

(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

Usability and Accessibility Evaluation of

Windows 10

Mehwish Umer^{*1}, Mizna Khalid², Aiman Saboor³

Jinnah University for Women, 5-C Nazimabad Karachi, Pakistan

E-mail: mahwishumer93@gmail.com^{*1}

E-mail: juwmalka@yahoo.com²

E-mail: aimansaboor22@hotmail.com³

Abstract: The purpose of our study is to evaluate, assess and appraise the usability of Windows 10 operating system in light of its usability by users of variable diversity in origin, genre and intellectual standards.

Obviously, every version of Windows operating system has different features which can be either easy or sometimes difficult for the user to understand and perceive. The difficulty is often triggered because of Human-Computer Interaction mistakes, brought about not only by the design but often due to the introduction of a new mental model. Hidden functions and modified features of updated versions contribute significantly to the predicaments of the users in performing basic tasks. The main emphasis of our study is to collect maximum specifics in detail, highlighting the influence of the transition from Windows 8 to Windows 10, on the users. Consequently, this data can then be utilized by the developers to evaluate the extent of the problems and later analysis in resolving them. Our study can play a major role in ensuring prompt satisfaction of the users, achieving good user experience and opinion. [1,2]

Keywords: Windows 10, Testing; Operating system; Graphical user interface; Human computer interaction; Heuristic evaluation; Usability evaluation; Accessibility evaluation

I. INTRODUCTION

Windows 10 comes with combination of best features of Windows 7 and Windows 8. Windows 10 also introduces some smart features such as smart start menu, Virtual desktop, Cortana voice control, tablet mode, advance command prompt, Edge and face login. Our study will uncover the usability issues of Windows 10. We will be comparing results of usability testing with the help of feedbacks and the reviews. Since it is new for the users, often their personal experiences need also be taken into consideration [3]. To achieve on our study targets, we will set some specific tasks for each group of users acting as target audience, and then evaluate the results in three scenarios:

- a) how many users completed their task easily without external assistance;
- b) how many of them experienced difficulty and but performed the task after deliberation but without external help;
- c) How many users required external help in performing the specific tasks?

Our targeted users will be students of different departments and scholastic semesters. Each user group would be given tasks to perform during the exercise that reflects their different operating patterns. Under controlled environment and constant observation, they would be provided guidance and limited assistance, as required, in performing their individual task [4]. User experiences and feedbacks will then be analyzed to provide us the thorough results required for our study. Each usability issue would need to be identified and prioritized to suggest ways to improve the interface. Microsoft unveiled Windows 10 consumer release this year in July. It stated that during its first year of availability, Windows 10 would be available free of charge to the users of genuine copies of Windows 7 or Windows 8. The customer intending to install, the free version, Windows 10 has to submit to Microsoft, their intent online. Microsoft would then process the request and subsequently approve the "link" to the customer for direct installation. Alternatively, Windows 10 may also be purchased for an original installation on one particular system. [5]



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

1.1 Usability evaluation Phase 1-Heuristics Evacuation

Here is the heuristic evaluation of Windows 10 under the Jakob Neilson principles of interaction design.

1. Positive findings:

- a) Visibility:
- Windows 8 search bar is replaced in Windows 10 with Action Center. Action Center seems as a vertical panel on the right side of the screen. Action Center offer user access to normally required functions like Search, Share, Devices, and Settings. Action Center also provides convenient view of time, battery level, and Wi-Fi strength to the users while using full screen mode on an app Figure 1.
- With an easy click on the Windows 10 search box, user will be able to get Cortana to supply user with a summary of the necessary events of the day in one place.
- In edge browser, if user marks a favorite webpage, the color of icon will change.
- Unlike Windows 8, the power button is visible at start menu.
- Click the Task view button on the taskbar (or press Windows key + Tab) to mention an overview of your desktops, add new ones or take away existing ones.
- When user hit on print screen button, current status that" Screen shot saved" appeared on the Screen

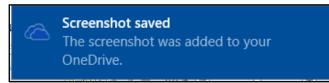


Figure 1: Screenshot status.

b) Consistency and standards

- Using Virtual desktops Windows 10 users will open their apps across multiple screens, the taskbar and desktop stay consistent over all of these desktops.
- The consistency break in Windows 8, when start menu is converted from traditional start menu to new interface called metro interface. In Windows 10 Microsoft solve this problem and return traditional start menu with metro style, which shows consistency for Windows 7 users. Windows 10 also provide full screen start menu for users who are familiar with Windows 8. The user select desire start menu from setting.
- In tablet mode there is no desktop, which provides stability, ease of use and consistency for tablet users.

