



جامعة مصر للمعلوماتية
EGYPT UNIVERSITY
OF INFORMATICS

Egypt University of Informatics
Computer and Information Systems
Data Analysis Course

The Analysis of the Performance of Data Analysis Students

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Introduction

Online learning has emerged as a prominent feature in the educational landscape, affecting a diverse range of learners across various demographics, disciplines, and geographical locations. This mode of education encompasses a wide array of digital platforms and approaches, including synchronous and asynchronous courses, webinars, and virtual classrooms. The impact of online learning on student engagement and academic performance is a critical area of inquiry, as it can influence students' motivation, participation, comprehension, and overall educational outcomes. The purpose of this paper is to explore the relationship between online learning and these key aspects of student success, as well as to address potential challenges and limitations in the research methodology and data analysis.

Research Question

Exploring the Impact of Online Learning on Student Engagement and Academic Performance

Hypothesis

Students who engage in online learning environments are more likely to exhibit higher levels of academic performance and engagement compared to those who participate in traditional face-to-face educational settings

Population of Interest:

Students & people involved in the learning process

Sampling Method:

Sampling Method: Convenience sampling was used in this study, as it was the most practical and cost-effective way to gather data from students who have experienced online learning. Data was collected through online surveys. While this sampling method may introduce some bias, steps were taken to minimize potential sources of bias.

*Taking into consideration that the sample size is small *

Bias Identification:

To minimize potential sources of bias, I took several steps in designing the survey. First, I collected data from a diverse group of participants to ensure that the results are representative of the population. second, I included questions that were designed to identify potential sources of bias, such as social desirability bias and response bias. Finally, I reviewed the survey questions with a team of experts to ensure that they were clear, unbiased, and sensitive to the needs of domestic violence survivors

Survey Questions:

1. How often do you participate in online classes?
2. On a scale of 1 to 5, how engaging do you find online classes compared to traditional in-person classes?
3. Do you feel that online classes have affected your academic performance positively, negatively, or not at all?
4. How satisfied are you with the level of interaction and communication with your professors in online classes?
5. Do you think online learning has improved your self-discipline and time management skills?
6. Overall, how would you rate your online learning experience?

Online survey link:

https://docs.google.com/forms/d/e/1FAIpQLScyMXr7tf1mZwT5kt5VuAuxdg2vp-9LcjD1cyAo_jOppH5SMQ/viewform?usp=sf_link

Number of samples collected: 30

Analysis:

My analysis showed that out of the participants who engaged in online classes, 40% participated rarely, while 16.7% never participated at all. Additionally, 16.7% of the students participated 2-3 times a week, 13.3% participated daily, and another 13.3% participated once a week.

