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## **A COMPARATIVE STUDY BETWEEN GOOGLE WORKSPACE AND MICROSOFT OFFICE 365 PRODUCTIVITY SERVICES IN IRAQI EDUCATIONAL INSTITUTIONS**

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### **Abstract:**

Many Iraqi Educational Institutions have started considering adding a Cloud productivity applications which are used by students and teaching staffs, These are a complementary group of solving cloud-based productivity tools of Google and Microsoft aiming to enable users to create, store and access their applications and programs at any time, and from anywhere by using various devices, whether Desktop, mobile or smart devices, and users can be given an email with the name of the facility and give different authorities to accomplish their work.

To use the best providers of Collaborative tools and solutions which can be used greatly in the Educational Process Google, specifically, offers Google Workspace for educational and Microsoft offers Microsoft Office 365. Both Office 365 and Workspace are extraordinary tools for providing productive services in education fields, and non-profit organizations can get copies that are donated by the two companies. However, there are significant differences between them, so one should think best in choosing which platform is appropriate for Iraqi Educational Institutions. This is an incredibly complex question with so many comparative points between them. Both Workspace and Office 365 are regarded are the two important tools in providing productivity Service in Education Sectors. In this present study, it is hoped to mention the differences between the two cloud platforms that can help IT administrators in educational institutions to choose the best and most suitable program, and make balance with amazing set of factors, including contract terms, organizational issues, the ability to integrate with a range of educational applications, and the use of servers, and host, packet inspection and tools, protocol analysis and service quality, measurement and improvement of response time, data transfer rate and network performance so that it can be compatible with the technological infrastructure in Iraq.

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Both platforms provide custom email for all businesses which include collaboration tools such as Mail, Calendar, Meet, Chat, Drive, Docs, Sheets, Presentations, Forms, Groups, Discussions Board, Sites and etc., which are a free set of easy-to-use tools that provide a flexible and secure basis for learning and teaching process, collaboration and communication.

**Key words:** Google Workspace for Education, Microsoft Office 365 For Education, Cloud Service, Collaboration and Communication.

## Introduction

By offering students and teachers innovative tools and learning spaces, new information and communication technologies are rapidly changing how education is provided, Once mainly a question of displaying static hypertext documents, digitization has now extended to the management of content in dynamic systems that allow active participation. With this new stage in the digitization of education, often referred to as platformization, there is a need to reflect on the process's implications. Starting from a description of this new phenomenon and its manifestations particularly in Iraq. This paper will explore the potential and critical aspects of platform education, which are considered an integrated set of interactive online services that provides the teachers, learners, parents information, tools, and resources to support and enhance educational delivery and management. (Cornali, 2021).

Microsoft 365 and Google Workspace for Education are a suite of productivity tools that let you perform common business tasks 'in the cloud' using a web browser include, sending emails, managing calendars, creating documents, spreadsheets and presentations, video conferencing, file management and team collaboration.

## Goals/ Objectives

- This study aims to look at all the features of these educational tools, as Google Workspace and Microsoft Office 365 have created very useful tools that educators can use to improve learning outcomes and provide information.

Both products have strengths and weaknesses. The usefulness of an organization depends on more factors than just the features available in each product. They depend on technical and technical expertise within the organization and it in a set of skills that IT administrators must acquire.

- It is seeming that the real Winer is the Millions of Techers and Students Worldwide who are using and Applying these Products, ts cost-free to all Educational Institutions any Educational Institutions can depend on this Products Without using Great resources.

- Google Workspace and Microsoft Office 365 are regarded as perfect and extraordinary Strong Instruments in work environment remotely nowadays, both are more attractive and Suitable than others both Productions according to ability Compressions features, easy to use, affording to cover the Operation, Safety of the platform, Storing, Expanding choice and Application.

## Importance

The Importance of this Study is to make caparison between the Services of Google Workspace and Microsoft Office 365 in Iraqi Educational Institutions, in which both are Excellent tools to provide Services in Educational field and none-profit Organization can get Copies and gifted by both companies Google and Microsoft.