c) Match between system and real world:

- The word Virtual desktop shows its functionality, it creates imaginary desktops in one PC and enable user to divide tasks on multiple desktops.
- The word Store shows a place where applications and games are offered for sale and download.

d) User control and freedom:

- When accidental termination of Virtual desktop occurs, the open Windows are automatically shifted to the existing desktop. Windows 10 prevents data loss while using Virtual desktop.
- Users are free to create desktop as they want, there is no limit.
- In Windows 10, user can modify their working mode from pc to tablet.
- User can easily shift application from one desktop to other.

e) Error prevention:

• In edge browser, users can't build web note till they have got a lively website. This prevents user from errors.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

• Users are unable to open more than one window of setting, photos, mail and store. If user has accidentally open one window of these applications in first desktop, and tries to open it again in second desktop, the desktop automatically jumps to first desktop where it was opened.

f) Recognition rather than recall:

- Windows 10 also improves recognition for its users, there are many instructions, stuff visibly available which saves users time Figure 2.
- Windows 10 use icons, which make user, recognize certain functions without reading the text.



Figure 2: Easy to recognize through icons.

g) Flexibility and efficiency of use:

- Windows 10 is very flexible and user friendly. User can personalize their operating system according to their priorities.
- For the first time Microsoft introduces Virtual desktop for its clients, users are at no cost to create as many desktop they want in one operating system. It provides flexibility to work any place on any connected gadgets.
- Cortana is available in different languages; this aspect makes Cortana more efficient and effective to use.
- The users can easily create shortcut of important apps in start, desktop and taskbar. User can arrange application in group at start menu and assign name e.g. game.
- User can also login in window using Microsoft account for download content from store, sync setting online to make PCs look and feel same by saving browser history, account picture and color.
- In Windows 10 the core apps are rather good and put forward good functionality. The Mail and Calendar apps have supported a complete revamp, including support for range of email and calendar services. Both features are hasty and efficient to use and provide a lot of data to Cortana in order to it more useful.
- Edge browser enhanced its efficiency by effortless sharing Figure 3.
- Windows 10 provides new function for arrange open Windows in stack, cascade window and show window side by side, so user can easily and effectively arrange current Windows.

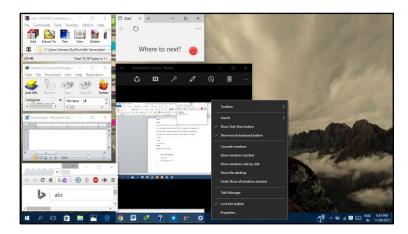


Figure 3: Cascade window.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

h) Aesthetic and minimalist design:

- Edge has been intended to have a minimal interface, leaving as more screen actual domain as possible for web pages, but unenthusiastic part is the lack of extensions such an aspect make users untrustworthy for the new browser of Windows 10.
- Cortana search bar is also used for searching Windows files, and make it aesthetic and minimal design.
- i) Help users, recognize, diagnose and recover from errors:
- Windows 10 is strong when it comes to getting better from errors that might stop it from working properly, but there might come a time when it needs some guide involvement Figure 4.
- Microsoft' s latest operating system has a similar set of recovery tools as previous versions for error prevention.
- Windows 10 bring into play different understandable speech that helps the user according to its understanding.
- Windows troubleshoot problem is used for error recovery.

S Windows Network Diagnostics	×
Detecting problems	
	Cancel

Figure 4: Troubleshoot problem.

j) Help and documentation:

- Edge browser makes page predictions, for helping user
- Cortana gives instructions to help users and provide a set of steps for performing the task. If Cortana can't answer a question directly, it will open the new Edge browser and display search results Figure 5.
- Action center feature assist to find quickly option regarding to operating system. This feature helps to put a stop to making error by sending reports.
- There is chat with support attribute that helps user to solve their queries.
- There are many shortcuts in Windows 10 which grant help instantly.
- Microsoft provides website for help Windows 10 user.



Figure 5: Windows 10 need help website.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

2. Negative Findings

Negative finding are divided into following groups

Critical problems:

Critical problems are really important by the gathering consider them and which may determine its success.

