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## Utilization of Google Apps to Improve the Quality of Services for Organizing the Undergraduate Thesis Defense Registration at the Department of Physics, Universitas Gadjah Mada, Yogyakarta, Indonesia

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### ABSTRACT

#### Background

The COVID-19 pandemic has significantly impacted education administration services at the Department of Physics, Faculty of Mathematics and Natural Sciences (FMIPA), Universitas Gadjah Mada. Many administrative processes that were previously conducted offline had to transition to online platforms.

#### Purpose

This study aims to examine the use of Google Apps in improving the quality of education administration services, specifically in the undergraduate thesis defense registration and graduation process.

#### Design/method/approach

The research employs a **descriptive qualitative** approach, utilizing **literature review** as the data collection technique.

#### Results

The implementation of Google Apps allowed students and administrators to streamline administrative tasks, making processes more effective, efficient, and cost-saving. Google Apps provide features such as online document sharing, group management, task management, calendars, and high-capacity emails. These services enable students to complete the thesis defense registration process more conveniently and help administrators manage their tasks more efficiently.

#### Contribution/value

The adoption of Google Apps supports the university's efforts in successfully implementing digital transformation in education administration. It enhances the efficiency of academic services, reduces costs, and provides a more accessible and flexible system for both students and administrative staff.

#### Article History

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#### Keywords:

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Administration  
Services, Digital  
Transformation,  
Google Apps,  
Undergraduate Thesis  
Defense



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## **INTRODUCTION**

Information and communication technology used in collecting, processing, storing, and reporting academic data is now an obligation for institutions, including higher education institutions (Vial, 2019; Hess et al., 2016). The rapid development of information technology is also accelerated by the internet, which is utilized by higher education institutions (Alenezi & Akour, 2023; Alenezi, 2021; Dacholfany et al., 2021; Kraus et al., 2021; Kuzu, 2020) such as several universities in Indonesia to improve administration quality to support effective and efficient organization. Thus, the rapid development of this technology encourages digital transformation (Alenezi & Akour, 2023; Ding et al., 2020).

The Department of Physics, FMIPA UGM, Yogyakarta, Indonesia has one mission, namely developing resources, organization and governance, and sustainable supporting facilities with the aim of developing resources, organization, and management that are just, transparent, participatory, and accountable to support the effectiveness and efficiency of resource utilization, based on an integrated information technology system to support the implementation of an adaptive learning process towards Industry 4.0 (Strategic Plan for Department of Physics, FMIPA UGM, 2018). From explaining one of the missions and objectives, this department encourages digital transformation in organization and governance, including online administration management services for this department's academic community, especially students.

The COVID-19 pandemic has caused significant changes in education administration services in higher education (Putra et al., 2023; Ausat, 2022; Marks et al., 2020; Rivera, 2020), including in the Department of Physics, FMIPA UGM, which has caused many transitions from many off-network activities to online activities. This phenomenon encourages this department to increase the efficiency of education administration services, especially for students. At the same time, there is also a process of moving large amounts of data from desktop to desktop from mobile to mobile (McCarthy et al., 2023; Dacholfany et al., 2021). With this transition, education administration management must change the traditional/paper-based way of working by switching to digital transformation. One of the changes in student education administration services that have transformed the COVID-19 pandemic is the registration procedure for undergraduate thesis defense.

Since the COVID-19 pandemic, the Department of Physics, FMIPA UGM, Yogyakarta, Indonesia has provided online work management services, which are easily accessed by computer or smartphone (Amez & Baert, 2020), namely Google Apps (Andrew, 2019; Ishtaiwa- Tran, 2017; Al-Emran & Malik, 2016; Dweikat & Aburezeq, 2016; Owayid & Uden, 2014). Before using Google Apps, the registration procedure for undergraduate thesis defense was still paper-based or photocopying files, and students needed to come to the Department and Faculty. Therefore, this paper-based procedure is less effective and efficient because it takes a long time and costs more.

Google Apps is one of Google's online application-based products that provides online work management services (Andrew, 2019; Ishtaiwa-Dweikat & Aburezeq, 2016; Owayid & Uden, 2014). As an online service, Google Apps is easy to use, effective, and efficient in driving digital transformation in the Department of Physics, FMIPA UGM. Apart from that,

Google Apps services are cloud computing technology (Andrew, 2019; Tran, 2017; Al-Emran & Malik, 2016; Ishtaiwa-Dweikat & Aburezeq, 2016; Owayid & Uden, 2014) where users can reach Google Apps services anywhere and anytime via the internet. Google Apps services can be accessed for free at a low cost. This Google Apps service can make it easier to share projects ranging from online documents, group management, task management, calendars, and emails with large capacity. Several Google Apps have features that make it easier to manage administrative services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar (Andrew, 2019; Al-Emran & Malik, 2016; Ishtaiwa-Dweikat & Aburezeq, 2016; Owayid & Uden, 2014).

The Google Apps services are used to register for undergraduate thesis defense at the Department of Physics, FMIPA UGM. They can encourage digital transformation, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar (Awwad et al., 2022). Google Forms is a component of the Google Docs (Adelia et al., 2021; Andrew, 2019; Wiemken et al., 2018) service for learning assessment; easy to access, free to use, easy to operate, and sufficiently developed as a learning process evaluation tool (Adelia et al., 2021; Raju & Harinarayana, 2016). Google Forms is also one of the best alternatives as an effective and easy-to-use learning assessment tool during the COVID-19 pandemic. Google Forms can be connected to Google spreadsheets. If the spreadsheet is associated with an automated response form, the response will be sent to the spreadsheet. Otherwise, users can view their responses in "Response Summary," accessed from the Responses menu (Utami, 2021). Moreover, spreadsheet programs, including Microsoft Excel and Google Sheets, are valuable tools for entering, organizing, and saving data (Broman & Woo, 2018). Meanwhile, Google Drive is a free service from Google with word processing and presentation components, allowing multiple authors to work together in real-time. Google Drive has version control permission-based sharing and instant messaging features to increase collaboration potential (Ishtaiwa-Dweikat & Aburezeq, 2016; Rowe et al., 2013). This application comes from Google Docs and has a free storage capacity of 15 gigabytes (GB). Google Drive is also integrated with other Google services such as Gmail accounts, Google Plus, Google Search, and others (Jupriyadi et al., 2022). Lastly, Google Calendar, as a web-based calendar, memory aid, and reminder system, has been developed as a time management service that helps users optimize their work time to be more productive (Baric et al., 2019; Raharja et al., 2018; McDonald et al., 2011).

