STUDENT PRESENTATION-BASED TEACHING TO PROVIDE TRANSACTIONAL ANALYSIS TRAINING TO PRODUCE EMOTIONALLY INTELLIGENT ENGINEERING GRADUATE STUDENTS

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Abstract

In the 21st Century, it becomes of utmost importance for the educator and learner to be mindful of the evolution and application of factors that govern the mental state. Many studies revealed that the success of a professional is strongly dependent on their emotion management skills to manage themselves and associated responsibilities in a demanding environment. Emotionally intelligent professionals are also able to handle challenging situations involving other people. These days many industries, research establishments, and universities that hire graduate students conduct specialized training to enhance their soft skills, mainly interpersonal skills, to make their employees perform at their highest potential. One can maximize the gain from soft skills if they are well aware of the state of human psychology developed in the form of emotional intelligence and positive intelligence. In the last two decades, the concept of emotional intelligence was created by professional personality coaching groups. These trainings are heavily attended by professionals engaged in marketing and organization leaders to enhance their capability in the workplace. However, emotional intelligence is mainly about being aware of the mental state and maintaining control of one's actions during various mental states, such as anger, happiness, sadness, remorse, etc. Aspiring graduate students in science and technology generally lack formal training in understanding human behavior and traits that can adversely impact their ability to perform and innovate at the highest level. This paper focuses on training graduate students about the popular and practical transactional analysis science and assessing their competence in utilizing this knowledge to decipher their own and other people's behavior. Transactional analysis was taught to students via Student presentation-based effective teaching (SPET) methodology. Under this approach, graduate students enrolled in the MECH 500 Class were provided a set of questions to answer by self-reading of the recommended textbook "I am OK You are OK by Thomas Harris." Each student individually answered the assignment questions and then worked in the group to prepare a group presentation for the in-class discussion. Three group discussions were conducted to present different views about the four types of transactions and underlying human traits. Before transactional analysis training, students were also trained in Positive intelligence psychology tools for a similar objective. After the discussion, students were surveyed about the depth of their understanding. Students also reflected their views on the utility of transactional analysis with respect to positive intelligence. More than 75% of students mention that they gain high competency in understanding, defining, and utilizing transactional analysis. This study presents insights for positively impacting graduate students' mindsets as they pursue an unpredicted course of research that can sometimes become very challenging.

Keywords: SPET, Positive Intelligence, Transactional Analysis, I am OK you are OK, Effective Teaching, Engineering Education

1 INTRODUCTION

College students' innovation and leadership capabilities and potential are primarily governed by their mental habits and attitude.

Figure 1: Maslow chart of hierarchy of needs

Students' learning styles and a natural propensity to problem-solving are found to be strong predictors of the level of their emotional intelligence. Hence, it becomes of utmost importance for the educator and learner to be cognizant of the evolution and application of factors that govern the mental state of a human. In many studies, it has been found that the success of a professional is strongly dependent on their skills to manage themselves and associated responsibilities in a demanding environment and to challenge situations involving other people [1-3]. These days many industries, research establishments, and universities conduct specialized training to enhance employees' interpersonal skills to make their employees perform at their highest potential.

