

Assignment # 1

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The Relationship between Psychology and Computer Science

There is a symbiotic relationship between computer science and psychology. While psychology contribute to understanding the development and use of computer system in various ways, understanding computer also help psychologists model and study. Human perception and social processes.

This is important when computer students acknowledge the contributions computer science has made to a better understanding of psychology.

For Example:-

Computer modeling is a widely used tool in cognitive psychology that enables psychologists to visualize assumptions about the functional makeup of mental events that humans cannot directly observe. For the past 50 years, psychologists have studied and studied the evolution and impact of computers.

Psychologists have also played an important role in the design and development of computers. To design, develop, and evaluate user-friendly technology, students must understand and consider how people perceive, remember, feel, think, and solve cognitive psychology problems. There is. It is also important to consider individual differences and social behaviour. Suppose an effective interaction between a people and a computer system, personality, and social interaction are to be achieved. Social psychology by understanding these topics in psychology, computer science, students will consider the skills and potential limitations of computer users and design more efficient (usable) and emotional (fun) computer systems.

Since the ultimate goal of computing is to create systems that aid,

enhance, or make up for the weaknesses of humans, there are numerous branches of computer science that increasingly rely on psychology. Five areas of computer science I have done research in (at least have sub fields that) rely heavily on human behavior sciences: human-computer interaction, cyber security, software engineering, programming languages, and education. (Looks like I'm drawn to the intersection!) So some understanding of human psychology is increasingly handy in the design of computing systems. Of course, there are many areas that don't rely on psychology at all: e.g., distributed computing is about mathematics and systems, not humans. However, even there, we ultimately create protocols for human use; therefore, we at least implicitly make statements about human expectations: e.g., humans expect some data to be kept perfectly in sync (say bank balances), are willing to forego precision on other data (say the number of Like's on a Facebook post), and furthermore, can be trained to move between one and the other. So ultimately, a person building a distributed system in practice is making assumptions about human expectations and trainability, whether they realize it or not.

Psychology and computer science are very closely related in fact they are closer than what we think of.

Below are the reasons:

Psychology is the study of mind and behaviour. Computer science encompassing all modern major programming languages (object oriented languages) is built upon mimicking the human (and animals) characteristics, behaviour patterns, way of improving the way they work etc.

- Small children learn from making lots of mistakes (like touching fire and then registering it in their mind).
- Artificial intelligence is a fully fledged computer field which does

the same (machines register their mistakes and rectify when encountered the next time).

- Humans learn, inherit and have their own basic characteristics.
 - Every object oriented language has the same concepts of having their own methods (characteristics), learning as well as inheritance from their parent classes.
 - Humans, when encountered with situations, issues or any such incidences in their lives, try to solve it by pinpointing to the root cause of the issue.
 - Any good computer program is built in such a way that it has mechanisms to pinpoint the root cause of breakdown of the program (by raising exceptions which are caught and shown to the end user, so that they can recover from the crash).
 - An individual human is part of Homo sapiens species. So when one wants to interact with Homo sapiens, they have to pick a single entity and interact with that particular human, nobody can interact with Homo sapiens in general.
- In any object oriented programming, when one wants to use any functionality of any class, they can only interact with an object of the class (never the class itself).

There are many more such examples, but the summary is that, since human mind is the back bone of computer science, they have mimicked their own behaviour patterns in the whole field it has gone to such an extent that if one talks about any robot in general, the first image that comes to anyone's mind is a human shaped robot.

Social Psychology Useful For Computer Science

Applied psychologists have been active in these areas for many years and often work in non-psychiatric departments (e.g., human computer interaction (HCI), human factors, and ergonomics). In addition to the basic areas of psychology and HMI, it is also important that computer science students learn how implementations and the social impact of implementations are assessed and considered. Use computer systems in your organization or society. The next section introduces how psychologists can support ethical education in computer science and examines the important role psychologists play in teaching research methods.

What is the Link between Psychological Science and Computer?

There are two ways to analyze this problem. In the sense of “the way, people think,” the relationship between computer science and educational psychology and the relationship between computer science and psychology.

To illustrate the difference, consider art and literature. There is no question that art and literature have a deep connection with human psychology, but they are still brilliant and noble.

Art and influential literature are created by artists and writers who have little or no psychology as a discipline and certainly haven’t used psychological research methods to create art!

How Does This Apply to Information Technology (IT)?

However, an important part of research in computer science is more or less determined by psychology. People, or at least, will eventually use the computer system will work for people. This should be kept in mind when designing the system and the objective of the research ultimately depends on human factors. In addition to research that is fully rooted in one area, theoretical work also aims to promote other theoretical work. System research to answer questions about improvements to other systems

of course, “guides” are generally ubiquitous. The system is designed to be fast, because inadvertently, response time’s greater than 100 milliseconds are considered slow. This is real psychological insight, but it is well known.

All other research, based on how well people actually perform on the project. In a way, psychology is critical. In another example, this is not the case.

The work is more closely related to human thought but not necessarily related to educational psychology or its research methods (like art!). The design programming language is a good example. In short, it is a discipline of design. You can use empirical methods such as psychology, but you don’t have to.

However, the best design examples rarely include extensive empirical testing in programming languages or visual design.