In this review, the author examined the use of Google Apps services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, as one of the changes in education administration services for the students which have undergone a digital transformation since the Covid-19 pandemic to improve the quality of services for administering an undergraduate thesis defense process for students at the Department of Physics, FMIPA UGM. Thus, the author wants to contribute to providing a strategy for implementing digital transformation to complete one of the administrative tasks at UGM in general and the Department of Physics, FMIPA UGM in particular. The research method uses descriptive qualitative research with data collection techniques using literature studies and

is equipped with screen capture data on procedures for administering an undergraduate thesis defense process.

**LITERATURE REVIEW**

Relevant research, both qualitative and quantitative research, regarding the use of Google Apps services as a means of online administration management in various education organizations has been carried out by several researchers. The researchers have studied the analysis of the use of Google Apps services in school institutions (Awwad et al., 2022; Nugroho et al., 2021; Ishtaiwa-Dweikat & Aburezeq, 2016). Other researchers have been studied for course institutions (Andrew, 2019) and researchers for higher education institutions (Al-Emran & Malik, 2016; Owayid & Uden, 2014), respectively. Research related to the use of several Google Apps services in secondary schools and universities has been carried out by several researchers, such as Google Forms (Heryadi, 2021; Adelia et al., 2021; Iqbal et al., 2018), Google Spreadsheet (Broman & Woo, 2018; Handayani et al., 2017), Google Drive (Trilaksono et al., 2018; Warsito & Yuliandini, 2017; Rowe et al., 2013), and Google Calendar (Baric et al., 2019; Raharja et al., 2018; McDonald et al., 2011).

**METHOD**

The research method uses qualitative descriptive research with data collection techniques using literature studies and library study listening techniques, where one of the listening techniques is note-taking. The note-taking technique is a data collection technique that uses books, literature, or library materials, then takes notes or quotes experts' opinions in the books to strengthen the theoretical basis for writing scientific articles (Ulum et al., 2019). Furthermore, the data presentation provides screen capture data on procedures for holding undergraduate thesis defense and student judicial registration. A schematic illustration of this research can be seen in Figure 1.

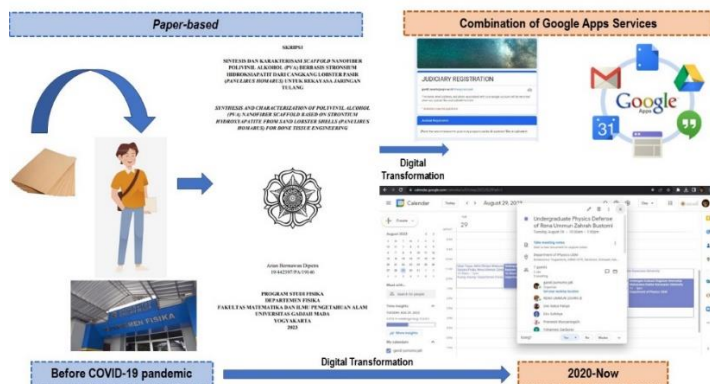


Figure 1. Illustration of Holding an Undergraduate Thesis Defense Registration Process for Students at the Department of Physics, FMIPA UGM, Using a Combination of Google Apps Services

Qualitative research describes the actual situation of the phenomenon of the object being studied and compares it with the theory appropriate to the problem being studied. So,

research produces descriptive data in written or verbal data from people and observed behavior (Aspers & Corte, 2019). From this qualitative research design, the author can describe the stages of the research procedure (Figure 2).

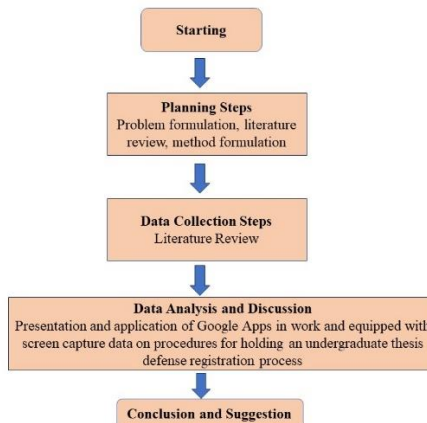


Figure 2. Research Procedure

## RESULTS

The author examines the use of Google Apps services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, as one of the changes in student education administration services which have undergone a digital transformation since the COVID-19 pandemic to improve the quality of services for administering an undergraduate thesis defense of bachelor student in Department of Physics, FMIPA, UGM.

### Procedures for Organizing Undergraduate Thesis Defense

The procedure for holding the undergraduate thesis defense of a bachelor student at the Department of Physics, FMIPA UGM, using a combination of Google Apps services, can be seen in Figures 3-7.

1. Students register for the undergraduate thesis defense via **Email:** [gandi\\_nasuha@ugm.ac.id](mailto:gandi_nasuha@ugm.ac.id)

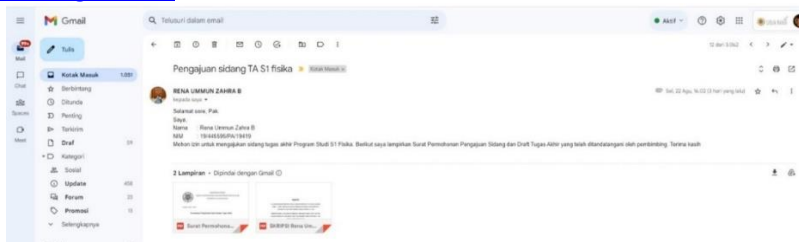


Figure 3. Example of a Screenshot of the UGM Email for Undergraduate Thesis Defense Registration for Students at the Department of Physics, FMIPA, UGM

2. The administrator of the Undergraduate Physics Program, Department of Physics, FMIPA, UGM, will process this by creating a private admin WhatsApp group for the testing team to agree on a schedule.