There are considerable differences between them, so it is better to take in to account which Platform is Suitable for Educational Institutions in Iraq, it is hoped this study will clarify the Significant differences between these two Cloud Platforms and help the Information Technology in charge in Iraqi Institutions to choose the best and most Suitable one and make a balance between incredible number of factors which are compatible with the Technological Infrastructure in Iraq.

It is also hoped this current study will draw Official's attention in Military of Education to Provide the facilities in Iraqi and also cover all its needs and Technological Infrastructures.

### **Google Workspace for Education overview**

Google Workspace for Education is a set of Google tools and services that are tailored for schools and homeschools to collaborate, streamline instruction, and keep learning safe. Google Workspace for Education offers multiple options to meet your organization's needs:

- Google Workspace for Education Fundamentals—gives you tools to aid teaching and learning, such as Classroom, Google Meet, Google Docs, Google Forms, and Google Chat.
- Google Workspace for Education Standard—Same tools as Education Fundamentals but with advanced security features and enhanced administration controls.
- Teaching and Learning Upgrade—Adds enhanced video-communication capabilities, Classroom add-ons, and other features and tools to your Education Fundamentals or Education Standard edition.
- Google Workspace for Education Plus—Includes all the features in Education Standard and Teaching and Learning Upgrade with additional features for certain services, such as attendance tracking in Google Meet. (Abraham, 2021)

Education Fundamentals is free to all qualifying institutions. Education Standard, Teaching and Learning Upgrade, and Education Plus are all paid subscriptions. (Google Workspace a. , 2021)

A free suite of communication and collaboration tools, that allow students and teachers to work and learn together wherever they are. Strengthen collaboration and communication at school and after lessons, expanding opportunities for future generations to learn. Google Workspace for Edu. is a robust, easy-to-use cloud solution that increases workflow efficiency and provides educators with the resources to create leadership training strategies. (Cloudfresh, 2021)

To qualify for Google Workspace for Education K–12 schools, higher-education institutions globally, and homeschool co-ops in the U.S. are eligible for Google Workspace for Education if they meet certain criteria, K–12 and higher institutions must be a government-recognized, formally-accredited educational institution delivering nationally or internationally-approved certifications at primary and secondary level. (Google Workspace A. , 2021).

### **Microsoft Office 365 for Education overview**

Microsoft (formerly Office) 365 for Education looks like a great deal. It comes with Microsoft's productivity suite with additional communication and collaboration applications. It's also advertised as free, Bottom line up front: Microsoft 365 Education is totally free, there are three Microsoft 365 Education plans. The basic plan, A1, is entirely free for an unlimited number of individual users. The other plans do charge per user if you want to upgrade your educational organization to those plans to get the extra features. This is entirely optional, the fee education plan has a ton of great stuff, all you need to get started with Microsoft 365 Education is a valid school email address. You can enter it right on the Office Education homepage. (Prokopets, 2021)

What's included in the plan? Microsoft 365 brings all of Microsoft's core productivity and collaboration tools to the cloud. Email, group chat, and group collaboration within projects

across multiple applications are all supported, With the exception of Publisher, these apps are device-agnostic and can be accessed from anywhere, with storage on the Cloud in OneDrive, The basic, free version of Microsoft 365 Education brings together the core apps in their online-only forms, meaning there's no desktop app. Users do get the desktop version of OneNote, There's no limit to the number of users, and the plan includes Class and Staff notebooks, Professional Learning Community (PLC) groups, compliance solutions with a unified e Discovery center, rights management, data loss prevention, and encryption. (Prokopets, 2021)

Microsoft 365 vs Google Workspace — which one is more productivity? This is a question that many businesses, particularly startups, have a lot of trouble answering, So, in this study, I'm going to put the two product suites head-to-head in a detailed comparison review, how Google Workspace and Microsoft 365 fare against each other in the key areas of: (SINGLETON, 2021).

**Comparison of Services between Google workspace and Microsoft Office 365 in terms of:**

**• File Storage**

Google Workspace Offers unlimited cloud storage for schools Files are stored on Google Drive, While Office 365 Files are stored in One Drive and if you are using Teams, file will be stored on SharePoint. You can store up to 1 TB of data per user. (kenyayote E. , 2021).

