**Technology in Psychology**

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Psychology’s definition is the study of the human’s mind, functions, and behaviors. The multifaceted study explores the cognitive depths of processing emotions and why the human species is considered as unique. Most people’s assumption of psychology is that it consists of a therapist or a psychiatrist, however, technology plays is a pivotal role in the massive field. According to Ruby Brooks’ Wrexham University article, “Emerging technologies in psychology,” she states:

“In fact, technology, has helped shape some of the most important advances in modern psychology, such as improvements around psychological: education, assessments, diagnoses, treatments, research, [and] knowledge-sharing. Significantly, technological advances have made an impact on both sides of [psychology].”

Starting from the beginning, neuroimaging techniques allow the observation of the human’s brain movement, which gave researchers insight on our cognitive process and how we respond emotionally. Neuroimaging techniques, such as, electroencephalogram machines, known as the EEG, are the mostly known in psychology. The National Health Service, NHS, states that EEG computers help the testing of a patient using “small sensors,” which are connected to the “scalp to pick up electrical signals [that are being] produced by the brain” (NHS). This machine is used to help analyze and keep track of conditions within the brain. If you are curious about health concerns like epilepsy, dementia, head injuries, brain tumors, inflammations, or sleep disorders, the EEG will help answer those concerns within “20 to 40 mins” (NHS).

The magnetic resonance imaging, or MRI, is another neuroimaging technique that is widely known in the psychology field. Unlike, the EEG, which normally focuses on the brain activity, the MRI creates images of the whole human body. The MRI “is a large tube” that creates images of the “brain and spinal cord, bones and joints, breast, heart and blood vessels, and internal organs” using “magnetic fields and radio waves” (NHS). This machine can also diagnose conditions within the body using the technology and help patients find a treatable way to conquer the condition. They also provide information on whether the treatment, given to treat the diagnosis, is generating progress. With both these neuroimages it helped advanced the exact mapping of the body and brain’s that are associated with the behaviors and the mental states of the patients. Neuroimaging techniques, such as the two mentioned, helped pave a way for patients to receive the proper treatment based on what the machines detect as the conditions.

As mentioned before, the neuroimaging techniques are much older technology methods that have benefited the psychology field. In most recent years, there have been newer computer-based technology that has created such an impact in the field as well. Psychologist MS Broudy explained in his article, “How is Technology Changing the Study of Psychology,” how teletherapy, an online counseling platform, is where patients can receive therapy remotely. This could be done through messaging, phone call, or a video conference (Broudy). Teletherapy has become a more popular way of clients being able to reach a therapist from home.

It allows the client to be in the comfort of their home while also receiving the help they need. For example, if someone is diagnosed with agoraphobia, anxiety disorder where someone experiences fear of going outside, they might find teletherapy as a great way to communicate with their therapist. Also, patients have direct contact with their therapist in case they need immediate counseling. Studies have stated the preference for video conferencing because it isn’t much of a difference from being in person. However, teletherapy methods like phone calling or messaging can result in the loss of “body language, tone, and nuance,” which are important factors between a client and their therapist (Broudy). All in all, it provides a comfortable alternative for patients.

In a similar way, apps used on a mobile phone, or websites are also ways technology has contributed to the psychology field. Broudy states:

“Although some apps are simply conduits to teletherapy services, many are hybrids that offer education, self-help, and online support as needed. The majority of internet-based therapy uses cognitive-behavioral principles. As a whole, internet-based cognitive behavioral therapy has exhibited positive results for a variety of psychological disorders, including depression, anxiety, and post-traumatic stress disorder (PTSD).”

Broudy’s examination on mobile apps explains how they used cognitive behavioral therapy in these apps to help patients with disorders. These mental help mobile apps also provide a wide array of resources for a patient’s mental health. It can contain psychology podcasts or articles about information that they are unsure of or topics they want to just expand on. Furthermore, these apps provide knowledge on different ways patients can manage their stress levels, different ways to calm down from an anxiety or panic attack, ways to meditate, or cognitive behavioral techniques. They help patients journal their emotions through mood trackers, which records any information on how the person’s emotions, behaviors, or any experiences that happened throughout the day. This method helps patients establish self-awareness that helps them acknowledge their triggers and what had caused them.

Not only has mobile apps been designed to help patients learn more and help find resourceful tools that will help them overcome their disorders. It has also helped Psychologist push information about the science to larger audiences through social media apps. The American Psychological Association (APA) published Helen Santoro’s article, “Researchers are using technology to communicate psychological science to a wider audience,” claiming that Psychologist are using social media to connect with the real world about psychology, which would encourage the “gap between citizens’ and scientists’” to close, hoping it would begin to get resources to people in need. Santoro also mentions psychologist, Julie Smith, who uses the platform Tik Tok to make videos informing her audience about disorder like depression. Explaining what depression is and how it can often go unnoticed. This is showcasing the contributions newer technology has. By impacting the way clinical psychologists attempt to reach the public. It creates an easy access to any of the findings they have, as well. This is also a great way for psychologist to interact with any generation, that is using social media, in learning how they can overcome any challenges they are facing.