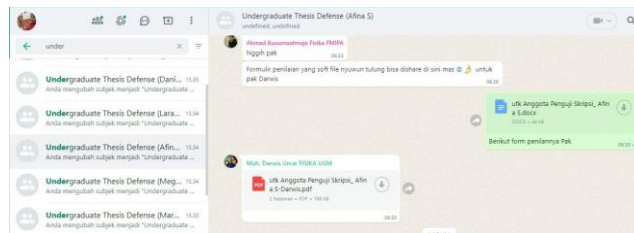


Figure 4. Example Screenshot of WhatsApp Group for Undergraduate Students' Thesis Examination at the Department of Physics, FMIPA, UGM

3. The administrator processes the invitations, which will be distributed via the UGM Gmail account to students and the thesis examining team. Then, he uses **Google Calendar** to distribute invitations and other supporting files and notifications/reminders.



Figure 5. Example of a Screenshot of an Undergraduate Thesis Defense Invitation via Google Calendar

4. After the exam has been carried out and the student has completed the revision, the revised manuscript is sent back via the admin email, and the grades will be issued to the UGM student's SIMASTER account (<https://simaster.ugm.ac.id/>).

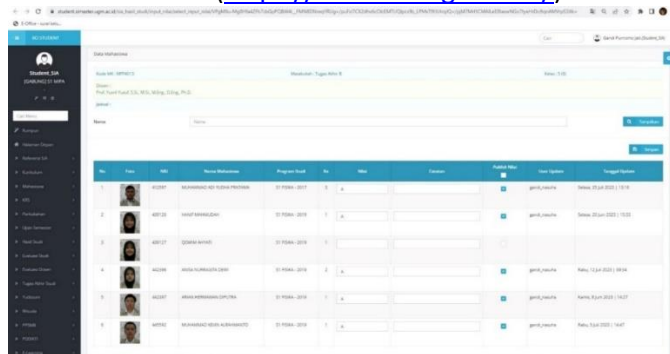


Figure 6. Example of a screenshot of the UGM Simaster Display Regarding Thesis Grades for Undergraduate Student

7. After the defense process, the administrator provides the undergraduate thesis exam file as a soft file, which is entered into **Google Drive** for further processing by the financial administration.

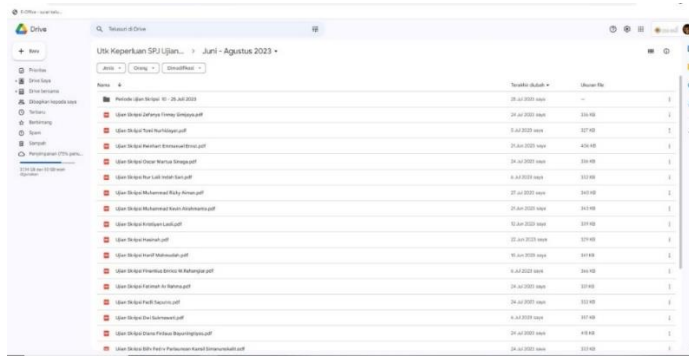


Figure 7. Example of a Google Drive Display Screenshot for Financial Administration Purposes

### Registration Procedure for Undergraduate Student Graduation

The graduation registration procedure for undergraduate students at the Department of Physics, FMIPA, UGM, can be seen in Figures 8-9.

1. Undergraduate students register for graduation by completing the requirements (Table 2) set, then filling in the Google form with the required soft files.

Table 2. List of Graduation Requirements Files for the Undergraduate Physics Study Program, Departement of Physics, FMIPA, UGM

No	Files	Link Source	Detailed Information
1	Completely revised and signed undergraduate thesis manuscript		Upload to Google Form: <a href="https://forms.gle/ue3bd8HesUqnC">ugm.id/YudisiumS1</a> and send to Email: <a href="mailto:gandi_nasuha@ugm.ac.id">gandi_nasuha@ugm.ac.id</a>
2	Undergraduate thesis guidance control card	<a href="#">KARTU KENDALI PEMBIMBINGAN TUGAS AKHIR.docx</a>	Sent to Email: <a href="mailto:gandi_nasuha@ugm.ac.id">gandi_nasuha@ugm.ac.id</a> The requirement needs a minimum of ten online meetings/communications. Only signed by the supervisor, the head of the study program is left blank.
3	Registration history	It can be downloaded in UGM SIMASTER ( <a href="https://simaster.ugm.ac.id/">https://simaster.ugm.ac.id/</a> ).	Sent to Email: <a href="mailto:gandi_nasuha@ugm.ac.id">gandi_nasuha@ugm.ac.id</a>
4	Final assignment undergraduate thesis defense minutes	The staff of the Physics study program will send it before the defense.	
5	Certificate of freedom to borrow in Laboratory of Atomic and Nuclear Physics, Department of Physics, FMIPA, UGM	Contact Mr. Rizqi (Laboratory Staff) through WhatsApp Number: 085328787383 and fill in Google Form Link: <a href="https://forms.gle/ue3bd8HesUqnC">https://forms.gle/ue3bd8HesUqnC</a> <a href="#">FNE6</a>	Upload to Google Form: <a href="https://forms.gle/ue3bd8HesUqnC">ugm.id/YudisiumS1</a>