Major problems:

Major problems refer to those problems which causes serious or a large damage to our stuff.

Minor problems:

Minor problems are those types of problems which are small and not much serious [6].

Critical problems

• There is no critical problem.

Major problems

a) Consistency and standards:

In Windows 10, tablet and desktop mode search bar is hidden behind icon of Cortona Figure 6.



Figure 6: Hidden search bar.

Minor problems

a) Recognition rather than recall:

Cortana also search stuff using voice input, it consume too much time for recognize voice input, and some time failed to correctly recognize and search wrong data.

- b) Visibility:
- If user clicks the "Power" option within the Windows 10 start menu, get the choice to Sleep, Shut Down, or Restart. There's no sign out. Once user got the click on its user name, there are options of lock and sign out. Windows 8 users might not be surprised by this, since that's wherever those choices were on the previous start screen. However if user upgrades from Windows 7, they were most likely confused Figure 7.

🚳 Almaas Terai		Mmaas Terai	
		Change account settings	
File Explorer >	е	Lock	e
🥘 Notepad >	Microsoft Edge	Sign out	Microsoft Edge
👧 Microsoft PowerPoint 2010	Sunny	Microsoft PowerPoint 2010	
oogle Chrome	29°	Google Chrome >	29°
Command Prompt	Mon Tue Wed	Command Prompt	
🚟 WinRAR >	<u>☆☆☆</u>	WinRAR >	*****
	16* 15* 14*	Suggested	
Vuolingo - Learn Languag Free	Karakhi	Duolingo - Learn Languag Free	Karáchi
	Google Earth Sto		Google Earth St
	Pinterest Recommended topics		Pinterest Recommended topic
Settings		③ Settings	
O Power	Mail	O Power	MBI
E All apps		IΞ All apps	

Figure 7: Hidden sign-out button.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

- When User creates use Virtual desktop, there is no visibility of status to indicate which desktop user is currently using, until user click task view button. There might be visible status of current desktop to increases visibility Figure 8.
- It is not visible, how many space available on your drive. In Windows 8 it is visible Figure 9.



Figure 8: Windows 10 drives.

Local Dis	k (C:)	-	Data Backup (D:)
97.0 GB fi	ree of 148 GB		1.00 TB free of 1.36 TB
System B	ackup (E:)		New Volume (F:)
1.35 TB fr	ree of 1.36 TB		698 GB free of 698 GB

Figure 9: Windows 8 drives.

c) Consistency and Standards:

In Windows 10 tablet mode is extensively similar to Windows 8, because Windows 8 interface is specially design for tablets. In Windows 8 start menu is scroll left to right. In Windows 10 start menu scroll up to down.

d) Match between system and real world:

- The term Cortana is completely new, it does not use in real life. The users fail to understand its functionality. Cortana helps users to find material on PC, manage calendar, reminders, and find files, chats with user. With the help of Cortana user can recognize things easily by voice input or type input both Figure 10.
- The term VPN in Action center is not familiar. The new user fails to understand its functionality. Its full form (Virtual Private network) is not written here,

			Collapse \vee
Ŀ	F.	D.	\$
Tablet mode	Connect	Note	All settings
Ð	φ	య	*
Project	Battery saver	VPN	luetooth
*	li.	ی ک	Å
40%	No Internet	Quiet hours	Location
⋼			
Flight mode			

Figure 10: Unfamiliar word.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

e) Recognition rather than recall:

In Action Center there is a stop notification button present, QUIET HOURS. The users can get confused by its icon. By only looking at the button it's difficult for the user to recognize its function. It is used to disable all notifications throughout the set times Figure 11.

단	F.	D	ŵ
Tablet mode	Connect	Note	All settings
Ð		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	*
Project	Battery saver	VPN	Bluetooth
*	<u>(</u> ,)		گ
40%	Qaid-e-Azam	Quiet hours	₋ocation
ъ <u>у</u>			
Flight mode			
	ء ^ 🚯	▫ҝ厚▣	5:21 PM 11/30/2015

Figure 11: Unrecognizable word.

f) Help and documentation:

- Virtual desktop and Cortana are difficult to understand for new users, they need help of technical person for understanding its functionality and working. The built-in application example mail, photos, store are completely new for Windows 7 user, and they also need help.
- 32 new keyboard shortcuts provide in Windows 10, but these shortcuts are not known to potential user until they search it in google. Window 10 need to provide help and document for user to know these shortcuts easily.

g) Aesthetic and minimalist design:

- Windows 10's Action Center, still it's not so far perfect, and still it removes some useful features of the Charms Figure 12.
- The negative characteristic is new simplified Settings application; user had expected it would replace Control Panel. Confusingly, both are there in Windows 10 and it isn't always understandable which one user need to use to access or change a particular setting or feature. It would be better if all of Control Panel's features possibly will be migrated the settings application. The user can change account setting using two methods; one is from control panel other is from setting. They are similar function at different places Figure 13.