**• Accessibility**

Both Google Workspace and Microsoft 365 can be accessed online and offline, but they work a little differently, Microsoft 365 offers a desktop software that companies can download, which connects and synchronizes with their cloud-based storage platform. They also offer a web-based version of their software, but the apps are not as powerful as they are on the desktop software, Microsoft 365's are available on Windows, iOS, macOS, and Android, Google Workspace is web-based but does provide access to their apps when offline. (Malik, 2020).

**• Support:**

Both services offer 24/7 customer support by phone in English, and for users of other languages, support hours can vary in different time zones, there is also email support, but the average response time can also vary. (2020 , البوابة العربية)

**• Performance:**

Both services offer applications that have a minimal impact on the performance of your computer, as (Office 365) applications are distinguished by their reasonable size, while (Google Workspace) applications rely entirely on the web, which contributes to improving computer performance.

While Office 365 applications are well integrated into the Windows operating system, and Mac users can also benefit from the same features with similar performance results, one thing to keep in mind is that Office 365 requires a stable Internet connection when syncing files with OneDrive app (2020 , البوابة العربية).

**• Security Features:**

Google Workspace provides full-data encryption both while at rest and while in transit. They have improved features, so it is now easier for administrators to manage access permissions and restrict access to data and apps, they also provide two-step verification, with your phone's built-in security key being offered as a verification method, Google

Workspace has also put in place abuse flagging, logging, classification, and detection capabilities to prevent misuse of certain applications that allow people to interact with one another.

Microsoft 365's Security Features Like Google's two-factor authentication, Microsoft 365 offers multi-authentication for all of its plans, they also provide role-based access control, which clarifies the process of assigning access to specific individuals. It does so by giving access to groups and then assigning users to those groups.

Both Google Workspace and Microsoft 365 prove to be secure platforms that take precautions to keep your data safe. (Malik, 2020)

#### • **Web or App based**

You can access both services across Windows, Linux and MacOS desktops, However, Google Workspace applications are web-based while on the other hand Microsoft 365 applications must be launched using their downloadable desktop clients. So, the limitation with the Google Workspace is its need to constantly be connected to the internet to be able to work on it effectively, in a team. To ensure maximum productivity both applications do offer apps for iOS, iPad OS, and Android devices. (HUGHES, 2021)

#### • **Educational mail**

Gmail has an easy to use, less cluttered interface. It is like Gmail used for personal use which adds as a bonus. Making a move to a different platform is difficult from a user consumption point of view. But it is observed that if people are comfortable with the interface the adaptability is higher.

Outlook for Business on the other hand is loaded with features. Based on the sender it segregates your emails into your inbox, clutter and junk enabling you to respond to the important emails first. The clean-up feature simplifies long email threads so that they become easier to follow. And the synchronization of all the contacts, calendar along with the email (as they're part of Outlook itself) is truly rewarding. Gmail relies on individual applications of Google Contacts and Calendar Apps which are challenging to navigate through daily. (Gralla, 2021)

#### • **Productivity apps**

Office 365 and Google Workspace productivity apps are fairly similar. Both allow students and teachers to collaborate on documents in real time, but Microsoft's apps have a slight edge for their more robust features.

Microsoft Word, for example, has advanced autocorrect, image editing, and bibliography features to help students with coursework. Office documents are even integrated with chat and call capabilities so students can collaborate and give each other immediate feedback. Google Workspace doesn't have these features, but it does have a cleaner, more intuitive user interface. (Roos , 2021)

#### • **Ease of use**

Google Workspace is the most popular platform, with two billion active monthly users, Microsoft 365 is Microsoft's most popular product by far, with over two hundred million active monthly users and climbing, However, popularity does not necessarily mean a product is better. Looking at the other features involved is essential for making an accurate comparison. (Malik, 2020).