No	Files	Link Source	Detailed Information
6	Certificate of freedom to borrow in Laboratory of Basic Physics, Department of Physics, FMIPA, UGM	<a href="https://forms.gle/dRxYZcRqwGU5HmFM8">https://forms.gle/dRxYZcRqwGU5HmFM8</a>	Uploaded to: ugm.id/YudisiumS1
7	Certificate of freedom to borrow in Laboratory of Materials and Instrumentation Physics, Department of Physics, FMIPA, UGM	<a href="http://ugm.id/bebaslabfismatelmasacov19">http://ugm.id/bebaslabfismatelmasacov19</a>	Uploaded to: ugm.id/YudisiumS1
8	Certificate of freedom to borrow in Laboratory of Geophysics	<a href="http://ugm.id/BebasPinjamGeofisika">http://ugm.id/BebasPinjamGeofisika</a> Contact Mr. Catur Joko through WhatsApp Number: 085747482738	Uploaded to: ugm.id/YudisiumS1
9	Certificate of freedom to borrow in Integrated Laboratory for Research and Testing (LPPT), UGM	Contact LPPT by WhatsApp: 082328276111 or Email: lppt_info@mail.ugm.ac.id	Uploaded to: ugm.id/YudisiumS1
10	Certificate of exemption from the FMIPA UGM Library	The guide file can be seen at <a href="https://lib.mipa.ugm.ac.id/">https://lib.mipa.ugm.ac.id/</a> in the section announcement.	Uploaded to: ugm.id/YudisiumS1
11	Receipt Letter for submitting undergraduate thesis soft file in the FMIPA UGM Library.	The guide file can be seen at <a href="https://lib.mipa.ugm.ac.id/">https://lib.mipa.ugm.ac.id/</a> in the section announcement	Uploaded to: ugm.id/YudisiumS1
12	Certificate of exemption from the UGM Library.	The guide file can be seen at <a href="http://lib.ugm.ac.id/ind/?page_id=7830">http://lib.ugm.ac.id/ind/?page_id=7830</a> and <a href="http://lib.ugm.ac.id/ind/?page_id=1701">http://lib.ugm.ac.id/ind/?page_id=1701</a>	Uploaded to: ugm.id/YudisiumS1
13	Receipt Letter for submitting undergraduate thesis soft file in the UGM Library.	The guide file can be seen at <a href="http://lib.ugm.ac.id/ind/?page_id=7830">http://lib.ugm.ac.id/ind/?page_id=7830</a> and <a href="http://lib.ugm.ac.id/ind/?page_id=1701">http://lib.ugm.ac.id/ind/?page_id=1701</a>	-
14	Graduation Application Letter	<a href="http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc">http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc</a>	-
15	Transcripts	It can be downloaded in SIMASTER ( <a href="https://simaster.ugm.ac.id/">https://simaster.ugm.ac.id/</a> )	-
16	Study result card from first to last semester	It can be downloaded in SIMASTER ( <a href="https://simaster.ugm.ac.id/">https://simaster.ugm.ac.id/</a> )	-

No	Files	Link Source	Detailed Information
17	Elective course cancellation form	<a href="http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc">http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc</a>	-
18	Recapitulation of study results	<a href="http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc">http://mipa.ugm.ac.id/download/banko/FormPersyaratan-Yudisium.doc</a>	-
19	Student profile from the Student Affairs Section of FMIPA UGM	Academic Division of FMIPA UGM	-

2. Data records of students who register for the graduation will appear in the following Google Spreadsheet.

Program Studi	Timestamp	Email Address	Nama ( lengkap)	NIM ( lengkap)	No HP (WA)	Dosen Pembimbing TA/T	Tanggal Ujian SKI
S2 Fisika	04/04/2020 1:40:33	zaenulmukhlisin@mail.ugm.ac.id	M Zaenul Mukhlisin	18/433746/PPA/05561	082136195212	Mirza Satriawan, S.Si, M.Si, Ph.D	23/
Profdi S1 Fisika	09/04/2020 13:38:03	catur.nursamsiyah@mail.ugm.ac.id	Catur Nursamsiyah	15/379596/PA/16654	085655431737	Drs. Gede Bayu Suparta Dr. dh. Soedarmanto Inc	10/
Profdi S1 Geofisika	13/04/2020 11:56:56	umba.nyura.l@gmail.com	Umbu Nyura Leorento	13/349850/PA/15590	089653864195	Dr. Eddy Hartantyo, M.Si Dr. rer. nat. Ade Angrair	28/
Profdi S2 Fisika	23/04/2020 21:58:48	zaenulmukhlisin@mail.ugm.ac.id	M Zaenul Mukhlisin	18/433746/PPA/05561	082136195212	Mirza Satriawan, M.Si,Ph.D	23/
Profdi S1 Fisika	27/04/2020 12:58:01	rath.dwi@gmail.com	Rath Dwi Cahyaningrum	15/379603/PA/16661	085701579993	Prof. Dr. Harjojo, S.U., M.Sc	07/
Profdi S2 Fisika	19/06/2020 9:07:48	antio.h@gmail.com	Antio Hoerunisa	17/422214/PPA/05524	082243743118	Prof. Dr. Siyanto, M.Si	19/
Profdi S2 Fisika	18/06/2020 11:22:50	ika.maulita@mail.ugm.ac.id	Ika Maulita	18/403695/PPA/05682	085641601661	Prof. Dr. Siyanto, M.Si	07/
Profdi S2 Fisika	18/06/2020 12:48:20	nurul.imani@gmail.com	Nurul Imani Idrisipamah	18/433753/PPA/05565	085729686611	Dr. Edil Suharyadi, M.Eng	27/
Profdi S2 Fisika	18/06/2020 13:51:36	muhannad.anshory@gmail.com	Muhammad Anshory	18/433751/PPA/05566	08964226054	Dr. Moh. Adhik Lili Abisoe	04/
Profdi S2 Fisika	18/06/2020 14:27:58	juharni@mail.ugm.ac.id	Juharni	18/433744/PPA/05559	085331493419	Dr. Edil Suharyadi	06/
Profdi S2 Fisika	19/06/2020 8:18:56	juharni@mail.ugm.ac.id	Juharni	18/433744/PPA/05559	085331493419	Dr. Edil Suharyadi	06/
Profdi S1 Fisika	19/06/2020 9:51:17	vnovita@mail.ugm.ac.id	NOVITA SARI	16/398463/PA/17424	089522477773	Dr. Eng. Yusril Yusuf	02/
Profdi S2 Fisika	20/06/2020 9:37:42	huda.n@mail.ugm.ac.id	Huda Nasrulloh	18/433741/PPA/05556	085642956214	Dr. Ariel Hermanto, S.U., Romy Hanang S. B., M.S	18/

