Multitasking in a Technology World: Benefits and Drawbacks

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A piece of technology equipment is in the hands of almost everyone today, that draws our attention to plenty of information that is shared, communicated, created and accessed quickly. This promotes the engagement of several tasks and activities that and draws to be achieved at one time that is considered as multitasking (Buser & Peter, 2012, pg. 2). With the rise of technology advances and usage within the present generation, multitasking is a myth that saves time and has an ideal benefit or has adverse effects for both education and in the workplace environment. With different viewpoints on multitasking performed in certain tasks, multitasking can be productive and challenged to do more work that saves time along with the drawbacks that build up stress, and the effects of cognitive overload. Multitasking within the technology environment is paying attention to the task at hand, which will depend on each individual and how they incorporate attention that drives them to their daily tasks.

Multitasking in a technology world along with benefits and drawbacks was selected to analyze as the choice of my article. Having long years of experience with the same area of functions, catering for the information technology task of operations by incorporating multitasking to complete jobs on time, while taking full responsibility for the assignment multitasking was the only way out. Multitasking has become more and more common in the modern work environment, within the younger generation and college students. It is also believed that women are better at multitasking and it is universally accepted although scientific evidence seems to be missing (Buser & Peter, 2012, pg. 2).

Multitasking is the most preferred and efficient way to get a job done faster with the completion time shorter. Multitasking allows people to cope with ever more complex environments by handling multiple tasks through task switching and is a critical human behavior (Spink, Park, Jansen & Pedersen, 2006, p. 2). Diverse viewpoints prevail in multitasking in

humans one indication that it supports the efficiency and productivity (Pollard & Courage, 2017, p.1) the other the interference of tasks with each other causes erroneous human actions (Sanjram 2013, p. 2) that leads to cognitive workload as cognition has processing limitations. For interactive technologies, multitasking behaviors do not provide an effective support either the technological aspects of designing and programming. The work that is related to computer hardware or any other technically related operation that simply performs one or more computer processes within the same time lag without affecting each task been performed, can allow simultaneous tasks and performance through time exchange.

Multitasking also has positive and negative stances of academic emphasis of the human cognition that pertains to memory. Handling multiple tasks could be more demanding to the memory than focusing on a single task due to the processing limitations of human cognition. Although this could depend on each individual and the job at demand. On the other hand, multitasking has often been misleading whether could or could not be performed by an individual. A person will be gradually pulled into multitasking activity with one's busy life, hectic and competitive. Similarly, multitasking activity could keep one active and a common need with a busy life schedule in our working environment.

Technology in the multitasking world

In a typical technology world, multitasking can be handled through web search engines, media, mobile technologies, short messaging services, and social networking sites. Today a multitasking generation has been created not only at home but in classrooms where higher education students have access to their own portable computers and smartphones and constantly connecting to social media and instant messaging. Being engaged simultaneously in multiple tasks activities during instructions are referred to as multitasking. (Demirbilek & Talan, 2018).

Through access capabilities of wireless networks and Internet-connected smartphones, one can be engaged in multitasking activities like web browsing and texting to social computing.

Facebook is in the head as a social network tool, the youth are becoming inseparable from not been connected to social media in their daily life and constantly connected while engaging in other daily functions. Students of today are been named multitaskers as they perform multiple tasks while doing their homework, or listening to a lecture while studying. From an organizational perspective, business operations are driven by technology to be more efficient. Ability to do several tasks like sending last-minute emails, while on call, signaling a visitor who has arrived at your desk, is some of the day to day tasks that are performed by the undivided attention. Many take the pride of being able to function by not been distracted by switching tasks from one to another in this digitized world.

The myth of multitasking

Many assume multitasking being capable to do several things at the same time. Able to accomplish more is an ability that one could be prude of but the myth of multitasking suggests that the brain is designed only to handle and focus on one thing at a time and disregard the rest around. Making decisions and solving problems are driven by our unconscious mind (Rall, 2015). It notes that when one's unconscious mind is solving a problem, the solution cannot come up to the surface, if two anxious jobs are on the plate, one accurately need a quieted mind to solve these kinds of issues unless through experience one decision is influenced by the other and all the work leads to important inborn perceptions. Through experience, we make a decision depending on each situation.