## • Class Assignment Management

Google Workspace: For Assignment Management tools, Google Workspace has two vital web apps: Assignments and Classroom. Teachers can use Google classroom to assign tasks, receive assignments and provide feedback. Google Assignments can also be used for grading, checking for plagiarism in assignments, viewing word count and checking grammar errors. (kenyayote, 2020)

Office 365: Class Assignments can be created in Office 365 using Microsoft Teams. You can select whether students can or can't edit their submitted assignments. You can also set assignment deadlines, grade assignments, provide feedback and check for originality in assignments using Turnitin (You need a Turnitin License). (kenyayote E. , 2021)

## • Ease of Access

Both Google Workspace and Office 365 are user friendly and cloud based. Ease of Use boils down to the technical know-how of using the tools, Google Workspace: Accessing Google Workspace apps for education is very simple if you have a Gmail account. All that you have to do is click a link and the web-app opens, Office 365: Some office 365 applications are only available on PC and those that are available as web-apps require a learning curve for first time users. (HUGHES, 2021)

## • Video Meetings

Google Workspace: Google's video conferencing tool is called Meet and is available as a web app. Students can join a Meeting via invite link or code. The free package comes with a limit of 100 participants (Read More On: Using Google Meet for Learning). Recordings are stored on Google Drive. (Kenyayote, Google Meet for Online Learning and Teaching Tutorial, 2021)

Office 365: Microsoft's video meeting tool that is part of Office 365 is called Teams (Read More on: Using Teams for Online Learning). It is available on web app. The maximum number of participants who can be in a Teams meeting at a time is 250. Recorded meetings can be downloaded to your local computer or uploaded to Microsoft Stream (Video Sharing Tool). (Kenyayote, Microsoft Teams Tutorial for Students and Teachers, 2021)

## • Working environment

The working environment that you are hoping to deploy Google Workspace and Microsoft 365 in should also be factored into your final decision. If your organization uses a wide mix of devices and operating systems, then you could potentially make life easier for your users by plumping for Google Workspace, which is designed to run online.

But if your organization is entirely MS Windows-based, there's a lot to be said for Microsoft 365 — a plan which involves the desktop apps will slot very neatly into such an environment. (Singleton, 2021)

## • Document Processing

Google Workspace: Has minimalist document processing apps (Docs, Sheet, Slides). Their document processing apps are meant for sharing and simple data collaboration.

Office 365: Has very powerful document processing apps (Word, Excel, ppt). Microsoft has spent many years improving its document processing apps. They can be used by professionals and beginners

Differences: Office 365 document processing apps are available both on web App and Desktop. This means you can use their Desktop document processing apps without internet access. Workspace document processing apps are only available on web App. You need to be online to use them. (Kenyayote, Microsoft Teams Tutorial for Students and Teachers, 2021)

### • Security and Privacy

Google Workspace: Administrators using Google Workspace have control over data protection. As the admin, you can enable Google Workspace security options like authentication, API Permissions, Login challenges, Data recovery, Security alerts, 2-step verification, email encryption etc. For schools that might be concerned with Data sharing, tracking and advertisement; Google Workspace for Education does not show ads nor do they use student's personal information to target ads. Additional security compliance requirements that Google Workspace for Education has met include Family Educational Rights and Privacy act, Children's Online Privacy Protection, Student Privacy Pledge etc. (Google , 2021)

Office 365: Microsoft 365 offers protection by scanning attachments for virus, email encryption, password protection of files, file restoration etc. However, you will need to be on a paid plan to use advanced security tools like multi-factor authentication. (Office 365 f. , 2021).

### • IT

Whilst it's always a good idea to have some IT resource available, the resource and IT cost implication for deploying, maintaining and supporting Google Workspace will often be lower than for Microsoft 365 — particularly if the Microsoft desktop apps are involved. (HUGHES, 2021)

### • Applications

Google Workspace: We have listed some of Google Workspace web applications. Google Workspace has web apps, browser apps and mobile apps. We have not heard of any Google Workspace for education desktop app, Products Google Workspace for Education comprises Included applications:

