Teachers' Roles and Game Designers' Perspectives in Educational Game Design Process

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INTRODUCTION

Games have become essential in primary education to engage and motivate learners. Teachers' versatile use of games and educational games (EG) applauses the ability to enjoy learning. Games include 'all games' that deliver some in-game skills and allow learners to transmit the knowledge gained during play in a classroom situation (Gee 2003, 2007; Rick and Weber 2010). Teachers' beliefs in providing real-world concepts through game scenarios allow learners to relate and achieve learning outcomes of the subject, acknowledging teachers' competencies, their professional development knowledge, and perceiving the context, which leads to changing their beliefs towards delivering knowledge practices in published work (Skott 2001; Stipek et al. 2001; Beavis et al. 2014; Stieler-Hunt and Jones 2015a, b). Despite positive results, this urges the need for game designers' perspectives on a similar level.

While interconnection between playing and learning has been discussed (Gee 2003; Salen and Zimmerman 2004; Gee 2007; Könings, Brand-Gruwel, and Van Merrienboer 2007; Kalmpourtzis 2018), the transition between game and EG design seems to suppress the decision-making process of designing. Due to the games' explorative and experimenting nature, it is promising that teachers use games as engaging and learning tools (Razak, Connolly, and Hainey 2012; Könings, Brand-Gruwel, and Van Merrienboer 2007). On the contrary, a study investigated the roles of game designers and their connection with education to exhibit expectations and skills in the gaming industry (Potanin and Davies 2011). Another study investigated game production (teams, systems) ethnographically, revealing positive outcomes due to the versatile expertise, beliefs, perspectives, and skills of team members (Garner 2013). This has been addressed to support game designers' skills and autonomous work ethics (Kalmpourtzis 2018). Nevertheless, there is a need to establish more interdisciplinary and theoretical approaches to decomplex the notion of EG design.

From a game design perspective, defining and structuring games in a systematic and complex manner has its discrepancies (Huizinga 1955; Roger and Meyer 1961). This project was motivated by observing established game designers' perspectives and thoughts of EG design (Kalmpourtzis 2018; Salen and Zimmerman 2004). Additionally, researchers highlight the necessity of in-depth interviews; empirically, and theoretically established research is necessary for a "fuller range of dispositions held by videogame makers" (Keogh 2019; 2021, 17). However, the gaming industry

still lacks theoretical and empirical knowledge on game designers' perspectives, influence, and attitudes towards learning, designing, and EGs, their desire to motivate themselves in designing games, and how they approach such complex decision-making processes. Hence, addressing the game designers and teachers as first-playtesting individuals, we should visualize their experiences, motivations, desires, and challenges encountered during designing games for the classroom and for teachers to select and play those games effectively.

These concerns are addressed through an ongoing research project that aims to examine the roles and perspectives of game designers and primary school teachers in the designing process of EGs. The current project is based in Australia, with a phenomenological approach to conduct semi-structured interviews to gather the essence of their experience. The *essence* should not be viewed as a vague idea but rather the ability to identify the meaning embodied in the lived experience (Merleau-Ponty 2013; Van Manen 2016). Eleven primary school teachers and twenty-seven game designers attended two-hour interview sessions (February – September 2020 via Zoom, Discord, Googlemeets). Interpretive thematic analysis was adopted to code emerging themes until saturation was achieved (Braun and Clarke 2012). The analysis was concurrently interpreted through the concepts of the theory of experience, including *continuity, interaction, situation*, *freedom* and *intelligence*, *formation* of *purpose,* and *desire* that drives the *purpose* to apply and contextualize *growth* of experience (Dewey 1938, 1986). The analysis also discusses traditional and progressive classrooms in the experience and education of teachers and game designers' accumulation of game design.

Interpretive data analysis of teachers' and designers' perspectives established five and six major themes, respectively. Theory of experience and its concepts are deeply embedded within both experts' contexts where games are centered. Additionally, both teachers and game designers demonstrated their preferences, attitudes, beliefs, desires, and purpose of using and designing games. Finally, I observed similarities and differences between both experts' results were worth acknowledging.

Regarding similarities, both experts strive to achieve engagement, motivation, and 'reaction' while the players play the game and eagerly cherish any feedback throughout the play. Teachers' expectations of using games in the classroom were to ensure higher engagement levels and learning progress is achieved autonomously, which is inclusive of all types of learners. Games allow teachers to obtain 'data' that track learners' progress. Game designers' expectations after designing a game are to play-test and obtain 'any feedback' (reaction, feeling, observing the play), ensuring the game progressively achieves its goals, delivers engaging and motivational attributes to maintain the player's autonomy. I observed these analysis outcomes as similarities despite their different context, the situation in which they interact with games, the continuous encounter with games, and how both experts' purpose is to form a game that is 'engaging,' 'motivational,' 'fun' and 'delivers its goals' through the design.

Inversely, teachers still face challenges in their workplace, including technical support, school-provided resources, their skills, the need to continuously alter curriculum, time-limitation, and facilitating various learning tools, including games. Some teachers did not support games as 'learning' but accepted that games deliver 'some learning,' although their desire to be a part of the game designing process depicted positive remarks. Teachers mostly adjudge games based on how the learning outcome of the curriculum is designed. Hence, their capacity to comprehend learning content is more vivid than game designers. Game designers design games/EGs based on their intended audience, demographics, and their experience of games'

functionality in play-testing. Game design challenges include time-limited projects, low funds, lack of collaboration with various stakeholders, and lack of support within the assigned teams. Lastly, most game designing processes are distinctive and adaptable (as per workplace requirements), and there is no unique approach they adopt.

Ongoing analysis has provided captivating knowledge towards understanding both experts' roles in game and EG designing. Although players/learners are the end-users, teachers assess the games beforehand for their usability, and game designers design the games before commercialization. It is illuminating to visualize the challenges teachers and game designers still encounter.

The interpretive analysis results of interviews will further explore the *essence* of their experience, crucial roles, and positionality in the EG design process. Furthermore, a more significant number of participants (a research limitation due to the Pandemic) is beneficial for interviewing both perspectives, providing a comparative and theoretical framework discussion to achieve a holistic view of current games and EG design processes in practice.

BIO

Mifrah Ahmad is a Ph.D. researcher in the School of Education at Deakin University Melbourne. Her primary research examines the roles and perspectives of educational games design, exploring the possibilities of diverging and converging knowledge of the educational games designing process between education and the gaming industry.

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