YOUR EMAIL AND ACCOUNTS mass Terai assession of the that and the term of ter	ings a	nd
asa teraid Pootmali.com ministrator mg info, family settings, subscriptions, security sett re nage my Microsoft account n in with a local account instead	ings a	nd
ministrator ng info, family settings, subscriptions, security sett re nage my Microsoft account n in with a local account instead	ings a	nd
re nage my Microsoft account n in with a local account instead	ings a	nd
n in with a local account instead		
ur picture		
(Contraction of the second se		
Browse		

Figure 12: Account setting in settings.



(A High Impact Factor, Monthly, Peer Reviewed Journal)

Vol. 5, Issue 11, Novemver 2017

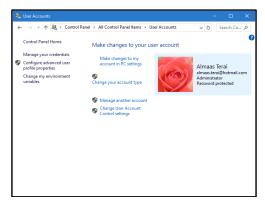


Figure 13: Account setting in control panel.

3. Accessibility Evaluation of Windows 10

The built-in Accessibility technologies of Windows 10, work with both Windows 10 application and desktop software. It provides seamless user experience. Accessibility technologies are discussed below.

• Narrator:

Narrator is reader that read aloud text appear on screen. It gives feedback in audio massage to user when any action has performed. The text that was currently reading by narrator show in blue border appears Figure 14.

← Settings	
Sease of Access	
Narrator	On On
Magnifier	Start Narrator automatically On
High contrast	
Closed captions	Voice
Keyboard	Choose a voice
icyboard	Microsoft Hazel Desktop - English (Great Britain) $ \lor $
Mouse	Speed
Other options	
	Pitch
	Sounds you hear
	Read hints for controls and buttons

Figure 14: Narrator.

• Magnifier:

Magnifier is a tool that enlarge portion of a screen. Making words images and button easier to see. This feature used by users, who have low vision. User can customize Magnifier settings Figure 15.

Ease of Access Centre		- 0)
Canesil	tered > All Control Rend Remo > Ease of Access Centre	w b farth Co., A
Control Fand Harne	Make your computer easier to use	
Ownge sign in settings	Quality access to connerson hould: to can use the total initial values and many type gas planes. Minimous conversion that the advantamentary, here the VPACESH to select the highlighter trans. Selfanges rate the sectors about	
	Image: Start Magnifier Image: Start Narrator Image: Start On-Screen Keyboard Image: Start Display Contrast	
4	Viat saw where to start? Set recommendations to make your computer racie to use	
	Diplore all settings in the unit sign in.	
м	ake the computer easier to see	
0	ptimise visual display	
U	se the computer without a mouse or	
Se	t up alternative input devices	
_	Adjust settings for the keyboard	
	Client text (or visual alternatives for sound): Setup alternatives for sounds	
	📷 Male X easierts focus on tailo	

Figure 15: Magnifier.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

• User text or visual alternative for sound:

Sound data converted to Text and visual cues. Users, who are unable to listen, can take advantages of this feature. They can view text and visual cues in place of listen sounds Figure 16.

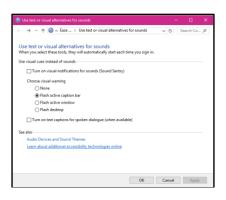


Figure 16: Use text alternative of sound.

• High contrast:

This mode is used by visually impaired people Figure 17.

				- 0	
	EASE OF ACCESS		Find a setting		Q
Nette	tor	Choose a theme			
Magn	ifier	High Contract #1 ~			
Ocse	d captions	Tex.			
		Hyperleika			
		Daubled for			
		Selected See			
		Ection Ket			
		Apply Canot			
	P B 8 8 8	🖬 🔼 📾 💽	? ~ • 4 • •	200	R4

Figure 17: High contrast.