- 1- Gmail: features include: custom business email @yourcompany, unlimited group email addresses, 99.9% guaranteed uptime, twice the storage of free Gmail, zero ads, 24/7 phone and email support.
- 2- Google Meet: a video conferencing app free communication and collaboration tool for video calls, and screen sharing.
- 3- Google Classroom: is a free application designed to help students and teachers communicate, collaborate, organize and manage assignments, grade and give feedback, go paperless, and much more.
- 4- Google Chat: is a free online chat system for individual and group chats.
- 5- Google Hangout: is a cloud-based messaging and video chat application developed by Google.
- 6- Google Calendar: is a free, web-based calendar platform that is completely ad-free in Google Workspace for Education accounts.
- 7- Google Drive: allows to store your files securely and access them from any device, as well as create, open and edit your files. You have UNLIMITED storage space.
- 8- Google Docs: is a free, web-based word processing tool that allows you to create and edit documents online and collaborate in real-time.
- 9- Google Sheets is a free, web-based spreadsheet tool that allows you to create and edit spreadsheets online and collaborate in real-time. It is great for data analysis and organization.
- 10- Google Slides: is a free, web-based presentation tool that allows you to create and edit presentations online.
- 11- Google Forms: is a free, web-based form tool that allows you to create forms, surveys, and quizzes that collect response information in real-time.

- 12- Google Sites: is a free and easy way to create and share websites and web pages.
- 13- Google Currents: is a digital bulletin board that can help employees working at the same company chat, share files, and generally stay connected.
- 14- Google Keep: is a web-based service that enables End Users to create, edit, share, and collaborate on notes, lists, and drawings.
- 15- Google Vault: lets you retain, hold, search, and export your organization's mail and chat messages. You can also search and export your organization's files in Google Drive.
- 16- Google Group: allows to create and participate in online forums and email-based groups with a rich experience for community conversations.
- 17- Google Contacts: is a web-based service that allows End Users to import, store, and view contact information, and create personal groups of contacts that can be used to email many people at once.
- 18- Google Jamboard: is a web-based service that allows End Users to create, edit, share, collaborate, draw, export, and embed content within a document.
- 19- Google Cloud Search: allows employees of a company to search and retrieve information, such as internal documents, database fields, and CRM data, from the company's internal data repositories.
- 20- Google Apps Script: is the only low-code platform that makes it quick and easy to build business solutions that integrate, automate, and extend With Apps Script, business users can build custom solutions, no professional development experience required.
- 21- Google Workspace Marketplace: offers a wide range of quality enterprise apps that add functionality and features to native Google Cloud apps, Project management apps can help automate tasks. For instance, you could turn a Google Form into an interactive workflow, or autogenerate tasks.
- 22- Google Admin: Google Admin console, you grant them administrator privileges and access to the admin console. The role's privileges determine the admin's controls in the admin console, information they can access, and tasks they can perform.
- 23- Google Endpoint: is a product that allows you, as an admin or security operations professional, to build an inventory of devices that are accessing your organization's data. Endpoint Verification also provides critical device trust and security-based access control as a part of the solution.
- 24- Google Work Insights: is a reporting tool for Google Workspace that gives you insights into the impact of your Google Workspace deployment. Using easy-to-read charts, you can see metrics on your organization's Google Workspace adoption, productivity, and collaboration (workspace, 2021)

Office 365: We have also provided a list of some of office 365 education apps. Office 365 has web apps, mobile apps and desktop apps. You can use its apps to work both offline and online effectively, Products Office 365 for Education comprises Included applications:

- 1- Microsoft Calendar: Schedule and share meeting and event times, and automatically get reminders.
- 2- Microsoft Class Notebook: Organize your lesson plans in a digital notebook, and create a workspace for students.
- 3- Microsoft Delve: Get personal insights and relevant information based on who you work with and what you work on.
- 4- Microsoft Excel: Discover and connect to data, model and analyze it, and visualize insights.
- 5- Microsoft Forms: Create surveys, quizzes, and polls and easily see results in real time.
- 6- Microsoft Kaizala: A simple and secure mobile chat app for work.
- 7- Microsoft Lists: Allows users to create, share, and track data inside lists.
- 8- Microsoft OneDrive: Store, access, and share your files in one place.