On the other hand, exercise changes how the brain works, we make good decisions when we are materially fit, blood flow to the brain increases and receives more glucose and oxygen that help problem-solving, good reasoning and quick-thinking. It is also recommended that sleep

is an essential factor as loss of sleep cripples the thinking. Then again, stress and anxiety cause brain damage although motivation and staying alert are thought to be of short-term function as in the long-term, stress hormones can destroy and disconnect brain cells. Some claim multitasking could be a blessing for the youth, with an experiment conducted within two age groups. The older group matched the younger group in both speed and accuracy, the older group seems to have “faster fluid intelligence” and more adept at blocking out the interruptions and deciding what to focus on (Abate, 2009) which confirms that every age group is equally gifted with the skill of multitasking.

Even in 1930 researchers have studied the effects of multitasking and identified that while some students can effectively listen to the radio while studying, others were less effective. (Lin, Lee & Robertson, 2011, p3). On a media multitasking setting with the second screen, this offers users with the simultaneous display of more information and promotes efficiency in the activities of tasks (p. 2) as such the effects of learning can depend on the role setting (Shin, An & Kim, 2016, p. 19). These points out that human processing is highly constrained by strict capacity limitations. Those who multitask more often have difficulty filtering and do worse on the test of task-switching than those who multitask less. One new research indicates that one does not have to actively multitask to be distracted but being able to see a cell phone is enough to interfere with cognitive performance and social interaction (Rall, 2015).

Brain acquire learning in two different ways decorative learning results in gaining information that can be easily recalled and applied to a variety of new and unfamiliar situations. Procedural learning is automatic, almost subconscious limited to new situations. Procedural learning is less capable of manipulated, organized, and applied to new and unfamiliar situations than decorative learning. Multitasking changes the manner of how people learn and retain information. Accordingly, learning is stored in different areas of the brain and there could be serious limitations and future applicability of stored information (Abate, 2009).

Cognitive thinking

The creative and innovative thinking of our brains has been built on the foundation of knowledge. To solve complex problems the brain continuously draws knowledge, knowledge is the building blocks of innovation. By trying to be more innovative employees increase the value of the contribution to the business and take every opportunity to add to their own knowledge base. While we live in a fast-paced world with sensual overload, we need to have a well-designed and structured learning opportunities to best use the limited time available while building new knowledge (Van Dam, 2013).

For several, multitasking has been a way of living and working. It states that our brains are not wired for multitasking as most cannot apply the full conscious attention to one stimulus at a time. Although a small population which is called super-taskers can pay attention to two stimuli at a time. The working memory allows us to focus our attention on the tasks at hand and the long-term memory retrieves and stores information for future use. By trying to continually interact with the long-term memory where the information is stored or switching between different tasks an overload will result between the working memory and the long-term memory. Therefore, multitasking is discouraged because employees spend interrupting the tasks been performed to the new task and having to continue with the same task at a later stage (Van Dam, 2013). Many cannot perform more than one task which demands attention at the same time without dropping performance in one task, but a small population of super-taskers is capable of multitasking. These super-taskers can multitask and are less receptive to the harmful effects of cognitive load. (Medeiros-Ward, Watson & Strayer 2015).

Understanding the cognitive workload

Working in a software programming workplace and individual is involved in handling multiple tasks while opening multiple working screens. If the cognitive workload is not an

optional level of the individual while handling this kind of tasks it will create increased errors as per the cognitive workload. Multitasking is when an individual involved in the simulation performance of two or more tasks and trying to devote the attention to accomplish the desired task or goal. The cognitive workload is where information processing demands imposed by the performing of a task. The cognitive workload issue is the potential to increase in errors when handling multiple tasks of the cognitive workload is not an ideal level of an individual. Working in a complex environment that needs safe, and efficient operation of the interactive systems compels an individual not to exceed their capabilities when information is processed. However, the high cognitive workload will hold back the user interacting with the system that will ruin performance, (Sanjram 2013).