I also chose programming language design as an example because I think it’s closer to art than people think. Typography, in particular, is a good analogy. It cannot be denied that it is related to psychology. Still, most people who study writing do not have formal psychological training, nor have they adopted psychological research methods. CS is the same.

In fact, there are only two fields based on “formal” psychology: human-machine interaction (HCI) and software engineering. These

two disciplines are still based on psychological research and use research methods developed by psychologists. (User research and experiments conducted by HCI researchers will familiarize psychologists!)

Since psychology is a human study, it is natural to think that a computer cannot process it. However, this can be misleading. Like many areas of social science, psychology relies heavily on the use of computers. Psychologists need to be provided with the tools and abilities they can use to study human thoughts and behaviours. The scope of psychological research that exists in almost every area of psychological practice needs to be expanded.

Electroencephalogram (EEG) Imaging Technology

Electroencephalography (EEG) is an important imaging technique for the brain. It cannot be performed without using a computer to record and analyze the output. EEG is a technique for identifying abnormalities in the electrical activity of the brains of psychotic patients and those with psychosis. Brain cells use electrical energy to communicate. The EEG method can capture and record these electrical patterns in the brain on the skull's surface for tracking and recording. Normal brain activity produces electrical signals that create recognizable patterns. Psychologists often use EEG to diagnose and treat epilepsy and seizures. However, EEG can also identify the cause of many other illnesses, such as sleep disorders and blood pressure changes. General behavioural or language development issues. Psychologists can also use this feature when

assessing brain activity after severe physical trauma to determine if a patient has cognitive abnormalities due to injury.

Functional Magnetic Resonance Imaging (MRI)

Another important brain imaging technique that cannot be achieved without a computer is functional magnetic resonance imaging or functional magnetic resonance imaging. This process uses powerful magnetic fields, frequency pulses of sound, and detailed images of the brain (and other organs) to measure and quantify the small metabolic changes that occur when the brain is activated. FMRI is especially important in psychological research because it allows researchers to adopt specific brain parts to specific cognitive functions (reading, memory, speech, etc.).

Educational Psychology

Educational technology is a new field of educational psychology that focuses on digital media (such as computers) on education and child development. The focus of educational psychology research is the acquisition of computers to promote education. He works on digital whiteboards, video games, social media, and digital brainwashing programs. These cannot exist without computers and are at the forefront of current educational theory and practice.

Survey and Analysis

Computers are also important in psychological research, especially since modern psychological research is statistically much deeper. Computers are often used in combination with private data (such as SPSS or SAS) to analyze and analyze large amounts of data. Psychological studies often focus on long-term studies of large populations. Future researchers will need computer and software technology to advance their psychological research, build databases, and accelerate and be creative with these data.

Thoughts

Remember that computers are everywhere these days. However, computers are relatively innovative and have not been used in many areas, especially psychology, for a long time. There is a Relationship between Computer Science and Psychology. Computers have greatly improved all professionals and researchers' lives, but many computers' technical opportunities can overwhelm them. Therefore, many people should improve them as a tool, rather than designing them overly dependent on psychological methods and research programs.

Conclusions

I would like to conclude by reflecting on my experiences to offer some general tips for those about to embark on teaching Psychology to Computing students.

As with all interdisciplinary teaching (including service teaching), materials need to be adapted effectively to provide appropriate links

to the other discipline. In the case of Computing, Psychology materials need to be linked to topics taught on the Computing course and to show an awareness of the professional context of Computing. I have found that learners appreciate my understanding of the computing curricula and of topical issues in the computing press. It is important to deliver the materials at the correct level, taking into account the relevant intended learning outcomes and educational stage. At the pre-degree level, the emphasis needs to be on practical activities and workshops can be used to demonstrate how interaction design recommendations based on Psychology can be put into practice. Indeed, examples of poor design in well-known computer systems can be used to illustrate where Psychology has not been applied to interaction design! At undergraduate level, I have found that students appreciate more detail as to how research was conducted and they need to develop skills to allow them to consider different psychological methods to evaluate computer systems. At post-graduate level, students are interested in hearing about ground breaking research where Psychology is being applied to Computing, but also they appreciate discussing the philosophical debates in Computing. It is important not to over-whelm students (at any level) with psychological content but to provide web-links and references to support the concepts being covered. Similar to being prepared regarding the curriculum and educational level of your intended learners, some understanding of the profile of your intended learners can assist in developing Psychology materials for computing students. For example, the style of presentation of Psychology activities can be adapted to better match the Approaches to studying of computing students.

Finally, it is important to recognise that students will have a certain perception of what Psychology covers. When I first started teaching Psychology to Computing students, they used to be less knowledgeable about Psychology and tended to think Psychology was only concerned with treating psychological disorders. However, the knowledge and expectations of all students, including computing students, regarding the discipline of Psychology has

changed significantly - largely as a result of the media representation of Psychologists. In the last five years, reality TV shows frequently feature resident psychologists and many documentary programmes involve psychological consultants. As a result, it is useful at the start of any contact with computing students to briefly cover what is Psychology and what is not Psychology and to differentiate between academic Psychology and 'popular' Psychology. This helps to contextualise the wider role of Psychologists in the many areas of modern life relating to computing and technology.

The End