- 9- Microsoft OneNote: Capture and organize your notes across all your devices.
- 10- Microsoft Outlook: Business-class email through a rich and familiar Outlook experience.
- 11- Microsoft People: Organize your contact info for all your friends, family, colleagues, and acquaintances.
- 12- Microsoft Planner: Create plans, organize and assign tasks, share files, and get progress updates.
- 13- Microsoft Power Apps: Build mobile and web apps with the data your organization already uses.
- 14- Microsoft Power Automate: Create workflows between your apps, files, and data to automate time-consuming tasks.
- 15- Microsoft Power BI: Create actionable, dynamic, and engaging data dashboards you can share with others.
- 16- Microsoft PowerPoint: Design professional presentations.
- 17- Microsoft Project: Develop project plans, assign tasks, track progress, and manage budgets.
- 18- Microsoft SharePoint: Share and manage content, knowledge, and applications to empower teamwork.
- 19- Microsoft Staff Notebook: Collaborate with faculty and staff to share policies, procedures, and calendars.
- 20- Microsoft Stream: Share videos of classes, meetings, presentations, and training sessions.
- 21- Microsoft Sway: Create and share interactive reports, presentations, and personal stories.
- 22- Microsoft Teams: The customizable, chat-based team workspace in Office 365.
- 23- Microsoft To Do: Keep track of your tasks in one place with intelligence that helps you collect, prioritize, and get more done together.
- 24- Microsoft Whiteboard: Ideate and collaborate on a freeform canvas designed for pen, touch and keyboard.
- 25- Microsoft Word: Bring out your best writing.
- 26- Microsoft Yammer: Connect with coworkers and classmates, share information.
- 27- Microsoft Admin Center: Manage applications, services, data, devices, and users across your Microsoft 365 services. (appsource, 2021).

#### • **Backup and Data Retention Policy**

Sometimes you might accidentally delete your data. Below is how Office 365 and Google Workspace retention policy compare, Google Workspace: You can restore files that have been deleted from Google Drive within a period of 15-30 days. Administrators can use Google Workspace tool called Google Vault to set data retention rules. You can also Contact Google Drive specialists for help with data recovery for free. (Google Drive, 2021)

Office 365: You can set data retention policies for Teams, Exchange, SharePoint and OneDrive. Once you set a retention policy, a folder is created called Preservation Hold Library. Deleted data can stays in this folder for up to 93 days before its permanently deleted. (Office 365 D. , 2021)

#### • **Communication and Collaboration**

Regardless of whether you use Google Workspace or Office 365, you have an assortment of communication and collaboration tools from which to choose, Both services allow simultaneous editing of documents in the web browser, so that people can work as a team on shared projects; for files stored on OneDrive for Business, you can collaborate using the Office desktop apps, as well.

Google has renamed its Google Hangouts apps to Meet (for online meetings, video conferencing, and voice calls) and Chat (which handles simple text chats). Microsoft 365 accomplishes the same goals with the Microsoft Teams app, which replaces Skype for Business and the ancient Lync. (Bott, 2021).

## • Mobile apps

there are mobile apps (iOS and Android) available for both Google Workspace and Microsoft 365 — these allow you to access and edit your files on the go. (SINGLETON, 2021)

## • Customer Service

Both the services provide you access to an enhanced customer service level. The services offer you 24 x 7 web-based and phone support. The self-help libraries and knowledge centers would be yet another advanced option you would rather find an extensive option to go with, Google Workspace offers you services in 14 different languages. The customer service agents with Google are known to be polite and knowledgeable. You would also get access to a good range of Knowledge Hub.

The same would be held with Microsoft 365 as well. It offers phone and web-based support for business customers. You would also find self-help guides, how-to videos, and a powerful knowledge base, The winner in this scenario would be a draw. Both layers offer you an excellent option. (ig, 2021).

## • General network requirements

In Google Workspace Your device works with wired and wireless networks. We recommend a wired network connection for the best sound and video quality, make sure your bandwidth is sufficient for the video quality and number of users required by your organization, to provide high-quality video meetings with Google Meet, you need to set up your network so that Meet can efficiently communicate with the Google infrastructure .