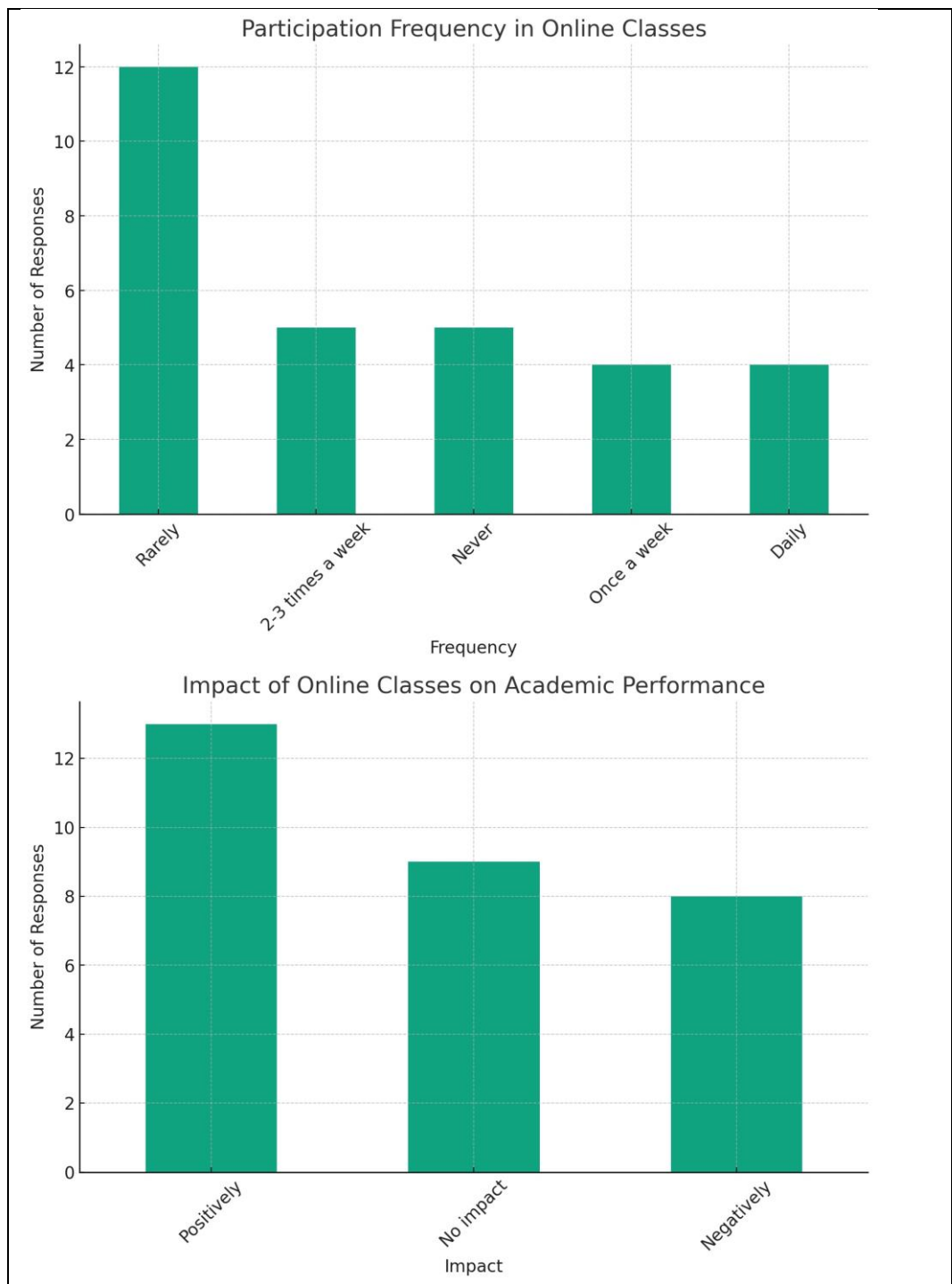
When asked about the engagement level of online classes compared to traditional in-person classes on a scale of 1 to 5, 20% of the respondents rated it as 1 (not engaging at all), 26.7% rated it as 2, 20% rated it as 3, 16.7% rated it as 4, and another 16.7% rated it as 5 (very engaging).

Regarding the impact of online classes on academic performance, 43.3% of the students felt that it had a positive effect, 30% felt no impact, and 26.7% felt it had a negative effect.

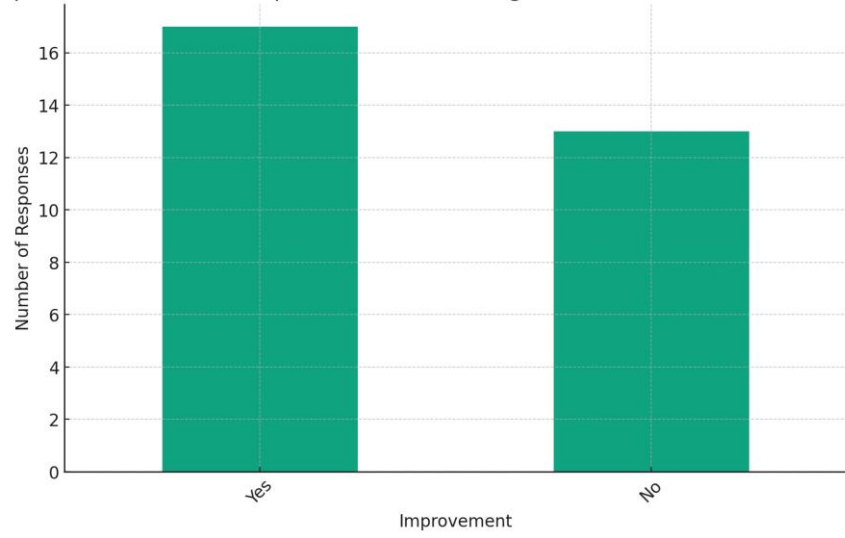
In terms of satisfaction with the level of interaction and communication with professors in online classes, 16.7% of the students were very satisfied, 36.7% were satisfied, 26.7% were neutral, 13.3% were dissatisfied, and 6.7% were very dissatisfied.