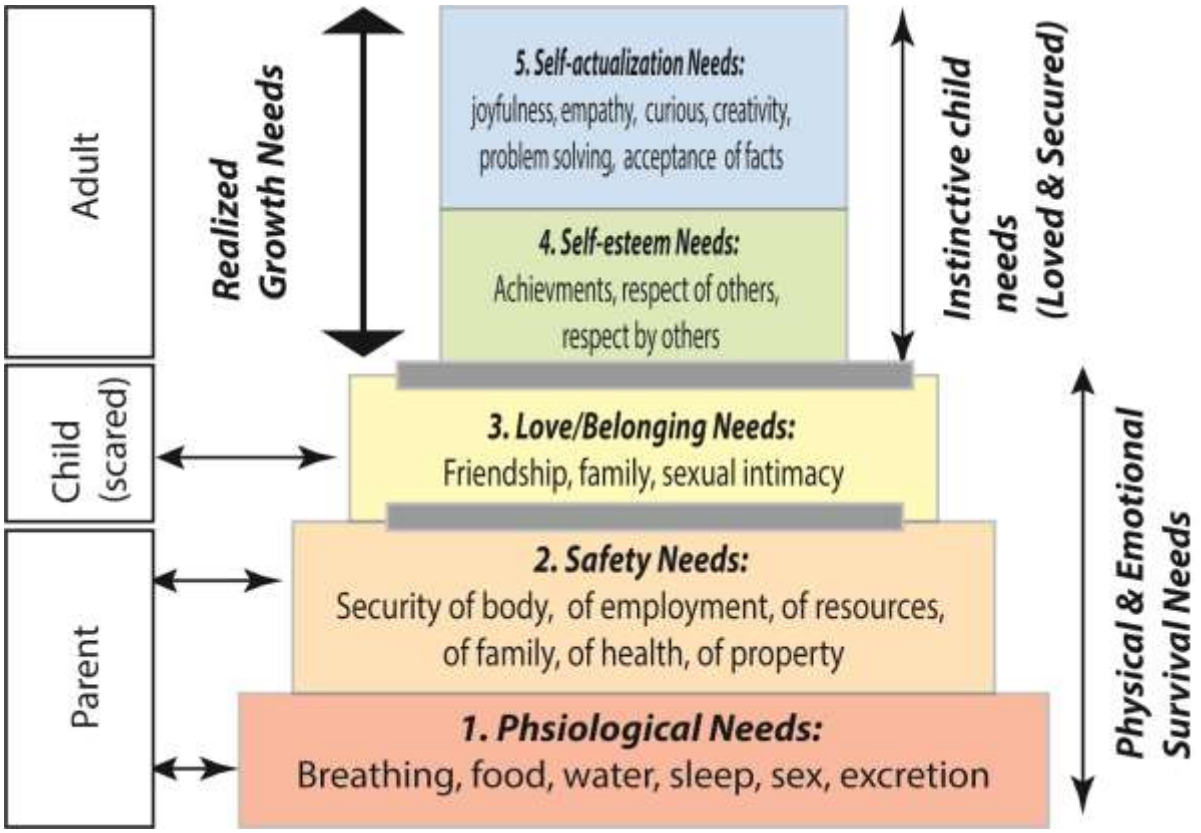

Figure 2: Parent and Child like automatic response resulting from childhood experience under different survival needs. Adult mindset is a conscious state that developed based on intensity and impact of survival challenges.

One can maximize the gain from soft skills if they are well aware of the state of the human psychology developed in emotional intelligence and positive intelligence. Maslow's pyramid of needs is an excellent reference to information about the nature of human motivations (Fig.1). Every human living under physical and emotional survival needs for a long time, mainly during their early childhood, is demonstrated to carry memory and mechanisms of dealing with threats and insecurities for the rest of their life [4]. According to state-of-the-art understanding in human psychology, human interactions are dominated by their automatic habits or self-defense mechanisms developed due to different types of threats faced in the past. For example, a person may behave like a parent (always focusing on self and protection of property and other security) or like a demanding child for the rest of their life. Due to the impact of habit and hidden defense mechanisms, most talented and gifted humans are unable to focus on their strengths as an adult (Fig. 2). A person with a "Parent", "Adult", and "Child" mental state interacts in different ways and is well explained in Thomas Harris's book [5] and also shown in Figure 3.

In the last two decades, professional coaching groups created the concept of emotional intelligence. Emotional intelligence is mainly about being aware of the mental state and maintaining control of one's actions during various mental states, such as anger, happiness, sadness, remorse, etc. Several decades ago, Oil and Gas industries realized the need for such training for their technical staff working on offshore plants. Being stuck for months with few people and demanding work associated with oil and gas products produced a challenging environment for technical staff to remain sane amidst conflicts and mental pressure [3]. Unfortunately, little attention is given to the psychology

training to develop emotional intelligence in engineering students who one day will handle demanding career needs while living a parallel personnel life full of experience that will impact their professional performance [1] and learning potential [6].

The need for psychology training is even more urgent and critical for graduate students in science and technology. Psychologically unprepared graduate students dealing with the long struggle in research projects may suffer mentally without communicating. The lack of formal training in understanding human behavior and traits can adversely impact their ability to perform and innovate at the highest level[6]. This paper focuses on training graduate students about the popular and practical transactional analysis science and assessing their competence in utilizing this knowledge to decipher their own and other people's. This paper shares insight into the practical approach to training students in transactional analysis as a module in a graduate course attended by students from multiple majors.

2 METHODOLOGY

Core concepts of transactional analysis(TA) was explained to students via student presentation-based effective teaching (SPET) methodology [6-8]. Under the SPET approach, 16 graduate students enrolled in the MECH 500 Class were provided a group of questions to answer by self-reading the recommended textbook "I am OK; You are OK by Thomas Harris" [5]. Each student individually answered the assignment questions and then worked in the group to prepare a group presentation for the in-class discussion. Four group discussions were organized to present different views about the four types of human transactions and underlying human traits categorized as Parent, Adult, and Child (PAC). Based on childhood and past experiences involving survival concerns, each and everyone gets some Parent and Child type traits. As we grow mature in general, humans start recognizing self-improvement areas and get out of the limiting effects of past experiences. The stage when a person can question their own and other beliefs and investigate the rationale behind human interaction is called the Adult stage. Based on what part of a human, Parent, Adult, or Child is dominating a transaction or interaction, four types of interactions or Transactional Modes are possible (Fig.3).