Figure 8. Example of a Screenshot of the Google Spreadsheet Administrator Display of the Results of Filling out Google Forms for Graduation Registration by Students

## DISCUSSION

### The Use of Google Apps Services in School Institutions

The testing of pre-service teachers' proficiency, use, and perceptions about the benefits and barriers of using Google Apps to support teaching and learning practices has been carried out by researchers (Ishtaiwa-Dweikat & Aburezeq, 2016) using quantitative and qualitative methods. The study's results stated that almost two-thirds (63%) of the participants were advanced or expert users of Google Apps, while nearly a quarter (24%) reported having a medium experience and 13% reported having a bad experience. The research results also stated that participants mostly used Google Apps for communication, backing up and sharing data, and accessing teaching materials. However, their use of Google Apps is hampered by several barriers, such as lack of access to technology, increased workload, lack of collaboration skills, plagiarism, and lack of integration skills.

The introduction and training on using Google Apps for online learning during the COVID-19 pandemic at the Joshua Bangun Bangsa Foundation was carried out by researchers (Nugroho et al., 2021). The Joshua Bangun Bangsa Foundation, which operates in the education sector, realizes the importance of using the Internet to improve student learning achievement. Using Google Apps to optimize online learning during this pandemic is very important so that it meets the standards set by the school. By utilizing current technology, students' online learning process will be maximized.

Researchers (Awwad et al., 2022) have studied how implementing Google Apps in educational institutions affects student achievement. The results of this research show an urgency in implementing online learning media to achieve learning goals and improve communication between faculty members and students, which is the main goal of the learning process. Google Apps is important in facing the challenges of educational goals in the 21st century, and fundamental transformation must be directed at the application of information technology in teaching, research, learning, and management. The use of Google Apps in education influences student achievement and the development of social skills that are not available in traditional knowledge.

#### **The Use of Google Apps Services for Course Institution**

The researcher (Andrew, 2019) have been studied for course institutions. The researcher has carried out related research responding to the need to integrate new forms of technology in language learning classrooms to enhance learning and equip students with technology to prepare them for their professional future. This study aimed to investigate students' attitudes towards performing various language learning tasks on Google applications, explore some of the advantages and limitations of using Google applications as a cloud-based collaborative tool, and investigate students' behavior when collaborating on Google applications. Surveys and interviews were used with 31 participants of a pre-university EAP course in the UAE to explore students' perceptions of using four Google applications (Sheets, Slides, Docs, and Forms) to perform various language learning tasks. Participants reported benefits of collaborating on Google apps, such as ease of use, working together from different places, and being able to provide feedback online. Regarding behavior, participants showed a tendency to divide work when collaborating.

#### **Investigating the Impact of Google Apps on Higher Education Institutions**

Research aimed at investigating the impact of Google Apps in the workplace from the perspective of higher education institutions has been carried out by researchers (Al-Emran & Malik, 2016). Thirty-four research participants, including academic and administrative staff at Al Buraimi University College, Oman, carried out the data collection process. Different statistical analysis tests were carried out on the collected data. The research showed that administrative staff were more positive about using Google Apps than academic staff. In contrast, 58.8% of academics used Google Apps to process their work. The results of this research show that Google Apps is highly accepted by both academic and administrative staff. This proves that this application significantly impacts work in a higher education institution.

A qualitative analysis of the use of Google Apps in higher education has been carried out by researchers (Owayid & Uden, 2014). This research investigates the use of Google Apps services (Mail, Docs/Drive, Calendar, and Sites) as an online administration service among the department's administrative staff and the use of Google Apps services between academic staff and students at ABC education institutions. This research aims to determine whether there are significant differences in the use of Google Apps services by staff and students. The study revealed that although administrative staff often use Google Apps services, students do not. The results also show significant differences.

### **The use of several Google Apps Services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, in Secondary Schools and Universities**

#### *Utilization of Google Forms Services as a Learning Medium and Assessment Instrument*

The researcher has used Google Forms as an online learning medium during the COVID-19 pandemic in history subjects at SMK Negeri 2 Ketapang (Heryadi, 2021). The use of Google Forms on the Influence of Islamic Religion and Culture in Indonesia was effective, with the percentage of students participating in online learning activities amounting to 90%. The assessment of student knowledge in online history learning is prepared using the Google Forms application in the form of multiple-choice questions via Google Forms. There was an increase in the percentage of students' learning outcomes by 30% before and after using the Google Forms application. Before online learning using the Google Forms application, students whose knowledge score was complete in the Minimum Completeness Criteria (KKM) was only 50%. After online learning, the Google Forms application increased by 30%, reaching 80%.

Understanding all readers' need to know the development of assessment tools in English Language Teaching (ELT), especially in terms of the use of Google Classroom during the current COVID-19 pandemic, has been studied by researchers (Adelia et al., 2021). The study includes the advantages of Google Forms, ways to overcome obstacles to using Google Forms, and empirical studies regarding Google Forms as an assessment tool in ELT. Therefore, Indonesian language teachers must carefully design worksheets in Google Forms format for optimal assessment.

Researchers (Iqbal et al., 2018) researched using Google Forms to give assignments for introductory social science courses. The research results reveal that using Google Forms can provide an alternative for the lecturer team in organizing course assignments based on the Indonesian National Qualifications Framework (KKNI). The advantages of using Google Forms are that it is effective, efficient, interactive, and minimizes paper use. Meanwhile, the problem/weakness in using it is when the internet connection is not working well or is interrupted.

Google Spreadsheet, one of the spreadsheet programs, is a valuable tool for entering, organizing, and saving data. Focusing on aspects of data entry and storage, articles that offer practical recommendations for managing spreadsheet data to reduce errors and facilitate later analysis have been analyzed by researchers (Broman & Woo, 2018). Spreadsheet programs can also be used for calculations, analysis, and visualization. Still, the authors have focused on the data organization aspect here, and they encourage users interested in

performing calculations or creating data visualizations in spreadsheets to keep their primary data files original and just data and to perform calculations and visualizations in separate files.

