Charisma and learning: designing charismatic behaviours for virtual human tutors

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Abstract

Charisma as defined in the oxford dictionary, is the compelling attractiveness or charm that can inspire devotion in others. It is a powerful device of communication because it is the primary way humans signal interpersonal closeness, willingness to communicate and feelings towards one another. Without exception, charisma is very crucial in the learning process in individuals. It makes the teachers more influential, causing learners to listen more intently to what they have to say and subsequently boosting their learning performance at the end of the day.

Virtual learning has become a widely adopted phenomenon all around the world, with the aid of virtual humans (computer generated simulations of human beings), who unlike real humans, provide consistency in delivery of accurate knowledge, engaging role-plays and appropriate feedback. Furthermore, pedagogical agents have played a significant role in virtual learning, virtual tutors and companions falling under this category. Incorporating charismatic behaviors in virtual human tutors has become a quest for developers, due to their awareness on how impactful it can be in virtual learning. How can such behaviors be realized in a virtual character? Developers are incorporating charismatic traits in virtual human tutors which include: portraying a high degree of engagement with their student, proficiency in their subject matter, organized and very profound in their knowledge of the subject. Taiwanese authors researched on the topic of teaching and charisma. The Statistical results obtained supported the virtual human tutors' charisma has a positive influence on inducing the students' learning interest.

Feelings of isolation which may be faced by a student in online learning is overcome by the fully-present and approachable trait of the charismatic virtual tutor. Ability of a virtual human tutor to be charismatic boosts instructor immediacy; behavior that brings the instructor and the students closer together in terms of perceived distance.

Overall, we conclude that developers' endeavor to design charismatic behavior for virtual human tutors is advantageous to the highly advancing educational field and use of Artificial Intelligence in education.

Keywords: Charisma, virtual human tutors, virtual learning, pedagogical agents

1. Introduction

Charisma is a general term bequeathed to us by the German sociologist Max Weber, who studied the phenomenon assiduously. Charisma is a personal quality of presence or charm that compels its subjects.

In recent studies, researchers discovered that charisma exerts a positive influence on the students' personal interest and situational interest, hence software developers have taken initiative to incorporate charismatic qualities for their virtual human (Wang et al., 2020).

What exactly do you consider in developing charismatic qualities in learning? The ability to understand students especially those that are troubled and need you most, great listening skills and lastly profound knowledge of the subject being taught. With such qualities, the virtual human creates a consistent learning experience. Unlike real humans, virtual humans provide consistency; consistent delivery of accurate knowledge, consistent and engaging role-plays, and appropriate feedback. They also do not fatigue, have a neutral appearance, and are not subject to trainer bias.

The topic of charismatic behavior has a research tradition in sociology and psychology and increasingly trending in computation. In building a machine that people perceive as charismatic, a bias in human inference processes can be exploited, namely the fundamental attribution error: People tend to ascribe observed behaviors to internal factors like personality or character rather than to external factors such as situational constraints.

Before we can go any further, we should ask ourselves 'can charisma be learned?' The answer to this question is yes this is because charisma is a collection of behaviors hence it can be learned. If a human can learn how to be charismatic, why can't artificial intelligence?

Various researches on charisma have been conducted and analyzed and based on their findings having charisma in tutors has proved beneficial. So as to confirm this thesis we decided to carry out small research of our own.

2. Research

To determine the important characteristics to implement in a virtual tutor, we conducted research. The research was conducted in a learning institution in Kenya whereby students were subjected to a test after being taught by a charismatic teacher and a non-charismatic teacher. Each teacher had forty minutes to teach the same topic and another forty minutes to do the test. In the study, the main focus was on student engagement, proficiency of the teacher, teaching methodologies and effectiveness of the lesson (Bolkan & Goodboy, 2009).

3. The results

1. Student engagement
In the lesson carried out by the charismatic teacher, the student engagement was relatively better than the student engagement in the lesson with the non-charismatic teacher. The students were more interested in the topic and willingly answered questions in the class.

While in the non-charismatic lesson, the students paid less attention, they were drowsy and barely participated in the lesson. These results show the great impact of charisma in student learning (Richmond et al., 1987).
2. Proficiency of the teacher

The charismatic teacher seemed to be a natural and very professional in their work. They were familiar with the topic and even introduced new concepts. It was noticed that the teacher had a passion for teaching, the ability to listen well, had a sense of humor and even communicated effectively with the students. Such qualities are useful to implement in designing charismatic virtual tutors (Chi et al., 2001).

