

Online Education during the COVID Pandemic (2020-2022)

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Abstract

The global shift to online learning during the Covid-19 pandemic presented challenges for education systems worldwide, with varying degrees of adaptation observed among different nations. This research focuses on online education's impact on teachers and students in Germany, examining their experiences and difficulties during the pandemic. Through a qualitative approach and electronic literature review, this study investigates two primary questions: firstly, how online education has affected German teachers' abilities to instruct and conceptualize study material, and secondly, the extent to which German students have been impacted by the sudden transition from traditional to digital learning methods. Findings suggest that while online education has significantly influenced students' learning success in Germany, more research is needed to comprehensively understand its effects on teachers' instructional abilities. Recommendations include efforts to enhance the accessibility and engagement of online education for German students, alongside further research to explore the relationship between online teaching methods and teachers' effectiveness in instruction.

Keywords: Online, Education, COVID

1. Introduction

During Covid 19, the whole globe was forced to shift from conventional study methods to online learning, where some nations adopted the strategies wisely, while others still lag behind.

The pandemic was not just a huge blow to the global economy in shape of inflation, termination of jobs, food and energy crisis, but also troubled almost every student and teacher in one way or the other. With varying levels of digital literacy, the European countries had to face many challenges during this difficult time. This research is relatable for an average student anywhere

in the world, but is specifically conducted on students and teachers in Germany, and their difficulties during the pandemic.

The research focuses on the following two questions:

1. Has online education affected German teachers and their abilities to instruct and conceptualize overall study material?
2. Are German students impacted by the sudden shift of learning methods from traditional ones to digital ones?

2. Literature Review

Recent studies have shown that gender and age vary overall adaptability to digital education. The reason is that older students e.g. postgraduate disciplines have difficulty in moving from traditional study methods to online learning and hence show less flexibility, sometimes resulting in delays or total failure in subject grasp. (Hoss, Ancina and Kaspar, 2022).

Not only have students shown less flexibility, but emotional and psychological factors are also great hindrances. The reason is, not everyone can afford a digital infrastructure at home for online education, and so financial burdens, time management and self-regulation, all have collectively caused anxiety among students. Even teachers are not free from the shackles of digital illiteracy; senior professors cling to conventional teaching and research methods, showing less or no adaptability to this sudden change in mode of teaching. (Zawacki - Richter, 2020)

German students say they feel less engaged, and sometimes even “zoned out” during online lectures, whereby webinars and online classes could not replace the actual classroom aesthetics. Some have even reported losing interest in studies altogether, with planning to halt academic activities till schools get back to normal. Hence adaptability and overall acceptance are not affected only in older students but young ones alike. (Engel et al., 2023)

Retaining students’ attention and participation is yet another concern for German tutors. As digital learning takes its toll, teachers have colossal complaints of students engaging in online gaming, socializing apps and even watching live streamed TV shows while attending online lectures. Some students are hesitant to ask questions because they find face to face interaction more comfortable. Still others are distracted by outside noises, or simple glitches in Wi-Fi connection, leading to overall substandard quality of online classes.. (Sonnenburg, Buddeberg and Hornberg, 2022)

Teachers have also complained about little or no access to personal digital setups. Online research requires not only stable internet connections but also up to date laptops and PCs, which many instructors were devoid of. Hence lecture preparation was problematic for instructors nationwide. (Letzel, Pozas and Schneider, 2020)

3. Methodology

In order to conduct this study, qualitative research has been chosen. An electronic literature review was conducted with keywords for search as “learning success”, “online education in Germany”, “digitalization and German students”, “digital education and German teachers” were considered. Articles from 2020 to 2023 were reviewed and studied and data was deduced accordingly as COVID 19 lockdown started in March 2020 and it’s academic after affects had been evident till 2023. Only those journals were considered, which were available in full text. Considering inclusion criteria, 5 articles were considered, studied and cited.

4. Results

According to the research questions, the following hypotheses can be deduced:

1. **For Q1: H_{0q1} :** There is no relationship between the digitalization of education and the abilities of German teachers to instruct and conceptualize overall study material.
 - **H_{1q1} :** Online education has affected German teachers and their abilities to instruct and conceptualize overall study material.

Here dependent variables are Student engagement(x_1), Student adaptability(x_2), teachers’ flexibility (x_3) preparation of lectures (x_4) and easy access to study material(x_5). The independent variable is online education(y).

2. **For Q2: H_{0q2} :** There is no relationship between German students’ learning success and sudden shift of learning methods from traditional ones to digital
 - **H_{1q2} :** German students are impacted by the sudden shift of learning methods from traditional ones to digital.

Here dependent variables are Students’ flexibility(x_1), Student engagement (x_2), Students’ participation (x_3), Access to study material (x_4) and teachers’ flexibility(x_5). The independent variable is online education(y).

The independent variable is online education(y). Hence Q1 and Q2 both have 5 dependent variables whereas. Considering the literature review, the following results have been deduced: The themes that were analyzed in these articles were: (here n is the number of times the theme was discussed or highlighted per study) (N is the total number of studies which is 5 in this case)

Sr.	Themes	Frequency =n	Proportion of research
1	Student flexibility/adaptability	3	$3/5 = 0.6 = 60\%$
2	Student engagement	3	$3/5 = 0.6 = 60\%$
3	Teachers’ flexibility	2	$2/5 = 0.4 = 40\%$