[1] I am OK; you are not OK

[2] I am not OK; you are not OK,

[3] I am not OK; you are OK.

[4] I am OK; you are OK.

Figure 3: Human interactions with other under Parent, Adult, and Child (PAC) state of mind.

Understanding the landscape of human interaction empowers one to gain self-consciousness and lead to a pleasing or least harmful outcome from a communication. All the students were needed to study the introductory chapters of I'm OK You're OK and show their understanding of the content by responding the following inquiries based on book content.

1. What are the four Transactional Modes?

2. How will a person behave if they are under the I'm OK, You're Not OK mode?

3. How will a person behave if they are under the I'm Not OK, You're Not OK mode?

4. How will a person behave if they are under the I'm Not OK, You're OK mode?

5. How will a person behave if they are under the I'm OK, You're OK mode?

6. What are the characteristics of the Parent?

7. What are the characteristics of the Child?

8. What are the characteristics of the Adult?

9. Which of the 4 modes listed above are associated with the Parent, and why?

10. Which of the 4 modes listed above are associated with the Child, and why?

11. Which of the 4 modes listed above are associated with the Adult, and why?

12. Between the Parent and the Child, which one is more emotionally oriented to themselves?

13. Between the Parent and the Child, which one is more focused on external emotions (what people think of you, what other people are doing, etc.)?

14. What events in life might lead to a person developing a Child trait?

15. What events in life might lead to a person developing a Parent trait?

16. What is contamination?

17. What can one do to further develop an Adult trait?

As an initial step, students individually prepared and submitted the answer to the above questions based on their understanding. To further strengthen their knowledge, students were divided among groups to work together with fellow students to make a presentation based on the above questions. For making group presentations as a team, the student shared individual understandings outside class with each other and decided on the best answer based on the group decision. Finally, the student group presented their group work in the class for discussion with other students and the instructor. Four group presentations were conducted over a ~ 3 hours period, and open discussions were conducted to grasp the various definitions and clear confusion. To grasp students' views about the Transactional Analysis anonymous survey was conducted.

3 RESULTS

Students were surveyed to understand their views about the transactional analysis and PAC proficiency level. The first question inquired students to rate their understanding of PAC. Sixteen participants answered this question. Total 73.3% of students gave a 4 (good) rating, and 7.3 % gave a 5(comfortable in explaining with example. It means 80.6% of students felt they had good knowledge of PAC. However,13.3% of students mentioned their understanding was average, and 6.7 % of students did not feel comfortable with the subject matter. This result suggests that SPET method used for teaching PAC successfully reinforced this knowledge.

PAC is the groundwork for establishing the various transactions humans perform with others (Fig.2-3). From the prior literature, students learned about the four basic types of transactions and provided their views about their mastery. Sixteen members rated their understanding of the four types of transactions. 60% of participants mentioned a high level of comfort in articulating four transactions. 6.7% of participants rated their ability to explain four transactions with an example. Overall, 66.7% of participants mentioned high competence. However, 26.7% of participants were in the developmental stage of developing a good understanding. 6.7 % of students were not clear. Out of 15 participants, ten students mentioned a sound knowledge of the four transactions.

Students were asked to reflect on their competence to understand their ability to identify four types of interactions described in the Transactional Analysis literature. Sixteen students responded to this question. The highest level of mastery was attributed to a student's ability to explain four types of transactions with examples. Out of 16, one student demonstrated this ability. Remarkably, ten students showed a high level of knowledge of four transactions. It means 11 out of 16 students mentioned an excellent understanding. Four students were neutral about their confidence level in explaining four transaction types. It is noteworthy that psychology is a very deep subject. Even though PAC education simplifies this topic for the general public, a significant amount of practice is required to gain a high degree of confidence. Hence, the data shown in Fig.2 matches the expected nature of the outcome from this short module.

Students were also surveyed about their abilities to connect four types of interactions or transactional analysis and ingrained PAC traits in people. A 52.9% of 16 students express confidence in relating four fundamental human transactions with the PAC. It is noteworthy that students' feedback matches the instructor's observation of student competence in their group presentation. Nearly 40% of the students still needed a better understanding of Transactional analysis related to the PAC attributes.