Keyboard

In keyboard following are ease of access features;

a) Onscreen keyboard:

Onscreen Keyboard works as alternative of physical keyboard. If user may not be able to use physical keyboard, can use accessible devices such as touch screen, switches. User must have alternative way to use keyboard.

b) Sticky keys:

Many users frequently use keyboard shortcut keys (e.g. for print: ctrl + p, cut: ctrl + x). But some users face problems while pressing two key at one time, then they use sticky keys. Sticky key allow user to click one key at one time. Sticky keys enabled by pressing shift key 5 times.

c) Toggle keys:

The people who have physical disability, such as visual and hiring problem can use this feature. Toggle keys alert each time when locking keys (e.g. num lock, caps lock) are pressed. A Toggle key produces high sound when lock is ON and produces low sound when lock is OFF. These Alert massages reduce frustration.

d) Filter keys:

Filter keys are used to ignore the frequent keystrokes you press accidently while typing.

1. Mouse:

In Mouse following features which increases accessibility.

User can increase mouse pointer size, to make it more visible.

User can also customize mouse pointer color.

Use numeric keypad in place of mouse to move pointer on the screen.



(A High Impact Factor, Monthly, Peer Reviewed Journal)

Vol. 5, Issue 11, Novemver 2017

II. METHODOLOGY

To get accurate data, the test will be performed on potential users of the system. They were selected from the several departments of university. The users without any knowledge of the new version of Windows will be considered. The users were going to perform the given task on Windows 10 operating under surveillance. The tests challenged the core functionality and applications that comes preinstalled with the operating system. The tests had to be run on at least 10 people to ensure that it uncovered the most of the usability problems in the system. The users are divided in to two groups, a first users group used Windows 7 before and does not used Windows 8, second users group used Windows 7 and 8 before. This study will be end up performing 10 usability tests. We, three observers will be in the room during the test and will be guiding the testers through the process. The participants were put in front of a computer and given different tasks one at a time to complete. They were presented a fresh installation of the operating. They were told to ask questions during the process. They were also told that we (the observers) could not answer any of these questions during the execution of the tasks. The questions were going to be discussed after they were finished with the tasks. After the tasks were finished, the participants had to answer to Questionnaire. The observers collected answers to unresolved questions made during the testing and questioned the participants for what they thought of the system. The results will then be used to analyze and address the usability problems with Windows 10.

2.1 Hypothesis

Following hypotheses were made before carrying out the evaluation of Windows 10:

- Windows 7 users will find difficulty in using Windows 10. They will find it complex.
- For Windows 8 users, experience of Windows 10 would find be pleasurable.

2.2 Selecting the users

The 'Windows' operators required for the evaluation were randomly selected from various departments of the university. Emphasis was given to select individuals who had no past experience of Windows 10. Ten volunteers were selected to perform specific tasks, five having past experience of Windows 7 and the other five of Windows 8 operating systems.

2.3 Testing Tool

To conduct the usability of Windows 10, we set a task set, used standard questionnaire and using Windows 10 operating system as testing tool.

2.4 Hypothesis Evaluation

Participant's performance rating on the basis of three categories:

- 1. Got it easily and quickly
- 2. Got it eventually
- 3. Participant Needed help

Task 1: Connect mobile and laptop using bluetooth

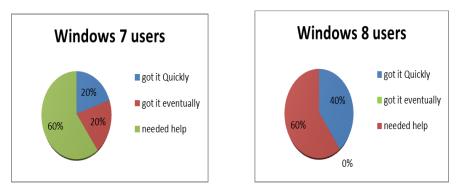


Figure 18: Connect mobile and laptop using bluetooth.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

2.5 Windows 7 users

Result: 3 users does not complete task by their own, 1 user complete task quickly and 1 user did it eventually. **Observation:** Bluetooth connect is our first task users try to understand Windows 10 structure. They facing difficulty for connect Bluetooth. Some users used alternative method they write Bluetooth in search bar and open Bluetooth setting.

2.6 Windows 8 users

Result: 3 users did not start task by their own, two user complete task quickly.

Observation: Windows 8 user swiping in the right edge of the screen for finding Bluetooth, they also try to understand Windows interface in first task. Some users used indirect method write Bluetooth in search bar and open Bluetooth setting Figure 18.