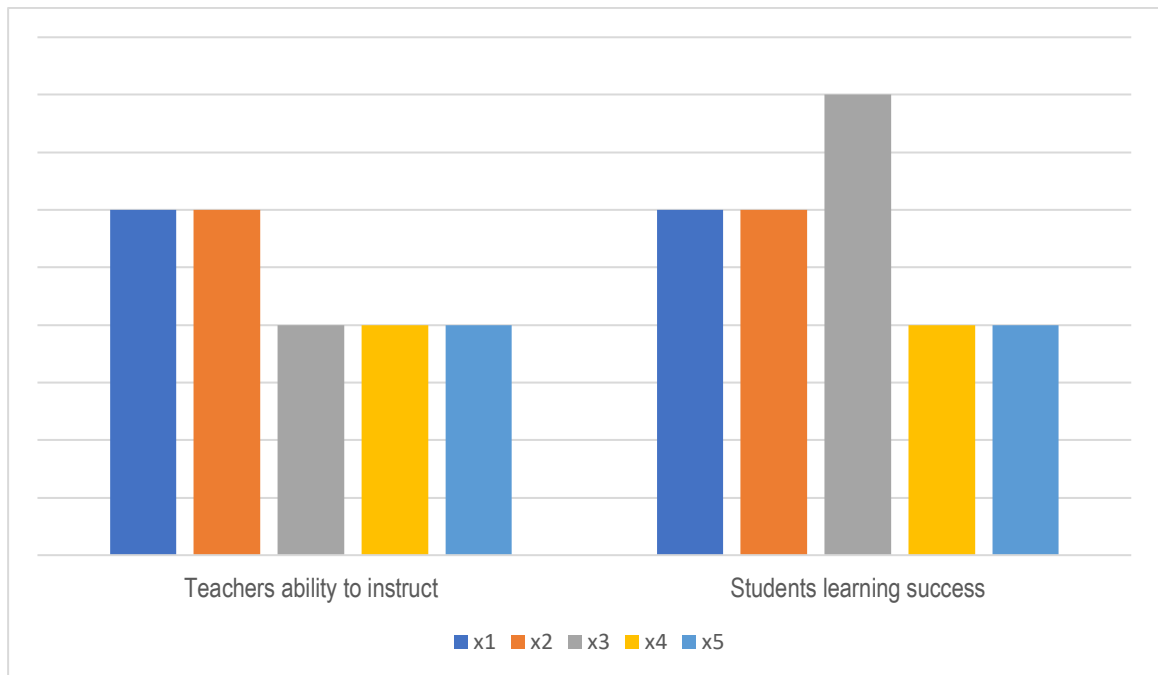
4	Preparation of lectures	2	$2/5 = 0.4 = 40\%$
5	Students' participation	4	$4/5 = 0.8 = 80\%$
6	Easy access to study material	2	$2/5 = 0.4 = 40\%$

Table 1: Results. *Source: authors.*

Findings and Results summary:

- According to literature review, 60% of the data deduced has talked about the inverse relationship of online education and student flexibility and adaptability. The more the students are exposed to online learning methods, the less they have shown flexibility and adaptability in the long run. As the % is sufficiently high, this is a strong dependent variable
- According to literature review, 60% of the data deduced has talked about the direct relationship of online education and student engagement. The more the students are exposed to digital learning, the less they are seen engaged in acquiring knowledge. As the % sufficiently high, this is a strong dependent variable.
- According to literature review, 40% of the data deduced has talked about the inverse relationship of online learning methods in Germany and teachers showing flexibility to such methods. The more the teachers are exposed to digital teaching methods, the less they have shown flexibility. As the % is not sufficiently high, this is a not a strong dependent variable.
- According to literature review, 40% of the data deduced has talked about the inverse relationship of online teaching methods and easy preparation of lectures. The more the teachers are exposed to online teaching methods, the more difficult it has become to prepare lectures and deliver them. As the % is not sufficiently high, this is a not a strong dependent variable.
- According to literature review, 80% of the data deduced has talked about the inverse relationship of online teaching methods and students' overall participation. The more the students are exposed to online teaching methods, the more difficult it has become for them to participate and take interest. As the % is sufficiently high, this is a strong dependent variable.
- According to literature review, 40% of the data deduced has talked about the inverse relationship of online education and easy access to study material. The more the online education is instilled in German school systems, the less easy it is to access material for students. As the % is not sufficiently high, this is a not a strong dependent variable.

Figure 1: Impact of online education on overall study success in Germany during Pandemic 19.



Source: authors.

Graphically, it can be clearly seen that dependent variables of teachers ability to instruct are not changing to a large extent with changes in the independent variable implying that online education in Germany has not largely impacted teachers' abilities to instruct and teach in the long run. Similarly, the dependent variables of question no.2, i.e., students' learning success in Germany, are changing to a large extent with the changes in the independent variable implying that online learning methods in Germany have impacted students' study success to a large extent.

Hence, the above data clearly shows that 2 out of 5 dependent variables have a strong relationship with the independent variable, hence accepting the null hypothesis (H_{0Q1}) and rejecting the alternative hypothesis (H_{1Q1}) for research question no.1. Similarly, only 3 out of 5 dependent variables show strong relationship with the independent variable, hence rejecting the null hypothesis (H_{0Q2}) and accepting the alternative hypothesis (H_{1Q2}) for research question no.2.

5. Conclusion and Recommendations

Hence to conclude it can be said that prior researches have proved a strong relationship between online education methods and students' learning success in Germany. However, more research and efforts are needed to reveal effects of online education and German teachers' abilities to instruct and impart knowledge.

The online sphere was also affected and facilitated by the pandemic of COVID-19 as Vrba and Linhart present in their research paper focusing on Sovereignty during the COVID-19 Pandemic (Vrba, Linhart, 2020).

In relation to the research the following recommendations can be drafted:

1. Keeping this research in view, efforts shall be made for German students to make online education not only accessible but also interesting and engaging.
2. However, extensive research needs to be done in order to study in depth relationship of online educating methods in Germany and ability of German teachers to instruct and teach effectively.

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