Researchers have used Google Spreadsheets to create dashboards on the official site iFacility in higher education (Handayani et al., 2017). With the development of sophisticated information technology, iFacility, one of the official sites at Raharja College, has not yet implemented a dashboard. Therefore, implementing the AC reporting dashboard on the official site iFacility uses one of Google's features, Google Spreadsheet, which can accommodate data and process the data to become the required information. The identification stages of research implementation were done using observation, interviews with the operations division, system comparison, prototype design, and system implementation on the official site iFacility. iFacility is a place that can provide useful information and get information quickly and precisely to act or decide effectively and efficiently about facilities managed online.

The effectiveness of using Google Drive as a storage medium among students using the information system success model approach consisting of Information Quality, System Quality, and Service Quality has been carried out by researchers (Trilaksono et al., 2018). The research results show that the information system success model significantly influences Satisfaction through the factors of Information Quality, System Quality, and Service Quality. Service Quality and System Quality are the variables that most effectively affect Satisfaction, with correlation coefficient values of 67.8% and 66.5%, respectively.

Researchers (Warsito & Yuliandini, 2017) have researched the application of Google Drive as a storage medium for lecture materials to support Mobile App applications. The process of developing information systems for teaching materials in higher education currently still uses its server, so the costs that must be incurred will be even greater because if there is a problem with the server, server maintenance requires competent human resources (HR), but the costs incurred very expensively. As times have entered the era of modernization, all applications have switched to mobile-based applications. Thus, this research also tries to design and implement how teaching materials can be applied to smartphone applications. This research will conduct trials using Google Drive as the data server to reduce high costs. Meanwhile, students can use the application created in this research to learn and quickly get information on teaching materials because they are already on their smartphones.

Researchers (Rowe et al., 2013) have analyzed using Google Drive to facilitate a unified approach to authentic learning. By using technology in learning experiences with students in the classroom, educators can create opportunities to develop the thinking patterns students need to participate in complex real-world situations. The authors use authentic learning as a framework to guide the implementation of a case-based blended module in a South African physiotherapy department. Google Drive is a collaborative online writing medium where small groups of students use clinical cases to create their content, then guided by a team of facilitators. This paper examines an innovative approach to clinical education using authentic learning as a guiding framework and Google Drive as an

implementation platform. Researchers believe this approach encourages the transformation of students' learning practices, changes power relationships in the classroom, and facilitates the development of students' critical attitudes.

Researchers (Baric et al., 2019) have analyzed using Google Drive to facilitate a unified approach to authentic learning. By implementing technology in learning experiences with students in the classroom, educators can encourage the development of thinking patterns that students need to participate in complex real-world situations. The authors use authentic learning as a framework to guide the implementation of a case-based blended module in a South African physiotherapy department. Google Drive is a collaborative online writing medium where small groups of students analyze clinical cases independently, then guided by a team of facilitators. This paper examines an innovative approach to clinical education using authentic learning as a guiding framework and Google Drive as an implementation platform. Researchers believe this approach encourages the transformation of students' learning practices, changes power relationships in the classroom, and facilitates the development of students' critical attitudes.

Researchers have been scheduling the agenda for implementing the tridharma of higher education online using Google Calendar (Baric et al., 2019). Online scheduling using Google Calendar is an application in the form of a digital calendar that can be used to create schedules and remind users. In connection with the Tridharma activities in higher education, this helps students not to forget their assignments. Because each student period changes, the Google Calendar can adjust to changes, starting in terms of the interface and features added by Google every time there is an update.

Based on a review of several studies above, a combination of Google Apps services is needed for online administrative management, which has experienced digital transformation since the COVID-19 pandemic, especially in higher education. Thus, researchers will focus on studying the use of Google Apps services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, as one of the changes in education administration services to improve the quality of services for administering an undergraduate thesis defense for students at the Department of Physics, FMIPA, UGM.

## **CONCLUSION**

Based on the review, the use of Google Apps services, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, can improve the quality of services for administering undergraduate thesis defense and more effective graduation registration for students at the Department of Physics, FMIPA UGM, efficient, and low cost. Besides that, using Google services can make it easier for administrators to manage administration online.

The author realizes there are still shortcomings in using Google Apps services from UGM, including Google Forms, Google Spreadsheet, Google Drive, and Google Calendar, such as storage capacity, which is still limited to around 50 GB. The author can provide suggestions for administration services at UGM in the future, namely developing an application system with the same function as Google Apps with higher capacity so that UGM has authority.