Task 2: Send email with file attachment using built-in application mail

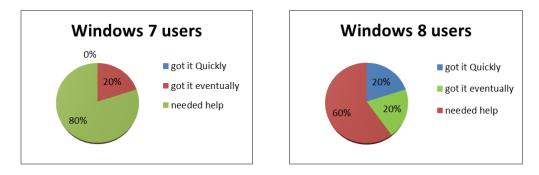


Figure 19: Send email with file attachment using built-in application mail.

2.7 Windows 7 users

Result: 4 users did not start task by their own, only one user complete task eventually.

Observation: Sending mail from Windows built-in application is completely new feature for Windows 7 users, all users need help to complete task.

2.8 Windows 8 users

Result: 2 users did it quickly, 2 users did it eventually and 1 user needed help.

Observation: Windows 8 have built-in application for sending mail. Windows 8 user faces fewer problems as compare to Windows 7 users Figure 19.



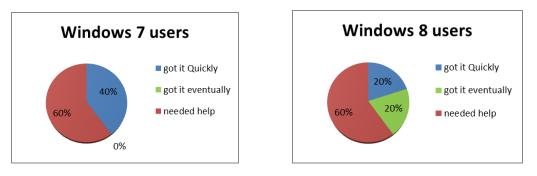


Figure 20: Surf web page in new browser edge.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

2.9 Windows 7 users:

Result: 2 users did it quickly and 3 users failed to did it by their own. **Observation:** edge is a new for Windows 7 and also for Windows 8 user. The user confuses to understand what is edge? They fail to find edge. They see edge logo but they think it is explorer. They need help for finding edge

2.10Windows 8 users:

Result: only one user search edge quickly. 3 users need help for complete task and one user did it eventually. **Observation:** edge is also new for Windows 8 users. They also need help for searching edge Figure 20.

Task 4: In edge create Web notes.



Figure 21: In edge create web notes.

A web note is a completely new function. This function use to edit text on web page, e.g. height light text.

2.11 Windows 7 users:

Result: 1 user failed to complete task and need help, 2 user complete tasks eventually and 2 user complete tasks quickly.

Observation: The users easily find web notes because it logo with pencil and paper, indicate edit something.

2.12Windows 8 users:

Result: 3 users did not complete task by their own, one user complete task quickly and one is done eventually. **Observation:** The user face same problem as Windows 7 user face. Because this browser is also new for Windows 8 users Figure 21.



Task 5: In edge open book marks

Figure 22: In edge open book marks.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

2.13Windows 7 users:

Result: 3 users failed to complete task by their own, 2 user complete task eventually.

Observation: The user face problem because bookmarks word change as favourites and the location of favourite's button is different as compare to other browsers.

Windows 8 users:

Result: 3 users did not complete task by their own, one user complete task quickly and one is done eventually. **Observation:** The user face same problem as Windows 7 user face Figure 22.

Task 6: Search file using search bar

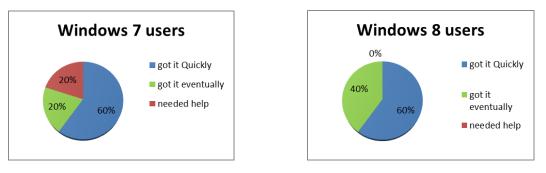


Figure 23: Search file using search bar.

2.14Windows 7 users:

Result: 1 user need help for complete task, 1 user complete task eventually and 3 users complete it quickly **Observation:** The users not face problem for this because they used search bar when they perform other task e.g. in send mail task user use search bar for search mail application.

Windows 8 users:

Result: 3 user complete task quickly and 2 is done eventually.

Observation: The Location of search bar is change, initially Windows 8 users face problem to locate Windows 10 search bar Figure 23.

Task 7: Create Virtual Desktop

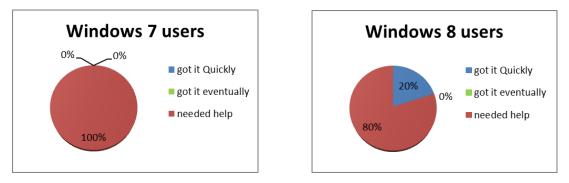


Figure 24: Create virtual desktop.

2.15 Windows 7 users:

Result: 4 users failed to complete task on their own, 1 user complete task eventually.

Observation: Virtual desktop is completely new for Windows 7 and 8 users, they need help to understand Virtual desktop.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

2.16 Windows 8 users:

Result: 3 user complete task quickly and 2 is done eventually.

Observation: Windows 8 users also not familiar with Virtual desktop. They also need help for understand Virtual desktop. Windows 10 does not give any document or hint for understanding Virtual desktop Figure 24.

