The development of professionalism and professional identity: the recognition and roles of intellectual humility, a growth mindset, and situational awareness.

Introduction

In the most recent edition of AMSJ, I discussed the concepts of professionalism and professional identity, and encouraged medical students to consider what they understood by them, and how they might influence their future practice. In this edition of AMSJ, I will discuss some of the other concepts that were mentioned: intellectual humility, growth mindset, and situational awareness. These concepts are integral to how students and doctors develop their beliefs and attitudes towards professionalism and professional identity, and I will outline in this article how they relate to clinical decision making, life-long learning, and working relationships.

Intellectual humility

Intellectual humility has been described as 'Having a consciousness of the limits of one's knowledge, including a sensitivity to circumstances in which one's native egocentrism is likely to function self-deceptively, sensitivity to bias, prejudice and limitations of one's viewpoint. Intellectual humility depends on recognising that one should not claim more than one knows. It does not imply spinelessness or submissiveness. It implies the lack of intellectual pretentiousness, boastfulness, or conceit, combined with insight into the logical foundations, or lack of such foundations, of one's beliefs.' [1] Put simply it means that people have 'knowledge of Ignorance'. When considering intellectual humility from a learning perspective, it could be described as a balance between the extremes of intellectual arrogance, and overconfidence in one's own opinions and intellectual powers, and undue timidity in one's intellectual life, or even intellectual cowardice. [2] This allows us as individuals to remedy headstrong decisions and reconsider incorrect interpretations, and ultimately allows interacting more constructively with one another.

The concept of intellectual humility can be seen to be mirrored within the context of ethical decision-making, and therefore clinical practice. If we consider the '4 pillars of medical ethics': autonomy, beneficence, non-maleficence, and social justice, non-maleficence or 'first do no harm' is often the most poorly understood. How can a doctor do harm, how can they act in a way that does not provide good? Many beneficial procedures that doctors perform and therapies that they provide inherently have associated risk, however the context of whether or not this risk is justified is whether the benefits outweigh the risks. The context where the risk outweighs the benefit is either when the procedure has no therapeutic benefit, or when the person providing the procedure is neither qualified nor skilled to perform it. This is where intellectual humility arises, in that a doctor must recognise that the task in front of them is beyond their level of expertise, and there is time and resources for it to be provided by another doctor. This is where a doctor recognises the limitations of their skills, and ultimately provides good by not doing harm.

Growth mindset

Experimentation is a vital part of learning, since when learners experiment they make mistakes, and making mistakes is vital to learning and for developing cognitive resilience. [176] This idea resonates with the work of Dr Carol Dweck who outlines the connection between experimentation and the development of cognitive resilience. Dweck describes how individuals can be placed on a continuum according to their implicit views of where ability comes from. Some individuals believe their success is based on innate ability; these are said to have a 'fixed' theory of intelligence. Other individuals believe their success is based on hard work, learning, training, and doggedness are said to have a 'growth' theory of intelligence. Individuals may not necessarily be aware of their own mindset, but their mindset can still be discerned based on their behaviour, especially in their reaction to failure. Fixed-mindset individuals dread failure because it is a negative statement on their basic abilities, while growth mindset individuals do not mind or fear failure as much because they realise their performance can be improved and learning comes from failure. [4] These two mindsets play an important role in all aspects of a person's life. Dweck argues that the growth mindset will allow a person to live a less stressful and more successful life. A pictorial explanation of the quotes and thoughts that accompany the fixed and growth mindset are seen in Figure 1.

Figure 1: A comparison of the thoughts associated with a growth mindset and a fixed mindset

When considering Dweck's theory, students who possess a fixed mindset believe their basic abilities are just fixed traits, and they only have a certain amount. Their goal becomes is to look intelligent all the time. With a growth mindset, students understand that their abilities can be developed through effort, good teaching, and persistence. This is important because Individuals with a 'growth' mindset are more likely to continue working hard despite setbacks, and an individual's theory of intelligence can be affected by subtle environmental cues. For example, learners given praise such as 'good job, you're very smart' are much more likely to develop a fixed mindset, whereas if given compliments like 'good job, you worked very hard' they are likely to develop a growth mindset. [4] In other words, it is possible to encourage students, for example, to persist despite failure by encouraging them to think about learning in a certain way. Therefore, once again the role of the facilitator in this learning

process is critical, since even with the correct environment of psychological safety, and the correct emotional arousal, the students still require the correct feedback to develop their growth mindset.

A growth mindset aligns closely with educational learning theories, especially the circumplex theory of human emotion and learning. The circumplex model of human emotion [5] suggests that if something is learned in a greater state of arousal, irrespective of whether the state of arousal is in a negative or positive manner, then the information is better retained. This knowledge is referred to as activated rather than inert knowledge. Circumplex theory also suggests that learning in highly activated states; is recalled when similar states are invoked, that positive emotion and mastery under stress can be anchored, is harder to erase. Figure 2 shows the graph of positive and negative human emotions with levels of activation and deactivation.

