COULD I BE MORE SATISFIED?
THE RELATIONSHIP BETWEEN ONLINE LEARNING ACTIVITIES, SATISFACTION, AND AGREEABLENESS PERSONALITY TYPE

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Abstract

The ubiquity of online courses in learning programs indicates a significant trend in higher education. This trend has increased even further due to COVID-19 restrictions and social distancing requirements. As Techno-Pedagogical Learning Solutions (TPLS) are constantly being developed and improved, it is quite easy to adapt diverse learning paths for learners, based on their characteristics. Personality affects learners' preferences and thus their satisfaction with the learning process. This study examined the relationship between learners' personality traits (using Costa & McCrae's Big-Five model, which is the most widely accepted psychological model) and their satisfaction with various online learning activities. Questionnaires were used to measure personality traits and satisfaction of 123 university students enrolled in an innovative online academic course. In this paper, we focus on one of the five traits proposed by the Big Five model, the Agreeableness trait. This trait was found to be the most common trait in earlier studies, as well as in the current study. Moreover, Agreeableness was also found to be the most significant and important factor in students' adopting online learning. Significant correlations were found between learners who tend to Agreeableness and their satisfaction with the tested TPLS. In addition, three conceptual activity groups of TPLS were defined toward exploring learners' satisfaction. Following data processing, correlations were found between Agreeableness and the "Communication" and "Media" groups. These findings clearly indicate that personality plays a significant role in online learners' satisfaction, with emphasis on the Agreeableness trait. Therefore, when selecting learning activities for an online course, this trait should be considered. The current study seeks to suggest personalized online learning paths with activities that agreeable learners find satisfying. This proposed personalization has the potential to increase learners' satisfaction with online courses and therefore benefit the entire field of online learning design. The few previous studies that addressed these relationships did not test them empirically, hence, we seek to bridge this gap between theory and practice. The use of personality-based personalization can enable online learning to be adapted to a wide range of learners, thus increasing their satisfaction with the learning process, regardless of whether or not they like online learning.

Keywords: Agreeableness trait, online learning activities, personality traits, personalization, satisfaction with online learning.

1. Introduction

Online learning involves interactions using digital technology (Greenhow et al., 2022). This type of learning is increasing over the years and constitute a significant component of higher education (Tlili et al., 2016), particularly with fully online courses (Cohen & Baruth, 2017). This growth trend has increased especially due to social distancing requirements prompted by the COVID-19 pandemic (Baruth et al., 2021). Online platforms offer a wide range of technological tools and a variety of pedagogical activities. In this study, we examined students' satisfaction with 12 online learning activities, which we refer to as Techno-Pedagogical Learning Solutions (TPLS): Online Lessons, Discussion Groups, Assignments, Textual Content, Tests, Games, Peer Review Assignment, Surveys & Polls, Video, Graphics, Audio, and Questions. Satisfied learners tend to be more committed, motivated, and cooperative (Dziuban et al., 2015), hence, focusing on each activity enables creating learning paths with the most satisfying TPLS for each learner.

Personality has been found to affect learner satisfaction (Bolliger & Erichsen, 2013). In this study, personality types were observed according to Costa & McCrae's Big Five model (1985), which defines five traits in the human personality. This study focuses on the Agreeableness trait, as it was found to be the most common trait and the most important predictor of students' adoption of online learning. Self-report questionnaires were administered to examine significant correlations between personality

traits and satisfaction level with each of the tested TPLS. In addition, to find a conceptual connection of satisfaction level with each online activity, groups of activities were defined, and three more scores were calculated to explore satisfaction with the TPLS. The three groups were Communication, Media, and Literacy.

The study aims to propose personalized online learning paths for agreeable learners based on their most satisfying activities, which could increase satisfaction and benefit the entire field of online learning design. The study seeks to bridge the gap between theory and practice as few previous studies have empirically tested these connections.