University children today are also be called multitasker; they too perform multiple tasks while doing their homework, like studying and listening to the lecture. There also seems to be issued with human cognitive processing abilities when student's try to capture or process new information. Also, cognitive load theory addresses the limitations of human's cognitive processing abilities when learning as switching from one task to another requires a change in focus and attention and redirecting activities. This is due to our ability to perform parallel tasks that are limited and resources being allocated to each sub-process working at the same time at one another's expense. While cognitive load increases due to frequent task switching, the performance decreases as a result of the simultaneous task and the completion of the task are delayed. Attending to more than one task at the same time lessons the influences learning performance in a negative way and adverse effect on studying (Demirbilek & Talan, 2018).

It is noted that handling a single task is easier than handling from multiple sources as this is cognitively more demanding. This is due to the reason that human cognition has processing limitations when multiple tasks are handled. As an example, doing programming, at the same time handling multiple windows, one needs to carry out multi-task demands. When one handles

multiple jobs like individual tasks, sub-tasks, and multiple tasks while keeping the current goals activated but also remembering future actions this becomes a task prioritization and task scheduling. This task scheduling is about executing, postponing, or completing the task. In this situation, managing these resources in order to complete them successfully all these processes have to be in mind by remembering to perform the acts at a particular time avoid failing any of the tasks.

This has some internal control when one task has been carried out and the individual is busy with the demanding task the other task comes to mind. This shows multitasking from the work that emphasizes the capability to maintain and realize the goals. It goes without saying that these could lead to human error which fails to execute or a delayed intention are very common. In forgetting to do a planned action can be caused by interference or being stressed in a common perspective of memory errors in our daily life which is performing a habitual action instead of the intended task. In a multitasking environment task interference with each other which creates errors are a great concern. (Sanjram 2013). The basic concepts linked to multitasking is attention, efficient tasks are handled by the amount of available attentional resources. If people have a great attention amount the individual focus or refocus will be easier as per task requirement. (Sanjram 2013).

Multitasking framework for cognitive information retrieval

Most students pay attention to Facebook or a short message system (SMS) during lectures while simultaneously trying to listen to the lecture. The attention of the student is divided into parts where the information being transferred will be difficult to be focused, due to the limited capacity model. Although some are considered “digital natives” who has multitasking experience and exposure to social media and SMS technology in their daily life. It is noted that allowing students to engage in non-class-related multitasking in the classroom, such as using

mobile phones and surfing on social media these opened doors to distraction and paving the way for lower academic performance. But when students are focused on studying outside the lecture the cognitive load on working memory was created. (Demirbilek & Talan, 2018). For most multitasking is generating cognitive overload, mentally taxing, and interference that overwhelms the limited-capacity attentional resources. (Medeiros-Ward, Watson & Strayer, 2015).

Developing brain in a multitasking world

Our overall memory system flows information in and out of short-term storage. Information that flows into our memory system by way of sensory registers enters our short-term storage. If this information is not transferred from short-term to long-term information gets lost if rehearsals through overt or covert repetitions are not done to retain information longer in short-term storage. As such, our working memory is incapable of handling highly complex interactions that are not stored in the memory elements before and likely to fail if needed immediately. Due to this, we must store knowledge in long-term memory. Experts are better for multitasking than beginners and practice and training increase brain processing speed, improve working memory and improve our ability to multitask (Lin, Lee & Robertson, 2011).

Multitasking with technology

Technology advance is evident now compared to the past and according to the present trend, it will progressively increase in pace with or without active participation. The mobility of everything is everywhere an event that occurs around the world has been relayed as it happens. From a few inches to as far away as the outer reaches of the galaxy the global communications enables digital communication, Web online is omnipresent in every part of our working and nonworking lives. The mobile is expanding almost in every direction and wherever you are, you are able to digitally reach anywhere (Oppenheim, 2010).