3. Teaching methodologies
While the non-charismatic teacher focused on using the lecture-based method, which reduced the interest of the students, the charismatic teacher focused on using kinesthetic learning (i.e using body movement and interacting with the environment), inquiry-based learning and project-based learning.
4. Effectiveness of the lesson
This is the most important part that focuses on the outcome of the results.
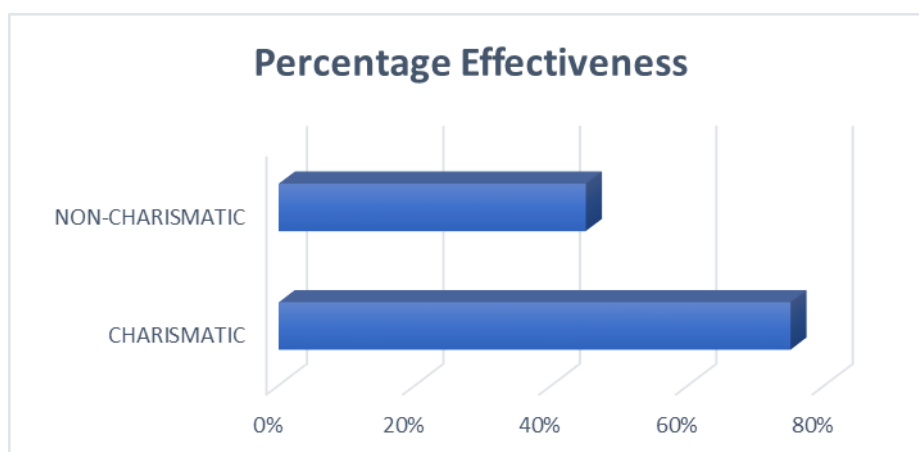
Graph 1

Graph 1 above shows the percentage effectiveness of the lesson towards the student's results. The charismatic teacher had a greater impact on the performance than the non-charismatic teacher. This shows that charisma is indeed an important character to be developed in virtual tutors.
5. Self-efficacy
Grahp 2 shows the self-efficacy of the students obtained from the ALIVE! Testbed. Self-efficacy is an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments. In general charisma has a relatively great impact in AI learning. The test bed shows that having a charismatic voice must be accompanied with non-verbal charisma for effective results (Johnson et al., 1976). The results show that the impact of charismatic strategies may depend on how they are expressed.
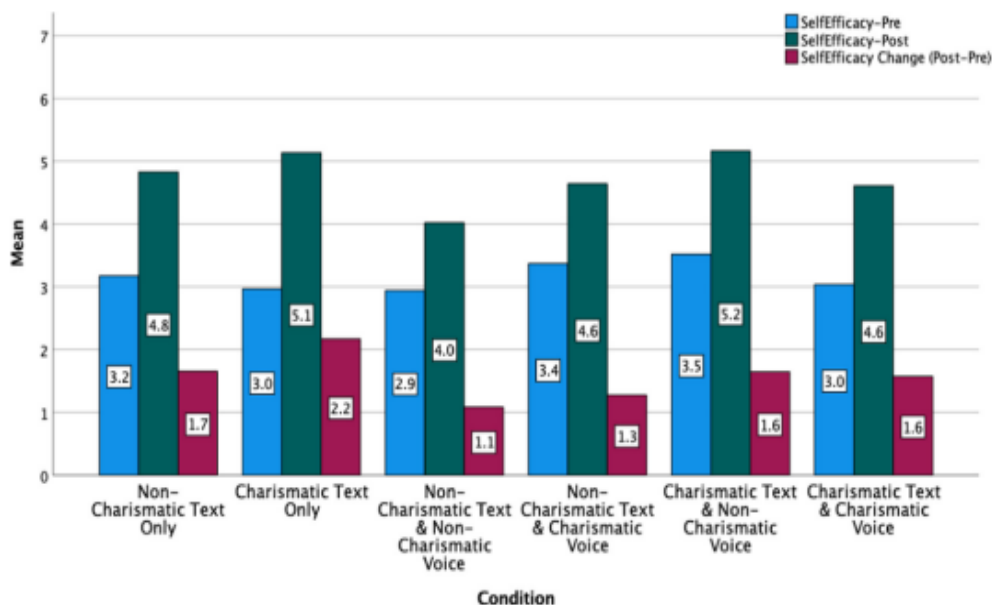
Graph 2

4. Conclusion

In this paper we discussed about charisma in virtual learning and which behaviours to consider while designing a virtual tutor. We also conducted research to find out the impact of such behaviours in learning. Results show that the teacher's ability to engage the students increases the performance of students both in class and in the test. Despite heterogeneous conceptualization and the inherent complexity there is a consensus that charismatic individuals exert influence, comfort and connect to others hence having a charismatic virtual tutor will augment learning thus helping the students. In education for example a charismatic AI may be more engaging and captivating for the students taught by it. Overall, we envision a plethora of use-cases with eminent value of charisma in artificial intelligence.

5. References

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