

Using serious games to foster wellbeing literacy in higher education students

NANCY AN, GILLIAN VESTY, CHRIS CHEONG & PAVITHRA SIRIWARDHANE

ABSTRACT

Wellbeing refers to an individual's positive feelings and effective functioning. In a Higher Education (HE) setting wellbeing sets the foundation for student academic performance and overall resilience to meet future workplace challenges. Nevertheless, evidence suggests that HE students experience higher rates of distress than the general population, and graduates experience stress when they transition to the workplace.

Bogart, a newly developed serious game of business ethics, is being used to promote wellbeing in HE students and support the generation of student wellbeing literacy (WL). WL is a soft skill that empowers students through the ability to articulate their personally experienced wellbeing challenges and stressors. We argue that WL is a crucial employability skill for HE graduates. Our research proposes that serious games, such as Bogart can foster WL. Bogart's simulated work environment provides the perfect experimental vehicle for students to explore and test their responses to challenging workplace situations. Given that soft skills are fundamentally behavioural and real-life oriented, serious games, such as Bogart, provide a safe and cost-effective environment for HE students, to explore and

interact with sometimes extreme behaviours to help them construct, practice and reflect on their WL skills.

INTRODUCTION AND BACKGROUND

Wellbeing refers to positive feelings and effective functioning of individuals (Magyar & Keyes, 2019). In the workplace, interpersonal collaboration is an essential employability skill (Andrews & Higson, 2008; Muhamad, 2012). While at the societal perspective, the importance of quality education, along with the necessity to promote health and wellbeing for all ages, is core to the United Nation's Sustainable Development Goals (Howden-Chapman, Siri et al., 2017). Student wellbeing is particularly critical in HE settings in motivating student engagement, peer-to-peer learning, overall academic performance and employability skills (Silverman, Underhile et al., 2008; Egan, O'Hara et al., 2021) and is an important and growing focus for HE administrators (Young, Macinnes et al., 2020). However, evidence increasingly shows HE students face significant distress compared with the general population (Turner, Scott-Young et al., 2019). Research reports that students commonly experience negative feelings and function poorly because of their mental state (McBeath et al., 2017). Student graduates are also reported to experience stress and anxiety when they move from university to the workplace (Jackson, 2015).

Instead of reactively responding to adverse wellbeing incidents, attention on the development of WL skills is important proactive management, fostering capabilities that empower students and minimise wellbeing-related issues. WL refers to the ability to use mindful language for wellbeing purposes (Oades & Johnston, 2017). With awareness and the ability to articulate their negative feelings, students with WL capabilities are more likely to seek help when needed and build positive relationships in their social networks (McBeath et al., 2017). WL empowers students and graduates to be aware of the potential risk of stressors during the transition to the workplace and to thrive as professionals in the long run. Individuals with WL can better adapt to new working environments and change the way they use language, facilitating them to adjust to new organizations more smoothly and collaborate more effectively with colleagues accordingly (Oades et al., 2020).

Unlike technical and academic skills, which can be taught and practised in the traditional instructor-centred classroom environment, WL is an employability skill that can only be built with proactive student-centred participation. A professional work environment similarly requires interpersonal collaboration. Thus engaging in pedagogical activities that support engagement in a social context is fundamental for developing employability skills (Andrews & Higson, 2008; Muhamad, 2012). Experiential learning in the relevant context can foster WL development. Hou et al (2021) highlight the key items that measure WL. These are posed as six questions as indicated in Table 1 and are useful for survey research:

	Items
1	I have many words I can think of to communicate about wellbeing
2	I know a lot about wellbeing
3	I know how to improve my wellbeing
4	I have the skills to understand information about wellbeing
5	I have the skills to express myself about wellbeing
6	I can communicate about wellbeing in multiple ways (e.g., writing, listening, drawing) to suit the needs of my audience

Table 1: 6 Items of Wellbeing Literacy (Hou, Chin et al. 2021)