Multitasking with technology and media

Many teenagers multitask with technology and media, it is essential for educators to apprise them with these mediums. If they have not used blogging, have not sent an instant message to a friend, or do not know what LOL means or not sure, what is emoticon is, they are not living in the twenty-first century. Students should familiarize themselves with the tools they have to be a success in this uncreatively wired and unwired world. Providing them with access to technology will bridge the gap and deepen their opening between having and have not (Adams, J. (2012)

There is no boundary for technology use, and millennials have easily integrated technology and use the phone to do most of their work. Multitasking is something that the younger generation does with great ease from watching TV, carry on multiple instant message conversation and also interacting with others in a room. Technology has tempted all ages to be multitaskers who are emotionally satisfied, some are productive and some being appearing to be productive. With the technological advance that is happening daily, one is able to integrate devices, services, and platforms together which is extremely helpful in trying to get the full benefit to enhance multitasking.

Multitasking in a learning environment

Quickly altering between different tasks in the learning context has been exposed to students. Students learning styles have been changed grammatically by gaining access to these media technologies. Although the negative impacts of heavy media multitasking are present some find that heavy media multitaskers could have better performance on multisensory integration tasks. Media multitasking and the impact on learning are closely connected to learning concepts, theories, and frameworks which include time-on-task, self-regulation, expertise, and multimedia learning. Learning new things is reliant on working memory although learning centered on habits or conditioning is not sensitive to working memory. The working

memory is the most important predictor of multitasking performance. Certain brain circuits that could modify new media exposure by a person's constant need to switch between tasks and dealing with interruptions essential in media multitasking. The brain could also change with habitual multitasking and multimedia experience, and improve self-regulation through meditation and other techniques.

Performing multitasking searches on the web could be the result of accessing a web search engine at a particular moment and aggregating several searches during one interaction (Spink, Park, Jansen & Pedersen, 2006). Multitaskers, browse the surface and move on to the next information although they pay attention this could be partial, they control their own behavior and emotions which reflects self-regulative abilities to carry out long-term goals. With regard to sound background on people's cognitive task performance, the interactions between age, gender, task, and environment showed that a quiet environment would not be the best environment for learning. On virtual collaborative learning displayed complex relationships between collaboration, problem-solving, multitasking and abilities. The world has become more and more screen-saturated as digital technologies become omnipresent and pervasive in our daily life, and student's daily life as social life is combining with their academic life, although these technologies enhance learning there is also negative distractions and destructive side of technologies (Lin & Parsons, 2018).

As a substitute for laptops for occasional usage, the smartphone and tablets are being used for household use. Due to this reason, a mobile application with the second screen has increasing attention from the users. These are now been more interactive and used as watching TV. Using media simultaneously is not new as people feel a sense of fulfillment when they multitask or watch television while surfing the web. As of now, one's emotional fulfillment is driving people to multitask. The use of the second screen provides the user with simultaneous access to more information and efficiency of the arrangement of the tasks. The second screen

provides enhance information processing and execution of the tasks and covers the concept of media multitasking in the multimedia context during learning. The second screen also helps users to achieve takes more efficiently.

In a learning setting, there are low-element interactivity and high-element interactivity of tasks. The low-element interactivity tasks can be completely understood and learned it does not have to be held in the working memory. With the high-element need interactivity, multiple elements need to be handled in the working memory as such people are believed to multitask in activities involving low-element than high-element interactivity tasks. As an example, an expert driver with the ability of multitasking believed to be low-element interactivity due to the years of experience. (Lin, Lee & Robertson, 2011).

Media multitasking

Media multitasking is a common behavior in the learning environment and educators, instructional designers, technology leaders shape the way information is consumed (Shin, An & Kim, 2016). Successful learners have a belief in their abilities and try to achieve academically. Moreover, students highly anxious respond unacceptably to cognitive problems and exhibit cognitive and emotional stress instead of taking up the challenge. Both the emotional stress and unacceptable reasoning can ultimately hinder the learning performance. Media multitasking drives the external restrictions of information processing and captures attention changes to multimedia learning efforts within the multitasking behaviors, even more, the influence of the mobile in educational learning environment offers valuable opportunities for creating educational content (Shin, An & Kim, 2016). Students are compelled to use multitasking every day because they think it helps them, despite the negative effects (Carrier, Rosen, Cheever & Lim, 2015) as some complete online questionnaires along with time-use diaries of media use and other distracting tasks during study time.