2. Literature review

Learners differ from each other in many aspects, personality being one of these. Therefore, it is necessary to adjust learning activities to personality type (Omheni et al., 2017). Moreover, learners with differing personality types likely require differing learning activities (Bachari et al., 2012), they will perform differently, and will handle challenges and pressure during online learning differently (Divjak et al., 2019). Personality is often measured according to Costa & McCrae's Big Five model (1985), considered the most recognized modern psychological model (Baruth & Cohen, 2022), and widely accepted and applied (Bhagat et al., 2019). The Big Five model characterizes people by emphasizing distinguishing traits, taking into account the complexity of human personality. (Al-Ismail et al., 2017). The Big Five traits are: Extraversion (a high degree of sociability and assertiveness), Neuroticism (emotional stability, level of anxiety and impulse control), Agreeableness (helpful to others, cooperative, sympathetic), Conscientiousness, (being organized, disciplined, achievement-oriented), and Openness (strong intellectual curiosity and a preference for variety and novelty) and Agreeableness (being helpful to others, cooperative and sympathetic) (Chen et al., 2016). This study focuses on the Agreeableness trait, as it was found to be common and participants scored high on it (Abouzeid et al., 2021), as was observed in the current study as well. Additionally, it was lately found that Agreeableness is the most significant and important indicator of students' adoption of online teaching modes (Mustafa et al., 2022), and affects satisfaction levels with online learning (Baruth & Cohen, 2022).

Online learning has rapidly grown and influenced all educational systems (Siddiquei & Khalid, 2018), leading to a constant rise in accredited online courses (Soffer & Nachmias, 2018). These courses use various technological tools to advance learning and include a variety of pedagogical activities, referred to as Techno-Pedagogical Learning Solutions (TPLS). In this study, we examined students' satisfaction with 12 online learning activities, which we refer as Techno-Pedagogical Learning Solutions (TPLS).

Personality affects learning outcomes (Tlili et al., 2019), including satisfaction with online learning (Bolliger & Erichsen, 2013) which is important for measuring effectiveness (Kim, 2018). Therefore, customizing courses to match learners' personality and learning style can improve satisfaction (Denphaisarn, 2014).

3. The research

In this research, we measured students' personality traits and satisfaction with the online course, aiming to understand learners' preferences and suggest personalized learning paths. The study sought to find correlations between Agreeableness and satisfaction with various learning activities (TPLS), as well as with the course in general.

4. Methodology

123 students at an accredited university completed an anonymous questionnaire to identify their personality traits using the BFI (Big Five Inventory) (John & Srivastava, 1999), which includes 44 statements answered on a 1-5 ordinal scale. All TPLS were integrated into the online course sessions, aligned with the content and required no prior preparation. Neuroticism ($\alpha = 0.81$); Extraversion ($\alpha = 0.8$); Openness to Experience ($\alpha = 0.76$); Conscientiousness ($\alpha = 0.73$); Agreeableness ($\alpha = 0.68$); (Etzion & Laski, 1998). Although all five traits were measured, the study focused on examining results for Agreeableness. Participants rated their satisfaction with the tested online learning activities on an ordinal scale from 1 to 5 using a questionnaire specifically developed for this study. A high level of reliability was found for the questionnaire ($\alpha = 0.84$). Students' personality data in this study was found to be normally distributed based on skewness and kurtosis tests. Spearman's correlation analyses were performed between personality traits and satisfaction with each of the tested TPLS and with the general satisfaction score. Furthermore, as aforementioned, groups of activities with common denominators were defined in data processing. Three scores were calculated to explore satisfaction with TPLS:

Communication, Media, and Literacy. Spearman's correlation analysis was performed to identify connections between learners' personalities and satisfaction with each TPLS activity group (see Figure 1).

Figure. 1. Conceptual groups' division.

5. Results

5.1. Agreeableness and satisfaction with the tested TPLS: descriptive statistics

As aforementioned, students' Agreeableness was measured using the Big Five Personality model, which measures five human personality traits. Therefore, all five traits were measured, but in this study, data analysis focused on Agreeableness only. Personality traits' means show that Conscientiousness and Agreeableness have the highest scores. Agreeableness characterized students with a high score and the widest range of scores and differences within the group (Mean = 3.989, SD = 0.529). The highest score found for this trait was 5.00, and the lowest was 2.667. Agreeableness was normally distributed, with skewness of -0.491 (SD = 0.21) and kurtosis of -0.278 (SD = 0.43). As for traits' frequency, the majority tended toward Agreeableness (58.53%). Students' satisfaction with the examined TPLS and with the online course in general was measured, as well as their satisfaction with each of the conceptual groups of learning activities. Graphics and Video had the highest average scores, and hence can be defined as the most satisfying learning activities (Mean = 4.366; SD = 0.899; Mean = 4.317; SD = 0.899 respectively). Discussion groups were found to be the least satisfying activity, with a low average of 2.78. (SD = 1.163), the only activity with an average score lower than 3. Regarding the entire online course, general satisfaction level was high (Mean = 4.203, SD = 0.757). As for the three conceptual learning activities, satisfaction level was moderate-to-high: the Media group had the highest average score (Mean = 4.234, SD = 0.761), the Literacy group had an average score of 3.77 (SD = 0.781), and the Communication group had the lowest average, with a score of 3.134 (SD = 0.963).