In this paper, we argue that serious games can foster wellbeing and WL. Serious Games are a relatively new concept to higher education and business research with calls for greater dialogue between the games industry and users, including uptake by educational facilities. Serious games are games designed with a purpose (Abt, 1987). Serious games are more than entertainment and have educational impact (Yusoff, Crowder et al., 2009; Ávila-Pesántez, Rivera et al., 2017). Bogart, a newly developed serious game of business ethics, is being used to provide a simulated work environment to test student responses to challenging people and conflict in the workplace. The immersive nature of the game arguably promotes student awareness and reflection of potential challenges that may impact wellbeing in the workplace. The game is used to determine the extent to which serious games, such as Bogart can encourage student reflexivity and the appropriate language choices that demonstrate their ability to make

decisions for not only ethical, but long-term wellbeing purposes. We posit that Bogart serious game enables students to improve their WL and be better prepared for their future workplace.

GAME OVERVIEW

Bogart is an online simulation game designed to help educate accountants on the new code of ethics. While the game is designed to place students in the middle of an unfolding ethical dilemma, we are using the game to determine the capacity for this immersive experience to develop the WL of HE students before they enter the workplace. The serious game invites role-play as senior accountants within a fictional company, Bogart Technologies.

The game contains three acts corresponding to three days, with interactive activities for the players to accomplish. The typical duration of the gameplay is between one hour to one and half hours. On day one, the Bogart employees greet the player and provide an induction to Bogart Technologies. The player becomes familiar with company policies and is instructed how to use the technical console. The console facilitates the player to process accounting reports, check on their performance through their dashboard indicators and communicate with colleagues through video conferencing.

On day two, the players are required to process accounting reports based on Bogart policy documents. In particular, the credit policy. One of the customers, Belmont, is reported to have a debt of over 90 days and policy suggests that their account should be suspended based on the number of days overdue. However, the CEO, CFO and all other colleagues suggest to the player that they grant an extension. They argue that Belmont is a good customer with strong relationships with Bogart. The players are faced with an ethical dilemma on whether to follow their superiors' orders or to follow Bogart's accounting policies. At the same time, they know they will lose points if they do not 'grant an extension' which will also impact their own personal performance targets and bonus payments. The game continues with different challenges for the player, who determines their own journey through the game.

On day three, the players are suddenly called to an important staff meeting following an announcement made by the company Chairwoman. The Chairwoman reveals the undercover forensic accountant, who has been investigating the fraudulent activities that have been occurring at Bogart. Depending on the decisions made throughout the gameplay, the players will obtain additional feedback from the Chairwoman. The players might be praised for their ethical decision making, they might be warned for being unable to resist the pressures from colleagues, or they may be dismissed and reported to the professional bodies for their unethical decisions.

FEATURES OF THE GAME

We argue that there are three main features of Bogart that help to develop students' WL and improve their employability skills. Each of these features are connected to fostering the WL items identified in Table 1. They are:

Simulated workplace: Most HE students have limited opportunities to experience the workplace and collaborate with colleagues before graduation. Bogart provides a safe and cost-effective simulated working environment in which students can explore from a first-person perspective. They can experience digital tools in a simulated office while interacting with virtual colleagues, make decisions, seeking help or asking questions. While immersed in the simulated workplace, students develop familiarity with the working environment and improve their confidence to build up positive relationships with colleagues and communicate for wellbeing purposes, extending into the real workplace.



Image 1: Demo of the players' view in the simulated workplace



Image 2: Demo of the players' view in the simulated workplace

Feedback and Reward system: What makes Bogart different from other games is that it rewards players for making wrong decisions. At the beginning of the game, the players are introduced to the two key performance indicators that drive their bonus: team performance and bad debt performance. Throughout the game, the CEO and CFO constantly

encourage the player to ignore risky customers, such as Belmont, who has an outstanding debt. Nevertheless, suspending Belmont would lead to negative performance targets. If they grant an extension, the player gets immediate praise from CFO and receives increased bonus points, encouraging them to continue making unethical decisions. Alternatively, obeying company policies and suspending the accounts would incur harsh criticism from the CFO and a reduced bonus. The players are surprised to find that the high-performance score results in punishment by the Chairwoman in the end. At the same time, the low performance and bonus result from making ethical decisions through the game, which leads to recognition and even promotion. The misleading feedback and confusing directions from senior managers in the game test the players' decision making under pressure. The challenging situations, and the surprising ending should motivate the player to reflect on their decision-making and behaviour during the game. Their language ability to communicate with colleagues about wellbeing and capability to improve wellbeing in the workplace can also be practised.