The ability to prioritize and perform multiple tasks within a timely manner in the healthcare system has extremely valued (Adams & Rho, 2017). Task switching between multiple patients is seen in the emergency department, physicians and nurses. Although hand-on training on multitasking is not provided for the trainers through job observation of their attending role models this challenge has been developed. These multitasking and task switching training is provided in general surgical simulation and congestive heart failures to gain proficiency in multitasking. The theory of threaded cognition mentions that although some multitasking could be successful with time saved without loss of accuracy, in many cases it will not. The learning process is affected by everyday multitasking. The precondition to learning is one must be oriented towards the learning task but it's very easy for students to be distracted by their technological devices while studying (Carrier, Rosen, Cheever & Lim, 2015).

Benefits and drawbacks of multitasking

Our electronic and fast-moving world multitasking has become a new norm. The anxiety to do things faster, solve more problems, deliver more results and process more information does things much faster than the other activities is increasing within children and well as adults. As an example, a doctor while listening to the patient checks medical records, drivers' text while driving or talking on the phone is not new some of these have taken place even before technology. These are effortless as long as these are not mentally demanding and physically incapable to handle multitasking can be effortless. (Adams & Rho, 2017). This displays simulation is possible and leads to better performance during the periods of multitasking.

Although multitasking is defined as engaging in multiple tasks concurrently, it seems that humans do not attend to multiple tasks at the same time (n.a, 2017). It is that we switch between tasks rapidly and we do not attend to more than a single task at a time. As such could multitask be mealy an opinion or an illusion. There could be instances that we take notes at a meeting

which is a single task while listening to the meeting which is multitasking. Some perceive they could be good at multitasking although there could not be aware of the extent multitasking could hinder their performance on many tasks (n.a, 2017)

Multitasking empowers the high-level productivity that is essential for successful completion in modern work in a learning environment. The idea is that multitasking promotes mental flexibility that can change how we learn and retain information. Especially this is among children and youth whose neural plasticity is comparatively high (Courage, Bakhtiar, Fitzpatrick, Kenny & Brandeau, 2015). Then again multitasking shrinks' performance when tasks are produced in a hurry with other interference, a distraction which produces errors, lost time and mental stress. Multitasking can also result in strategies for improved efficiency, the way information is processed and enabling more things to get done and do more with less in one day and this can foster creativity.

Due to the increasing demands to care for multiple patients simultaneously health care and medical specialties demands multitasking as a core competency. Although trainers start with high error rates multitasking simulation has demonstrated success in reducing error rates. With the variety of multitasking activities and the complexity of activities handled as individual task and situational factors predicts that multitasking is difficult. There is evidence that working memory capacity or how well an individual can control attention and maintain information in an active, quickly retrievable state is the central importance to effective multitasking (Pollard & Courage, 2017)

Our life is now competitive and hectic which leads us to do more than one task at a time and getting plenty within the limited time. Just like our body needs exercise to stay active and healthy our brain needs exercise too, by multitasking and being continuously engaged with activities helps our brain to process and helps the mind to stay strong (n.a, 2018). Today's

entrepreneurs need multiple skills to succeed in business, and the present generation has them all with the fast-changing tech-knowledge world. The ability to carry out multiple roles that display strengths and positive attributes will help carry out the task and help to be more competitive.