5.2. Correlations between Agreeableness and satisfaction with TPLS and with the online course in general

Spearman's analysis was performed to examine the correlation between Agreeableness and satisfaction with each of the 12 TPLS, and with the online course in general. Several significant correlations were found: Moderate and significant correlations were found between Agreeableness and satisfaction with discussion groups ($r = 0.221$, $p < 0.05$), games ($r = 0.277$, $p < 0.01$), Surveys & Polls ($r = 0.2$, $p < 0.05$), video ($r = 0.204$, $p < 0.05$), graphics ($r = 0.249$, $p < 0.05$), and audio ($r = 0.274$, $p < 0.05$).

5.3. Correlations between Agreeableness and satisfaction with the conceptual groups of online learning activities

Alongside the examination of the correlation between Agreeableness and satisfaction with each TPLS, a Spearman's analysis was also performed to examine satisfaction with the three conceptual groups of the 12 learning activities. Several significant correlations were found, with varying degrees of strength: A low correlation was found between Agreeableness and satisfaction with Communication ($r = 0.199$, $p < 0.05$). As for satisfaction with Media, a stronger and moderate link was found with those who tend to Agreeableness ($r = 0.327$, $p < 0.001$). No significant correlations were found between Agreeableness and satisfaction with Literacy.

6. Discussion and conclusions

The current study examined the connections between satisfaction with online learning activities and the Agreeableness personality trait. Moderate correlations were found with five of the tested learning activities. It appears that students score high on Agreeableness may find discussion groups to be a satisfying learning activity. This relationship corroborates our previous findings of a high correlation between Agreeableness and media offerings such as video, pictures, and audio materials (Baruth & Cohen, 2022). These findings are quite consistent, although with a lower correlation. It was found that Agreeableness was positively correlated to active, sensing, and visual learning styles (Siddiquei

& Khalid, 2018), which can in turn be related to satisfaction with visual and sensory offerings such as video, audio, and graphics. Furthermore, the correlations between these and an active learning style, may also explain the correlations found between Agreeableness and satisfaction with games and discussion groups. The moderate correlation that was found for satisfaction with online games corroborates previous research that explored the relationship between personality traits (all five of them) and motivation to play online games. As for satisfaction with audio activities, earlier research found that Agreeable types prefer mobile learning materials (such as podcasts) to be delivered only when they are alone (Al-Ismail et al., 2017), an interesting finding that should be examined further in the future. Finally, the correlation between Agreeableness and satisfaction with surveys and polls also corroborates earlier findings (Baruth & Cohen, 2022), however, note that this learning activity has hardly been studied thus far. These findings are consistent with the idea that surveys may expand online interaction, and as Agreeable types tend to be cooperative (Chesser et al., 2020), their satisfaction with polls concurs with this finding (Bruso et al., 2020). Few correlations were found between our conceptual groups of activities, which were defined to examine satisfaction with combinations of several TPLS altogether, and Agreeableness. A moderate correlation was found with Media. Firstly, this is not a surprising result, as correlations were also found with each of this group's activities (games, video, audio, and graphics). Secondly, this finding may have a strong influence on online course design, so that online courses can be offered with several learning paths, and a "media path" will likely prove satisfying for Agreeable students, which constitute a significant portion of the population (Afzaal et al., 2019). Furthermore, Media has been suggested as a suitable learning activity for "Feeling" types, which are analogous to the Agreeableness trait in the MBTI® personality model (Bachari et al., 2012). Low correlation between Communication activities and Agreeableness was also found. The findings confirm Agreeableness classification as a pro-social and cooperative type (Bhagat et al., 2019), as this conceptual group includes social activities. The Communication activities, which can likely suit Agreeable students, should be considered as a learning solution for other personality types as well, such as Extroverts, who exhibit a high degree of sociability (Chen et al., 2016), yet this needs to be examined empirically too.

It appears that an online learning path featuring the studied satisfying learning activities, may increase Agreeable students' satisfaction with the online course. In conclusion, our results indicate that personality plays a significant role in learners' satisfaction with some of the tested TPLS. For example, an online course that includes discussion groups, games, video, graphics, audio, and surveys should be offered for learners who tends toward Agreeableness. Hence, offering a personality-based personalized learning path is perhaps an important and necessary action that should be considered when designing online courses. These are interim findings of a wider study that has not yet been completed and is expected to include a larger study sample. Hence, these findings require further examination, as their correlation level is not strong and unambiguous. Hopefully, a larger sample will yield stronger correlations.

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