## REFERENCES

- Adelia., Miftahurrahmah., Nurpathonah., Zaindanu, Y., & Taufik Ihsan, M. (2021). *The role of google form as an assessment tool in elt: critical review of the literature*. 1(1), 58–66. <https://doi.org/10.51574/ijrer.v1i1.49>
- Al-Emran, M., & Malik, S. I. (2016). The impact of google apps at work: Higher educational perspective. *International Journal of Interactive Mobile Technologies*, 10(4), 85–88. <https://doi.org/10.3991/ijim.v10i4.6181>
- Alenezi, M. (2021). Deep dive into digital transformation in higher education institutions. *Education Sciences*, 11(12), 770. <https://doi.org/10.3390/educsci11120770>
- Alenezi, M., & Akour, M. (2023). Digital transformation blueprint in higher education: A case study of PSU. *Sustainability (Switzerland)*, 15(10), 8204. <https://doi.org/10.3390/su15108204>
- Amez, S., & Baert, S. (2020). Smartphone use and academic performance: A literature review. *International Journal of Educational Research*, 103, 101618. <https://doi.org/10.1016/j.ijer.2020.101618>
- Andrew, M. (2019). Collaborating online with four different Google Apps: Benefits to learning and usefulness for future work. *Journal of Asia TEFL*, 16(4), 1268–1288. <https://doi.org/10.18823/asiatefl.2019.16.4.13.1268>
- Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, 42(2), 139–160. <https://doi.org/10.1007/s11133-019-9413-7>
- Ausat, A. M. A. (2022). Positive impact of the covid-19 pandemic on the world of education. *Jurnal Pendidikan*, 23(2), 107–117. <https://doi.org/10.33830/jp.v23i2.3048.2022>
- Awwad, A., Hoorani, A., & Abo Mokh, A. (2022). The impact of employing Google Apps in education on students' achievement. In *Lecture Notes in Educational Technology* (pp. 75–86). Springer Science and Business Media Deutschland GmbH. [https://doi.org/10.1007/978-981-19-0101-0\\_7](https://doi.org/10.1007/978-981-19-0101-0_7)
- Baric, V., Andreassen, M., Öhman, A., & Hemmingsson, H. (2019). Using an interactive digital calendar with mobile phone reminders by senior people - A focus group study. *BMC Geriatrics*, 19(1), 1–11. <https://doi.org/10.1186/s12877-019-1128-9>
- Bican, P. M., & Brem, A. (2020). Digital business model, digital transformation, digital entrepreneurship: is there a sustainable “digital”? *Sustainability (Switzerland)*, 12(13), 5239. <https://doi.org/10.3390/su12135239>
- Bondar, S., Hsu, J. C., Pfouga, A., & Stjepandić, J. (2017). Agile digital transformation of System-of-Systems architecture models using Zachman framework. *Journal of Industrial Information Integration*, 7, 33–43. <https://doi.org/10.1016/j.jii.2017.03.001>
- Broman, K. W., & Woo, K. H. (2018). Data organization in spreadsheets. *American Statistician*, 72(1), 2–10. <https://doi.org/10.1080/00031305.2017.1375989>
- Dacholfany, M. I., Noor, T. R., Diana, E., Nurzen. S, M., & Prayoga, D. (2021). Identification of higher education administration applications efforts to improve digital-based academic services. *Linguistics and Culture Review*, 5(S2), 1402–1414. <https://doi.org/10.21744/lingcure.v5ns2.1948>

- Ding, D., Guan, C., Chan, C. M. L., & Liu, W. (2020). Building stock market resilience through digital transformation: using Google trends to analyze the impact of COVID-19 pandemic. *Frontiers of Business Research in China*, 14(1). <https://doi.org/10.1186/s11782-020-00089-z>
- Evans, N., & Price, J. (2020). Development of a holistic model for the management of an enterprise's information assets. *International Journal of Information Management*, 54, 102193. <https://doi.org/10.1016/j.ijinfomgt.2020.102193>.
- Hadiono, K., Murti, H., & Santi, R.C.N (2021). Transformasi digital di masa pandemi Covid-19. *Proceeding SENDIU* 2021. 573–578. <https://www.researchgate.net/publication/353555507>
- Handayani, I., Kusumahati, H., & Nurul Badriah, A. (2017). Pemanfaatan Google Spreadsheet sebagai media pembuatan dashboard pada Official Site iFacility di perguruan tinggi. *Jurnal Ilmiah SISFOTENIKA*, 7(2), 177–186. <http://dx.doi.org/10.30700/jst.v7i2.155>
- Heryadi. (2021). Penggunaan Google Forms sebagai Media pembelajaran daring di masa Pandemi Covid-19 pada mata pelajaran Sejarah di SMK Negeri 2 Ketapang. *Jurnal Pendidikan dan Ilmu Sejarah*. 1(1), 14–24. <http://dx.doi.org/10.26418/swadesi.v2i1.45421>.
- Hess, T., Matt, C., Benlian, A., & Wiesböck, F. (2016). Options for formulating a digital transformation Strategy. *MIS Quarterly Executive*, 15(2), 103–119. <https://www.researchgate.net/publication/291349362>.
- Horváth, D., & Szabó, R. Z. (2019). Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities? *Technological Forecasting and Social Change*, 146, 119–132. <https://doi.org/10.1016/j.techfore.2019.05.021>
- Iqbal, M., Khair Amal, B., & Eva Rumapea, M. (2018). Penggunaan Google Forms sebagai media pemberian tugas mata kuliah Pengantar Ilmu Sosial. *Jurnal Pendidikan Ilmu-Ilmu Sosial*. 10 (1), 120–127. <http://jurnal.unimed.ac.id/2012/index.php/jupuis>.
- Ishtaiwa-Dweikat, F. F., & Aburezeq, I. M. (2016). The use of Google apps to support teaching and learning: A UAE case study. *International Journal of Web-Based Learning and Teaching Technologies*, 11(4), 1–21. <https://doi.org/10.4018/IJWLTT.2016100101>
- Jupriyadi., Nurkholis, A., Budiman, A., Pasha, D., Ahdan, S., Gusbriana, E., & Hamdan Sobirin, M. (2022). Pelatihan Google Apps sebagai penunjang administratif di Desa Bandarsari. *Journal of Technology and Social for Community Service (JTSCS)*, 3(1), 15–20. <https://ejurnal.teknokrat.ac.id/index.php/teknoabdimas>.
- Kapambwe, M., & Sooltan Sohawon, M. (2021). Educational administration and management; Issues and perspectives. <https://www.researchgate.net/publication/348817615>
- Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021a). Digital transformation: An overview of the current state of the art of research. *SAGE Open*, 11(3). <https://doi.org/10.1177/21582440211047576>
- Kuswoyo, H., Budiman, A., Pranoto, B. E., Rido, A., Dewi, C., Sodikin, S., & Mulia, M. R. (2022). Optimalisasi pemanfaatan Google Apps untuk peningkatan kinerja perangkat desa