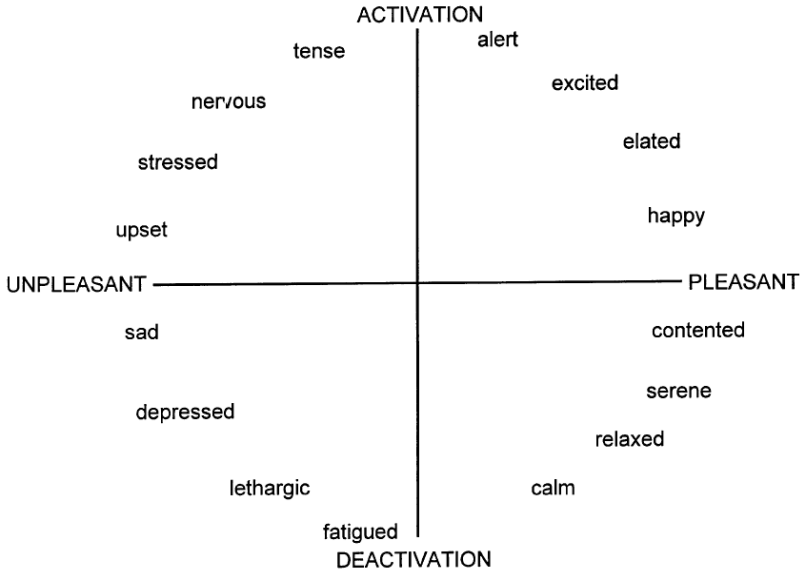

Figure 10. The circumplex model of human emotional learning

According to circumplex theory, people learn better if they are situated at the upper portions of the graph during learning. However, this state of arousal can be either unpleasant or pleasant, as seen in the diagram by the terms nervous and tense versus alert and excited. From the perspective of a growth mindset, people are more likely to feel nervous and tense when they are out of their comfort zone, and this will be usually when they are challenging themselves often with something they have not experienced regularly, which will be an ongoing experience throughout medical school and your future medical career. Challenging one's self implicitly carries the risk of failure, and therefore challenges can only be embarked upon when you possess the ability to accept the potential for failure: when you possess a growth mindset.

Situational awareness and emotional intelligence

Emotional Intelligence (EI), often measured as an Emotional Intelligence Quotient (EQ), describes a concept that involves the ability, capacity, skill, or a self-perceived ability, to identify, assess, and manage the emotions of one's self, of others, and of groups. [6] Emotional intelligence allows clinicians to gain greater rapport with patients that enables them to extract more valuable data, to make more informed clinical decisions. Situational awareness is defined as 'the perception of elements in the environment within a volume of time and space, the comprehension of their meaning, and the

projection of their status in the near future.' [7] People with good situational awareness have a good 'feel' for situations and people, and events that play out due to variables the subject can control.

There are three levels of situational awareness: perception, comprehension, and projection. Perception is about achieving the status, attributes and dynamic elements in the environment. This involves the processes of monitoring, cue detection and simple recognition, which leads to an awareness of multiple situational elements and their current states. Comprehension involves a synthesis of the disjointed elements of perception through processes of pattern recognition, interpretation and evaluation. This requires integrating this information to understand how it will impact upon the individual's goals and objectives. This includes developing a comprehensive picture of the world, or that portion of the world concerned to the individual. Projection is the highest level of situational awareness and involves the ability to project the future actions of these elements in the environment. This level is achieved through knowledge of the status and dynamics of the elements and comprehension of the situation and then extrapolating this information forward in time to determine how it will affect future states of the operational environment.

Individuals vary in their ability to acquire situational awareness thus providing the same system and training will not ensure that there is similar situational awareness across these individuals. Situational awareness also involves a temporal and a spatial component since time is an important concept in situational awareness. The individual's actions, task characteristics and the surrounding environment dictate the change in tempo of a situation. As new inputs enter the system, the individual incorporates them into this mental representation making changes as necessary in plans and actions in order to achieve desired goals. As mentioned earlier, a doctor with good situational awareness will extract more useful information form patients due to greater rapport, however this generation of rapport can be replicated across all relationships in the healthcare environment, making your working environment more pleasant, and fostering a better working culture. This is because the possession of good situational awareness usually translates to a perception of empathy.

Empathy has been defined as 'the feeling that you understand and share another person's experiences and emotions: the ability to share someone else's feelings'.[8] However there is disagreement about what true empathy is, and its role in healthcare, especially amongst physicians. Another definition is 'A predominantly cognitive (as opposed to affective or emotional) attribute that involves an understanding (as opposed to feeling) of patients' experiences, concerns, and perspectives combined with a capacity to communicate this understanding: an intention to help by preventing and alleviating pain and suffering is an additional feature of empathy in the context of patient care'. [9] The latter definition expands on the first definition by discussing the importance of cognition in empathy, rather than a purely emotional response. Halpern expands this further by suggesting that 'empathy is an experiential way of grasping another's emotional states, it is a perceptual activity that operates alongside logical inquiry.' [10] Empathy can be practiced and can be improved, and the three ways in which you can achieve this are: improve your ability to see another person's perspective – this requires listening and time, improve your ability to articulate how others are feeling – this requires listening and time, connect emotionally with other people – this requires listening and time. [11] The lesson is therefore very straightforward, if you wish to become more empathic, and improve your working relationships, give your colleagues time and listen to their stories. This will ultimately benefit you, since clinicians who possess greater empathy, suffer less from burnout. [10]

Conclusion

As mentioned in the previous manuscript in the recent AMSJ, as medical students you are being constantly instructed on how to be develop professionalism, and how to grow the correct professional identity. To achieve this you need to be aware of concepts that will allow you to develop and truly understand this, rather than just mirror the types of behaviour that are expected. There are of course more concepts to be aware of than intellectual humility, growth mindset, and situational awareness, however these are some of the most pertinent and some of the most beneficial to harness into your developing professional identity. Having a greater understanding and a desire to want to understand and utilise them can only improve your practice, therefore the care you provide to patients, and ultimately the way you live your life.

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