When asked if online learning had improved their self-discipline and time management skills, 56.7% of the respondents answered yes, while 43.3% answered no.

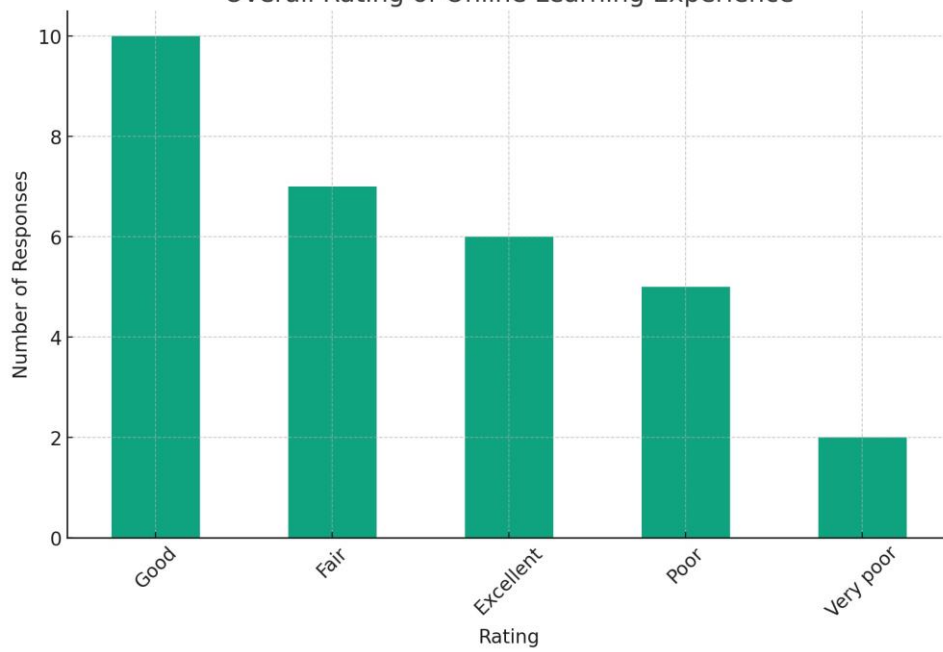
Overall, the participants rated their online learning experience as follows: 20% excellent, 33.3% good, 23.3% fair, 16.7% poor, and 6.7% very poor.