Task 8: Switch between Virtual desktop.

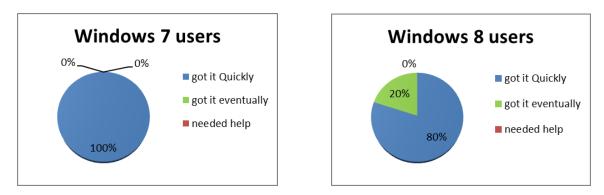


Figure 25: Switch between virtual desktop.

2.17 Windows 7 users:

Result: all users do it quickly.

Observation: after user understand what is Virtual desktop they easily find how to switch from desktop 1 to desktop 2.

Windows 8 users:

Result: 4 user complete task quickly and 1 is do it eventually Figure 25. **Observation:** Windows 8 users also easily switch from desktop 1 to desktop 2.

Task 9: Edit image using built-in application photos

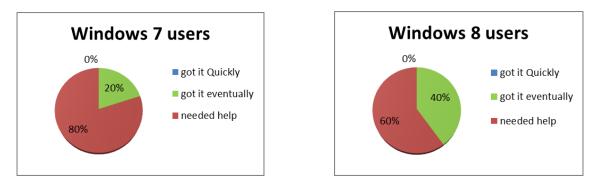


Figure 26: Edit image using built-in application photos.

2.18Windows 7 users:

Result: 4 users failed to complete task on him own, 1 user complete task eventually.

Observation: The users of Windows 7 failed to understand that where is picture editing tool, because, Windows 7 operating system have not any picture editing software. Once user open app after getting help, easily find how to edit, because its pencil logo is a good design for understanding its functionality Figure 26.

2.19Windows 8 users:

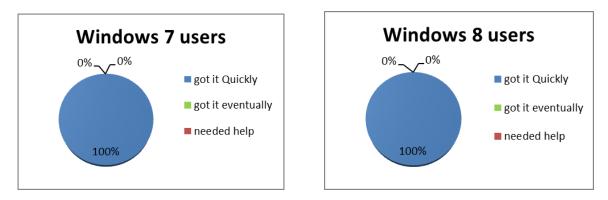
Result: 3 user complete task quickly and 2 is done eventually.

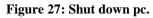


(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

Observation: The users of Windows 8 fail to understand how to edit picture using built-in app. But the user who used Windows 8.1, eventually find how to edit picture because Windows 8.1 also have this functionality.

Task 10: Shut down pc.





2.20 Windows 7 users: Result: all users find it quickly. Observation: Windows 7 users do it quickly.

2.21 Windows 8 users:

Result: all users find it quickly.

Observation: The problem of Windows 8 shut down button location is solved in Windows 10. Windows 8 users also do it quickly Figure 27.

		Windows 7 users		Windows 8 users	
		Ν	%	Ν	%
	Strongly Agree	0	0%	3	60%
	Agree	0	0%	2	40%
I Think I would like to use this system.	Neutral	3	60%	0	0%
	Disagree	2	40%	0	0%
	Strongly Disagree	0	0%	0	0%
	Strongly Agree	3	60%	0	0%
	Agree	1	20%	1	20%
I Found that system unnecessarily complex.	Neutral	1	20%	4	80%
	Disagree	0	0%	0	0%
	Strongly Disagree	0	0%	0	0%
	Strongly Agree	0	0%	0	0%
I thought the system was	Agree	2	40%	3	60%
easy to use.	Neutral	1	20%	2	40%
	Disagree	1	20%	0	0%