- Margosari, Kecamatan Metro Kibang, Lampung Timur. *Journal Of Human and Education (JAHE)*, 2(2), 1–7. <https://doi.org/10.31004/jh.v2i2.47>
- Kuzu, Ö. H. (2020). Digital transformation in higher education: A case study on strategic plans. *Vysshee Obrazovanie v Rossii*, 29(3), 9–23. <https://doi.org/10.31992/0869-3617-2019-29-3-9-23>.
- Lestari, T. A., & Mariah, S. (2018). Strategi pengembangan sistem informasi akademik dalam upaya peningkatan mutu pendidikan. *Kelola Jurnal Manajemen Pendidikan*, 5 (1), 15–23.
- Mahidin. (2017). Kajian administrasi pendidikan di dunia pendidikan. *Al-Irsyad: Jurnal Pendidikan dan Konseling*, 7(1), 131–138. <http://dx.doi.org/10.30829/al-irsyad.v7i1.6681>.
- Marks, A., Al-Ali, M., Atassi, R., Abualkishik, A. Z., & Rezgui, Y. (2020). Digital transformation in higher education: A framework for maturity assessment. In *IJACSA International Journal of Advanced Computer Science and Applications* (Vol. 11, Issue 12). [www.ijacsa.thesai.org](http://www.ijacsa.thesai.org)
- McCarthy, A. M., Maor, D., McConney, A., & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. *Social Sciences and Humanities Open*, 8(1), 100479. <https://doi.org/10.1016/j.ssaho.2023.100479>
- McDonald, A., Haslam, C., Yates, P., Gurr, B., Leeder, G., & Sayers, A. (2011). Google calendar: A new memory aid to compensate for prospective memory deficits following acquired brain injury. *Neuropsychological Rehabilitation*, 21(6), 784–807. <https://doi.org/10.1080/09602011.2011.598405>.
- Mitrayana. (2018). Rencana Strategik Departemen Fisika. FMIPA UGM: Yogyakarta. Visi, Misi dan Tujuan – Departemen Fisika FMIPA ([ugm.ac.id](http://ugm.ac.id)).
- Putra, M.J., Hermanto, B., Sukoco, I., & Suryanto. (2023). The effect of education administration in the effort of quality improvement of the higher education during the pandemic Covid-19. *Journal of Namibian Studies: History Politics Culture*, 33, 3027–3045. <https://doi.org/10.59670/jns.v33i.671>.
- Nugroho, I., Mukhtar, H.J., Julfiati, F., Mubarak, R., & Tumenggung, H.I. (2021). Pengenalan dan pelatihan menggunakan Google Apps untuk pembelajaran online pada masa pandemi Covid 19 di Yayasan Joshua Bangun Bangsa. *Jurnal Abdimas Indonesia*, 1(2), 73–79. <https://doi.org/10.53769/jai.v1i2.86>.
- Owayid, A. M., & Uden, L. (2014). CCIS 446 - The usage of Google Apps services in higher education. In *CCIS Springer International Publishing Switzerland*, 446, 95–104. [https://doi.org/10.1007/978-3-319-10671-7\\_9](https://doi.org/10.1007/978-3-319-10671-7_9).
- Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: How to benefit from digitalization in practice. *International Journal of Information Systems and Project Management*, 5(1), 63–77. <https://doi.org/10.12821/ijispm050104>.
- Putri, O. A., Hariyanti, S., & Kediri, I. (2022). Review artikel: Transformasi digital dalam bisnis dan manajemen. *Proceedings of Islamic Economics, Business, and Philanthropy*, 1(1), 135–166. <https://jurnalfebi.iainkediri.ac.id/index.php/proceedings>.

- Raharja, U., Lutfiani, N., Wardana, W. S., Informasi, S., Raharja, S., & Jendral, J. (2018). Penjadwalan agenda pelaksanaan Tridharma perguruan tinggi secara Online menggunakan Google Calendar. *Jurnal TEKNOINFO*, 12 (2), 66–71. <https://doi.org/10.33365/jti.v12i2.91>.
- Raju, V., & Harinarayana, N. S. (2016). Online survey tools: A case study of Google Forms. *Paper presented at the National Conference on "Scientific, Computational & Information Research Trends in Engineering, GSSS-IETW, Mysore*. <https://www.researchgate.net/publication/326831738>.
- Rowe, M., Bozalek, V., & Frantz, J. (2013). Using Google Drive to facilitate a blended approach to authentic learning. *British Journal of Educational Technology*, 44(4), 594–606. <https://doi.org/10.1111/bjet.12063>.
- Rivera, M.T.C. (2020). *The impact of COVID-19 on higher education*. Compostela Group Universities: Spain.
- Trilaksono, A.R. (2018). Efektivitas penggunaan Google Drive sebagai media penyimpanan di kalangan mahasiswa. *Jurnal Digital Teknologi Informasi*, 1(2), 91–97.
- Tran, S. K. (2017). GOOGLE: a reflection of culture, leader, and management. *International Journal of Corporate Social Responsibility*, 2(1). <https://doi.org/10.1186/s40991-017-0021-0>.
- Ulum, B., Fantiro, F. A., Mochamad, &, & Rifa, N. (2019). Pemanfaatan Google Apps di era literasi digital pada siswa Sekolah Dasar. *Jurnal Ilmiah Kependidikan*, 14(2), 22–31. <https://doi.org/10.33654/jpl.v14i2.843>
- Utami, L.W.S. (2021). Penggunaan Google Form dalam evaluasi hasil belajar peserta didik di Masa Pandemi Covid-19. *TEACHING: Jurnal Inovasi Keguruan dan Ilmu Pendidikan*, 1(3), 150–156. <https://doi.org/10.51878/teaching.v1i3.453>.
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28 (2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.001>
- Warsito, A. B., & Yuliandini, E. (2017). Penerapan Google Drive sebagai media penyimpanan bahan perkuliahan dalam mendukung aplikasi Mobile App. *Jurnal Ilmiah Sisfootenika*, 7(2), 219–227.
- Wiemken, T. L., Furmanek, S. P., Mattingly, W. A., Haas, J., Ramirez, J. A., & Carrico, R. M. (2018). Googling your hand hygiene data: Using Google Forms, Google Sheets, and R to collect and automate analysis of hand hygiene compliance monitoring. *American Journal of Infection Control*, 46(6), 617–619. <https://doi.org/10.1016/j.ajic.2018.01.010>