjibudojo@yahoo.co.id.

Maya Hilda Lestari Louk is a lecturer, Program Coordinator for Network Cyber & Security, Department of Informatics Engineering, Faculty of Engineering, University of Surabaya. She had her Master's Degree (Ubiquitous Computing) from Dongseo University, Busan, South Korea, in 2015. She can be contacted at email: mayalouk@staff.ubaya.ac.id.