III. QUESTIONNAIRE AND USER SATISFACTION



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

	Strongly Disagree	1	20%	0	0%
	Strongly Agree	2	40%	1	20%
I Think that I would need	Agree	2	40%	0	0%
the support of a technical person to be able to use this system.	Neutral	1	20%	1	20%
	Disagree	0	0%	2	40%
-	Strongly Disagree	0	0%	1	20%
	Strongly Agree	2	40%	3	60%
I found the various function	Agree	1	20%	1	20%
in this system were well	Neutral	1	20%	1	20%
integrated.	Disagree	1	20%	0	0%
-	Strongly Disagree	0	0%	0	0%
	Strongly Agree	1	20%	1	20%
I thought there was too much inconsistency in this system.	Agree	2	40%	0	0%
	Neutral	1	20%	2	40%
	Disagree	0	0%	2	40%
	Strongly Disagree	1	20%	0	0%
	Strongly Agree	0	0%	0	0%
I would imagine that most	Agree	2	40%	0	0%
people would learn to use	Neutral	0	0%	4	80%
this system very quickly.	Disagree	1	20%	1	20%
-	Strongly Disagree	2	40%	0	0%
	Strongly Agree	1	20%	0	0%
I found the system very cumbersome to use.	Agree	2	40%	2	40%
	Neutral	2	40%	2	40%
cumbersome to use.	Disagree	0	0%	1	20%
-	Strongly Disagree	0	0%	0	0%
	Strongly Agree	1	20%	0	0%
-	Agree	0	0%	4	80%
I felt very confident using the system.	Neutral	2	40%	1	20%
uie system.	Disagree	1	20%	0	0%
-	Strongly Disagree	1	20%	0	0%
	Strongly Agree	2	40%	0	0%
I needed to learn a lot of	Agree	0	0%	2	40%
things before I could get	Neutral	3	60%	0	0%
going with this system.	Disagree	0	0%	2	40%
	Strongly Disagree	0	0%	1	20%

Table 1: Questionnaire and user satisfaction.



(A High Impact Factor, Monthly, Peer Reviewed Journal) Vol. 5, Issue 11, Novemver 2017

The Table 1 shows the rating and satisfaction of user. The score calculated using Brooke's System Usability Scale. The rating shows that Windows 8 user found Windows 10 more useful than Windows 7 users.

IV. RECOMMENDATION

As an attractive offer, Windows 10 has emerged as a free upgrade for the users of Windows 7 and Windows 8. Satisfied and happy users of Windows 7 or Windows 8 can upgrade at their own convenience. Windows 10, with its many good new features, can still prove to be a risky deal for outmoded systems or peripherals. Upgrading to Windows 10 may halt hardware with driver issues; users should patience to upgrade after they have been resolved in upgrades. For Windows 7 users, Windows 10 may prove inept, contrary to appearance. It appears and performs quite complicated and often tricky for the new inexperienced user. Privacy issues tend to pop up too, which might many people would not appreciate. Recommendation for users of Windows 7 or Windows 8, getting automatic upgrade notifications, should show patience for the upgrade, but reserve their copy online. Waiting a while would have its benefits, or at least make a backup of their system first, just to be safe.

V. CONCLUSION

Windows 10 is a new upgrade for Windows user. Since it's new, its evaluation and feedback matters for the user. Free version of Windows 10 is an attraction for new users. For the evaluation of Windows 10, Windows 7 and Windows 8 users performed the given task set which concluded that our hypotheses were correct. Many features were new for Windows 7 user and they found difficulty and time taken in using them. Windows 10 has a lot of useful new features, as well as significant improvements to old features, compared to Windows 7 and Windows 8. Accessibility evaluation showed there are many built-in technologies which are improved from previous Windows operating systems. For Windows 8 users, Windows 10 has the improvement in stability, security and power saving. Windows 10 UI is a mixture of Windows 7 and Windows 8 UI. From our research we concluded that it's better to wait, if you don't have any issues in using the previous Windows.

VI. ACKNOWLEDGMENT

We thank to Almighty Allah who gives us the strength and ability to think, work and deliver what we are assigned to do. Secondly, we would like to acknowledge our teacher, Ms. Narmeen Shawoo Bawany, for their supervision and guidance which encouraged us throughout our research. Her patience and guidance helped us in completing our research on time. We are also grateful to the students who spare their valuable time, and their cooperation and helped us in compiling our results. Without their contribution this study would not be possible. We are also very grateful towards our family members for their moral support and patience during the research work.

VII. REFERENCES

- 1. DC Julio, Exploring new ways of Usability testing for an E-Science/Scientific research application.
- 2. H Mike, Windows 10 Features by Edition. Beginning Windows 10 Apress 2015: 589-592.
- 3. H Mike, Connecting to Networks and the Internet. Beginning Windows 10 Apress 2015: 69-103.
- 4. H Mike, Maximizing Your Productivity. Beginning Windows 10. Apress, 2015: 255-295
- 5. SA Morten, NV Henrik, et al. Usability in open source software development: Opinions and practice. Information technology and control 2006; 35:303-312.
- 6. What Are Critical Issues? Definition and Meaning. BusinessDictionary.com. 2015.