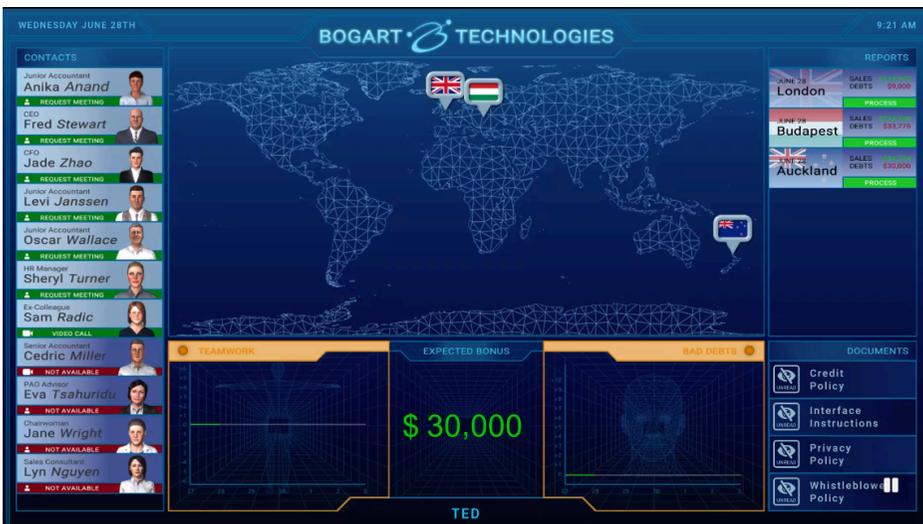


Image 3: Demo of the console, a digital tool to process reports, track performance targets, make video calls and check policy documents

Individualized emotional experience: There is no count-down timer set for the game. Thus, players are encouraged to take their own pace to

navigate the game and construct individualized experiences. For example, players may decide to consult other colleagues or reach out to policy consultants for information and advice. Although self-paced experience with flexible choices, and the intense pace of the in-game communication with virtual colleagues and requirements to accomplish tasks, the players are pressured to think and act quickly. In addition, the contradictory advice from different superiors and company policies tend to make players feel anxious and uncertain about the gameplay. The vivid facial expression of an angry boss adds to the stress. Throughout the game, the players are engaged emotionally, and the game tests the players' resilience and capability to resist pressure in the workplace. It also helps bring wellbeing into visibility and improves player awareness and understanding of potential stressors in the workplace.



Image 4: Demo of interaction with a virtual colleague

IMPLICATIONS IN WL EDUCATION

WL, as an employability skill, is closely related to the workplace context (Oades, Jarden et al., 2021) and can only be built with proactive participation. Research relating to the development of WL is scarce. We propose that WL could be developed through simulation and serious games, such as Bogart, which provides an experiential learning context.

Wellbeing itself is an experience, closely related to personalised perception (Oades, Jarden et al., 2021). Employees' wellbeing is also influenced by their workplace context (Australian HR Institute, 2020). Thus, developing WL as an employability skill should consider being learner-centred and context-based.

In bringing awareness to wellbeing issues, Bogart provides personalized opportunities for students to not only identify but develop important resilience skills to stressors in the workplace. In giving greater visibility to wellbeing, mentors, educators and researchers can gain a more nuanced understanding of wellbeing literacy and its management. We test whether the "learning-by-doing" experience and "in-game" feedback, can help students transform and internalise experiences to become meaningful, practical WL skills. We propose that these innovative tools help students to build capabilities to deal with wellbeing issues in their future careers. Researchers need to continue to explore the links between serious games and fostering resilience and wellbeing.

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