Parent (P) and Child (C) are two types of defense mechanisms that most humans utilize during their childhood to cope with emotional and physical survival challenges. However, the sad part is that P and C traits become automatic responses of many humans for the rest of their lives and prevent them from

realizing the highest human potential as self-aware explorers and learners. Students were surveyed if they could identify Parent trait-dominated personalities. Since this question is associated with direct observations since childhood and examples around us, students were comfortable responding enthusiastically and thoughtfully. Figure 4 shows that 25% of the class were able to answer with clear examples. 50% of students exhibited a sound understanding of Parent traits and their reflections on human interactions. Student survey data in Figure 4 matches with the observations of students' performance during group SPET presentation. Most of the students articulated the definition, attributes, and impact of Parent type defensive behavior in human interactions.

Similarly, we surveyed 16 students about their ability to articulate C defensive mechanism carried by a human. Figure 5 shows that 86% (14 out of 16) students mentioned that they feel confident in defining and understanding C-dominated personalities. Once again, this data matches what students demonstrated during a group presentation. Remarkably, one including one module of transactional analysis in a regular graduate course catalyzed a deep interest in human applied human psychology. Figures 4 and 5 show that most of the class was comfortable in identifying P and C limiting behavior in humans they may interact with or their dominating defense mechanisms.

We also surveyed students about their abilities to identify the Adult trait. The Adult trait is a stage that is reached after getting freedom from P and C defensive mechanisms that humans build under survival challenges. Adult state is also governed by effective utilization of the prefrontal brain that stores knowledge and is responsible for human creativity and problem-solving. Figure 6 shows that 13 out of 16 students express their confidence in defining and identifying Adult characteristics.

We also asked the student to respond to an open-ended question to gauge their level of understanding. They were asked the following question.

How can you strengthen the Adult trait of people you interact with based on your knowledge of PAC and the four types of transactions?

Here we present some selected responses that give insights into student understanding of Transactional Analysis and PAC.

Student #1: For example, keeping calm, minimizing emotional behavior, not replicating wrong beliefs or generalized statements our Parents used to make, keeping away from externalizing our feeling in actions, making the focus on what is in front of me rather than worrying about what is next, feeling empathy for other people I interact, etc.

Student #2: I will try to explain PAC as best as I can (in my own terms). I would also explain that although each personality is necessary for our interaction with others, we must determine which one is most useful in certain situations. This explanation may help others identify their Adult characteristics to 1)utilize the Adult personality more often (which will in turn strengthen the associated traits), and 2)lessen the impact of the Parent and Child personalities.

We also asked students the following question to test their proficiency.

“Give an example of an interaction when others are showing Child dominated communication."

Student-1: When someone is complaining they don't want to do something because they don't like the color of the seats? Emotionally driven answers.

Student-2: When someone has a demanding nature, is impatient. Like a person waiting for their food at a restaurant and it is taking longer, that person grows impatient, which can lead to irritation and rudeness.

Student-3: Having a conversation with somebody about a challenging situation and the person becomes so emotional and starts crying/weeping.

Student-4: Two (or more) people discussing music, video games, movies, etc., because it peaks their curiosity-driven and creative interests.

Student-6: I have a good friend who, whenever he doesn't get his way, just turns into a child

Student-7: In a situation where you are in a conversation with someone who is not happy that things are not going their way. Then they begin to express their displeasure by crying, throwing things or throwing a tantrum instead of using their Adult trait to keep their emotions in check and logically discussing their view with the individual/s involved to give them clarity or a better understanding of your point and accepting their corresponding view to gain consensus.

Student-8: "When I constantly show the dependency of others to finish, accomplish, or feel better. Constantly looking for the approval of others."

Student-9: "In this state, the individual frames themselves as inferior to others. This is the same way that children frame themselves when relating with parents and adults. I'm not OK; you're OK mode. "

Student-10: A perfect example is a current Audit in AZ over the election. In spite of all the empirical evidence, people continue to believe how they feel it should have come out is correct.

Student-11: When talking about a hobby, they would say I love to do this; this is something I love to do. Something along those lines. And when talking about something they dislike, they say, I hate this or I hate doing this.

Student 12: A child gets what he/she wants from his mother or father, then as an adult tries to manipulate the men and women in their love to get what they want.

4 CONCLUSIONS

This study provides details on teaching human psychology so that college students can understand. We do not claim students became proficient in PAC. Bur we indeed saw evidence they become familiar with a deeper understanding of factors that define human behavior and impact human interaction. SPET method made it possible to teach such complex topics in a short period via student active teaching method. According to the best of our knowledge, our efforts are initial efforts in teaching human psychology and its applications to engineering and science students. Understanding the nature of human interaction is undeniably an important factor in utilizing student learning potential and will lay the foundation for rational-minded, highly trained human civilization.

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