Due to frequent of shifting task in the airline industry and multitasking has been found to have contributed to omission during preflight checklist among airline crews led to deadly crashes and it is suggested that although airline staff is asked to multitask overall it is not recommended as a training model (Adams & Rho, 2017). While in the classroom multitasking behavior may create implications while dividing one's attention into small parts that have significant implications when young people learn, understand the world, socialize, reason, and do creative work (Adams 2012)

Modern-day multitasking

In this modern-day society, multitasking is essential, especially among the youth who are extensively engaged in media multitasking when learning requires a long duration of focusing attention-studying texts and listening to lectures, electronic devices are providing a platform for losing focus via multimedia multitasking. (Carrier, Rosen, Cheever & Lim, 2015). Trying to do more done within a fixed amount of time, addiction to the internet or cell phone, desire to communicate with others, listening to a boring lecture and fear of missing outdraws the attention with the beeps and vibration are some of the possibilities of distraction.

But some are proud of being skilled to assume multitasking, being able to do several things at the same time which helps to carry out more (Rall, 2015). Also, a small proportion of the population called "super-taskers", can pay attention to two stimuli at one time (Van Dam, 2013). These super-taskers could complete two tasks like driving and cell phone use as effectively as each task singly, Exclusive multitasking ability is less vulnerable to the adverse efforts of cognitive performance differences in single-task conditions or to chance instability,

they seem to have a unique genetic feature that could be related to more efficient information processing in these individuals. (Courage, Bakhtiar, Fitzpatrick, Kenny & Brandeau, 2015). This clearly shows that these super-taskers have a goal in front of them and with attentional control they have the ability to avoid distraction. With the present generation of the technological era, the people are habituated in carrying on the simple task of scrolling with one hand through the Blackberry while checking in to the laptop and eyeing the television which is a sign of overload this being in between our busy schedule is also called multitasking (Cowen, 2009). Without doing three different tasks, one engages in the three tasks at the same time trying to grab information which could be news, cooking, health care reforms or future prospects. This is made possible with the Web.

While working for the UN, several tasks were performed simultaneously which involved configuring about six new PC's simultaneously, attending to my daily e-mails, answering calls from users, while also rectifying systems problems for the user. Although many critics charge that multitasking makes us less efficient lowers the cognitive performance and multitasking will disappear soon, claiming it does not make sense to continue tasks simultaneously, multitasking is flourishing with or without our knowledge, and so do we. There seems to have plenty of lab experiments to show that distracting people reduce the capacity of their working memory and thus damages their decision making. It is harder to display that multitasking, results from the choices a control its individual and does cognit harms. As such multitasking is not a distraction from our main activity. It is one of our main activities. A swift multitasking society with a lot of innovation and high achievers looks to be a perfect match. (Cowen, 2009). If one is able to honor a calendar, which relies on effective time management than having them all on the mind, distinguish and prioritize work by what is important and what is not, keep all similar activities together to achieve, giving full attention to the task in front and focus on the specific task, this increase the efficiency to finalize tasks quickly and ignore distractions.

Conclusion

In conclusion, multitasking defers according to the type of work you perform or the type of person you are. If your performance is engaged in problem-solving through decision making which involves the power of the unconscious mind, one needs silence as making decisions along with solving problems is determined by our unconscious mind (Rall, 2015).

Need a challenge, be more active, prioritize work, and achieve more in a limited time frame, goes for multitasking. Multitasking may work more stimulating which in turn could increase productivity (Buser & Peter 2012, p. 4) as one can continue making progress in an area when one runs out of motivation in another. The goals people set and the activities they choose to undertake also depend on their self-perception of their own abilities in relation to those tasks, those who enjoy multitasking need to do so in part because they believe they are good at it. The preference for multitasking with confidence is a skill that might interact to facilitate task performance (Pollard & Courage, 2017).

Even without actively multitasking if one is able to be distracted by the cell phone, the person has a lack of self-control. As per (Abate, 2009) the older group are able to adept at blocking out interruptions by deciding to focus and learning is stored in different areas of the brain. If all ages are more centered and not be sidetracked with other things that are around. Multitasking will actually be benefited. Having gone through endless multitasking activities in the past I wish to illustrate that through experience and by prioritizing the workload, not been distracted in the technology environment multi-tasking will be an added qualification that increases productivity, saves money and prevent delays.

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