In psychology, the most important factor of conducting the research is the participants used in the study. Researchers must ensure that they are using a large group of people to represent the population, while also being ethical. Technology has helped researchers find and use participants for their studies in many ways.

First, would be using social media and the internet to help researcher gain access to participants (Brooks). Researchers can post online surveys or self-questionnaires on social media apps or websites to collect information about their findings. For example, in Montclair State University, the freshman class had to take a New Student Seminar course, and, in that course, they were supposed to complete an “Incoming Student Skills Attitudes Questionnaire (ISSAQ).” The questionnaire took about 15-20 minutes and after it was completed students received a score. It was followed by a report that gave students an idea of the skills that they already have and aid them in their success as a student. The report also showcased the skills that will help them grow and show them online and on-campus resources as well. Digital assessments, like the ISSAQ, are beneficial because it provides information from all different parts of the nation and not just one area due to anyone having access to the form.

Second, would be devices that people are able to wear that monitor biometric attributes. Devices that you can wear like “smartwatches [or a] fitness tracker” that can help record information of their body (Broudy). For example, most females use an app called FLO and it’s a menstrual cycle tracker app that helps record information and this information is used to predict when their next menstrual cycle is going to be. The app also helps track other physiological signs like heart rates, activity levels, sleep patterns, or other information. It also provides resources if the app notices that you’ve logged multiple days saying you are feeling depressed. Devices like these help patients monitor their physical and mental well-being without being in a clinical setting. They provide feedback, instantly, for anything like stress management or sleep disorders. Not only do these devices help participants keep track for themselves, but they also help researchers. According to Broudy’s article, “technology, [like these], also allows researchers to perform measurements in natural settings rather than be confined in a lab.” This helps produce natural results that cannot be altered in a lab and reduces unethical factors that could be done on participants. Which helps provide a more accurate result in their studies, Broudy states:

“As technology advances, instruments are created which allow scientist to obtain larger samples and be more precise in their measurements. One of the great problems in psychological research is the replication of results. Pen and pencil self-report has been inherently unreliable. New instruments that exhibit improved accuracy and accessibility are easier to replicate.”

In addition, virtual reality is also contributing to the psychology division. It uses its computer-based environments to assist patients in exposure therapy. If a patient is diagnosed with any type of “anxiety disorders, PTSD, and subsistence abuse” it will “[implement] ...exposure for [these disorders] as a treatment (Broudy). For example, a patient that is diagnosed with the fear of spiders and uses virtual reality; it would generate an environment that includes spiders. That way the person can learn ways to overcome that fear without the use of an actual spider. Broudy mentions the benefits within this technology explain how someone suffering from drug abuse can learn what “triggers” the abuse and begin to focus on the “coping skills” to help them get better (Broudy). By allowing therapist to use virtual reality as an anxiety-inducer this creates an environment that they, therapist, can control which can be altered to help treat a patient’s exact challenge and making it more personalized. Resulting in clients being more prepared or confident in overcoming their anxiety or any other challenge in the real world.

It may be shocking to some, especially to parents who believe too much gaming is not good, but it’s beneficial in psychology as well. Like virtual reality, gaming is another form of technology using a controlled environment that help people with their mental well-being. Deborah Bach, a writer for the Microsoft company, wrote an article called “Mind games: How Gaming can play a positive role in mental health,” where she explains the mental health benefits in gaming and how there was a study done within Microsoft’s Xbox Research Accessibility Community Feedback Program. She writes: “85% of respondents agreed gaming has positively impacted their mental health” and how “71% said gaming helped them feel less isolated.” Bach goes in further by explaining John Kieswetter’s story on how the death of his sister really took a toll on him. He begins to use gaming as a way to deal with the loss of his sister and how it has been helpful to his mental well-being (Bach).

There are many stories like this in Bach’s article on how gaming has created a therapeutic way to cope with the disorders that people have. There are even games that are created by creators who deal with mental disorders and want to be helpful towards people who have these disorders (Bach). Like the virtual reality, it helps provide treatment to people who have anxiety or depression in these controlled environments. Almost like, virtual reality and gaming go together with each other. It provides a way for people, who are dealing with these challenges, a way to calm down and escape the disorders they have.

In conclusion, the way technology intertwines with psychology highlights the impact it has had on the field. Helping to expand research, by revolutionizing it through methods such as neuroimaging, teletherapy, mobile apps, social media, or virtual reality using games. Making research more ethical and helping create natural results. These methods have their own of impacting and enhancing psychological understanding by helping to spread mental and physical well-being.

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