A DHCP server is recommended, but not mandatory. To set a static IP, move to Chrome OS mode, set up the network to use a static IP and then reboot the device in CFM mode, Office 365 During the last months, this question became very relevant as many organizations have shifted to supporting remote workers during COVID-19 work-at-home times. Many organizations have implemented VPN solutions hastily and forgot about the correct routing or DNS resolution strategy for SaaS services like Microsoft 365.

## • Minimum bandwidth required

In Google Workspace While the devices will operate with bandwidth speeds as low as 300 kbps, video and audio quality might be poor. To provide High definition (HD) or Standard definition (SD) quality video HD video quality bandwidth requirements

- Latency should be less than 50 ms when pinging Google's public DNS server at 8.8.8.8.
- Outbound signals from a participant in all situations must meet a 3.2 mbps bandwidth requirement.
- Inbound signals depend on the number of participants:
  - 2.6 mbps with 2 participants
  - 3.2 mbps with 5 participants
  - 4.0 mbps with 10 participants
- SD video quality bandwidth requirements
- Latency should be less than 100 ms when pinging Google's public DNS server at 8.8.8.8.
- Outbound signals from a participant in all situations must meet a 1 mbps bandwidth requirement.
- Inbound signals depend on the number of participants:

- 1 mbps with 2 participants
- 1.5 mbps with 5 participants
- 2 mbps with 10 participants

In Office 365 the bandwidth requirements for each of the functions available in the Office Live Meeting Client. All values are in kilobytes per second (KBps) for one user, Function, Bandwidth required, Data transfer 56 KBps, Voice 80KBps (50 KBps minimum), Video 350 KBps (50 KBps minimum), Office RoundTable 700 KBps (100 KBps minimum) (techcommunity, 2021) (Office 365 N. , 2021)

#### • Data Protection and Data Security

Google does have a relatively good track record when it comes to data security. They have an extensive collection of data processing centers, each one built with custom servers and special operating systems for performance and enhanced security. Google also uses a variety of innovative strategies to prevent and expel malicious threats .

However, Microsoft 365 has the advantage of having had more time to perfect its data protection offering and create a highly-tailorable environment of advanced tools where organizations can implement their own policies and measures. ( Calligo, 2020).

#### Conclusion

The Study has Reached the following Conclusions:

- As viewing all Characteristics and feature of the Mentioned Educational tools Google Workspace and Microsoft Office 365 Established useful and Beneficial Instruments in which enables Teachers to use and apply them to Improve Educational Productions and Provide Instructions for their uses, both have Shortcomings and Strong points the benefit of the Organizations and Institutions depends on some Factors more than the Characteristics available in all Productions, which depends Mainly on the Technical and Professional Experience.

The Experienced Person will gain Important skills in Google Workspace applications in Google Educational Instruments while the user of Microsoft Office will take advantage the Application of Office 365 more than Google application.

- Google and Microsoft have allocated major Resources in their Educational groups, clearly there will Continues Growth of both Productions and they age going to be Continuing in their Investment, as times goes by, most of Shortcomings and obstacles available now are Overcome in Office 365 and Google Workspace Application.

Recommendations

- The Researcher hopes that this current study contributes in directing the official in charges in Ministry of Education in Iraq employing the most recent Technology in the Educational Processes and meeting the needs of Instilling Requirements and Demands and Organizing Google and Microsoft Educational Platforms which suites with Iraqi Technological Infrastructures.

- Encouraging the inflammation and technological Officials in the directorate of Educations in all Provinces to build install and Participate in both Google and Microsoft Platforms which suits with the Students and Techers Potential abilities.

- Adopting all Educational institutions in Iraq to use the Google Workspace and Microsoft Educational Applications which have positive impacts in acquiring the Students and Techers Skills and Using them in Educational Process.

- Opening courses Professionalized in the Administrations of both Google Workspace and Microsoft Office 365 in all Schools of Educations Directors to Promote digital skills of Students.

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