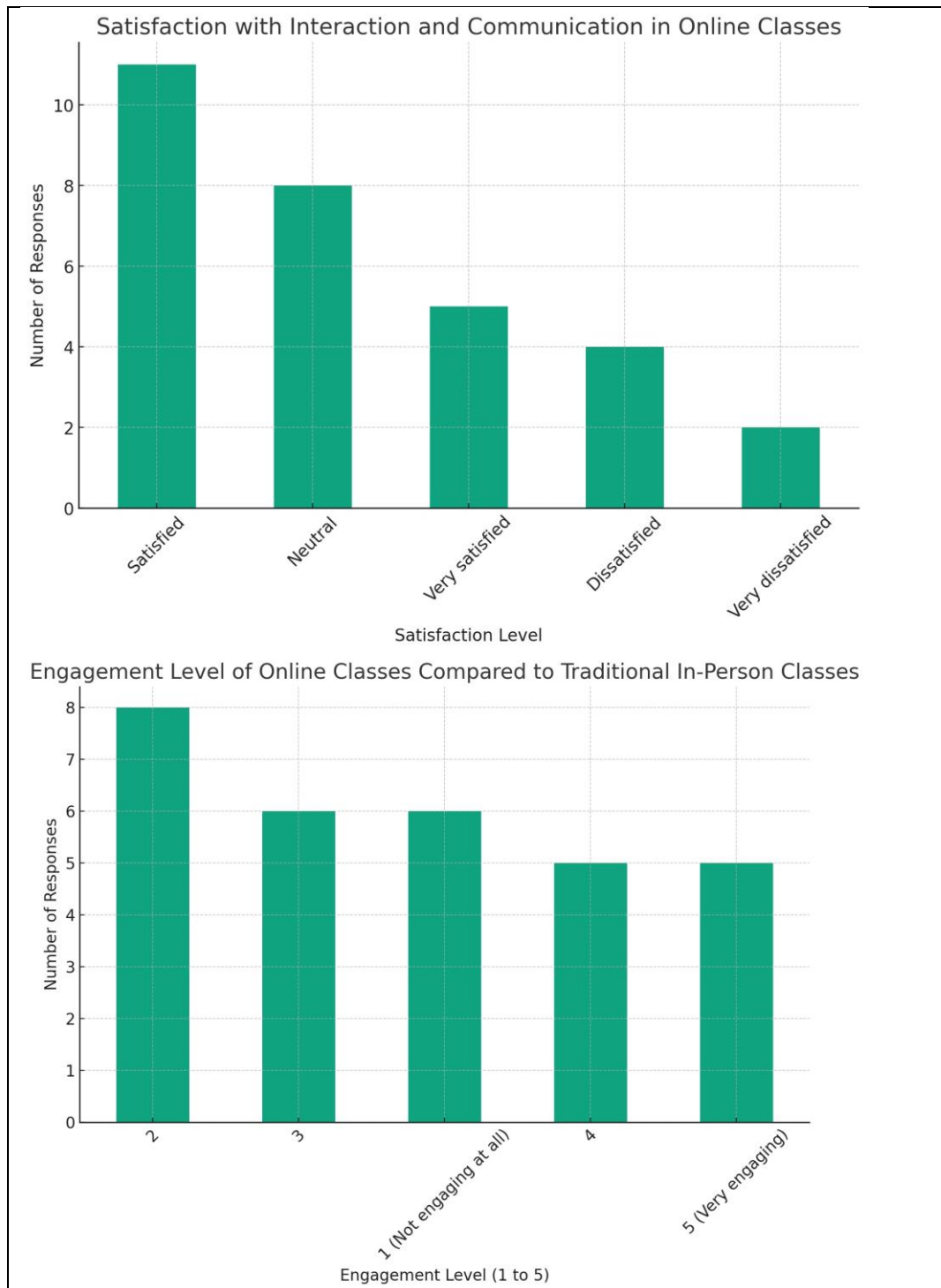


Improvement in Self-Discipline and Time Management Skills Due to Online Learning



Overall Rating of Online Learning Experience





Conclusion

- **Participation Frequency:** A significant portion of respondents participate in online classes rarely or never, indicating that online learning may not be the primary mode of education for many students.
- **Engagement Level:** A majority of respondents find online classes less engaging than traditional in-person classes, with a considerable number rating them as not engaging at all or only slightly engaging.

- **Academic Performance:** The impact of online classes on academic performance is mixed, with a slight majority reporting a positive impact, but a notable percentage also experiencing a negative impact.
- **Interaction and Communication:** Satisfaction levels with interaction and communication in online classes vary, with a significant number of respondents feeling neutral or dissatisfied.
- **Self-Discipline and Time Management:** More than half of the respondents believe that online learning has improved their self-discipline and time management skills.
- **Overall Experience:** The overall rating of online learning experiences is generally positive, with most respondents rating it as fair, good, or excellent

Any potential issues

1. **Sampling Bias:** The convenience sampling method used in the survey may introduce bias, as it may not accurately represent the broader population of students engaged in online learning.
2. **Limited Sample Size:** The sample size of the survey may be too small to draw definitive conclusions about the impact of online learning on a larger scale.
3. **Subjectivity:** The responses to the survey questions are subjective and based on personal perceptions, which may not accurately reflect objective measures of engagement, academic performance, and satisfaction.
4. **Lack of Context:** The survey does not provide context about the type of online classes, the subjects being taught, or the quality of the online learning platforms, which could influence the responses.