

Triumpha
A Board Game for Physical Education Students

MTL in Physical Education

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ABSTRACT

Living in a highly technological world driven by immediate gratification, one may recognise the urgency to distance ourselves from conventional teaching methodologies (Penalva, 2023). Branching into the realm of gamification, literature exposes its transformative potential within the educational context which, when used appropriately, reaches far beyond “merely making learning fun” (Christopoulos & Mystakidis, 2023, p. 1224). Supported by research, such a game-based approach exploits our natural inclination, fostering the development of critical thinking, decision-making and problem-solving skills, among a multitude of other elements (Henderson, 2005). Specifically pertaining to board games, their idiosyncratic designs offer an authentic opportunity for learners to experience collaborative and communicative skills through social and emotional learning (Weissberg et al., 2016). Tying into the experiential learning model, creating a non-traditional learning environment sparks curiosity and motivation, providing them with the opportunity to actively involve themselves within the dynamic learning process (Kumar & Lightner, 2007). The creation of this project targets an experiential pedagogical approach, using the board game and elements included in *Triumph* as resources bridging technical and interpersonal skills out of the institutional context and into the learners’ lives. In doing so, one may work towards providing a meaningful, value-laden education empowering our learners – the future contributors of society.

August 2025

Board Game – Physical Education - Multidimensionality –
Innovative – Learning

Dedication

To the educators who dare to teach differently,
to the learners who remind us why it matters, and to the
belief that education can inspire, empower and evolve through
creativity and meaningful experiences

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Chapter 1: Introduction

1.1 The Nature of Learning

The use of games as an educational strategy has gained increasing attention for its ability to foster critical thinking, creativity, and social competence. Henderson (2005) notes that games promote problem-solving skills by placing learners in complex, decision-driven environments. When incorporated into classroom settings, games encourage students to collaborate, communicate, and reflect—making learning not only active but also deeply social.

Board games in particular have witnessed a significant resurgence in popularity in both social and educational contexts (Gazdula & Farr, 2019). Their value lies not only in their entertainment factor but also in their capacity to promote multidomain learning, particularly among younger learners. Kumar and Lightner (2007) argue that such structured, interactive environments support cooperative learning and build social negotiation skills promoting - core competencies required to navigate both academic and real-world challenges.

Several benefits have been associated with the use of board games in learning environments:

- Encourage increased communication among peers
- Foster social negotiation and collaborative decision-making, essential for group-based gameplay
- Create opportunities for socialisation, which can be especially valuable in inclusive learning environments
- Develop interpersonal, socio-emotional¹ skills such as self-awareness, empathy, respect and fair play
- Promote learner autonomy as students are required to read, interpret, and apply procedural rules themselves
- Invite joy and intrinsic motivation through the nature of play while fostering an active, experiential learning experience
- Enhance critical thinking skills

Capturing the full value of game-based learning requires recognising it not only as an alternative method of delivering content but also as a way of "capturing the dynamic process of learning in action" (Smith, 2006, p. 434). In this sense, board games do not merely complement traditional methods—they challenge them, inviting learners into authentic, reflective, and socially embedded learning experiences.

The nature of physical education as a subject boasts many of the above benefits, learners' physical proximity and continuous shared interactions strengthening the learning element. Durkheim terms this a "collective effervescence" (in Daniels, 2022, p. 103), nurturing an authentic learning environment positively influencing the learners' thrill and motivation.

¹ Social and emotional learning (SEL) is generally viewed as encompassing five key skills: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Weissberg et al. 2016)

1.2 Triumpha – A Project-Based Dissertation

The creation of Triumpha targets the PE SEC subject area, a project-based dissertation centring itself within this exam-based educational subject. As will be scrutinized further throughout this dissertation write-up, Triumpha boasts a strong curricular link, rooted in the local Learning Objective Framework (LOF) and National Curriculum Framework (NCF) documents. Blending theoretical and practical physical activity components, Triumpha seeks to create an engaging yet ultimately educational learning environment, providing an innovative resource educators may use within the classroom environment. Despite this, the addition of general sport trivia, game rules and sporting event history questions within the game allows Triumpha's target population to not limit itself solely to PE SEC students, rather branching into another tabletop game dimension within varied social contexts.

1.2.1 Why a Board Game?

The renaissance of board games has a lot to do with the social dissection of the world; where everybody has a phone, everybody is by themselves, and there is a social need to come together and experience this togetherness. I think board games play a very important part in addressing that need" (Knizia, 2004, in O'Neill et al., 2022, p. 94)

The teaching and learning resource potential is immeasurable, educators are able to continuously adapt their teaching methodologies and tools to better engage their learners. We presently live in a highly technologically developed reality, its emphasis undoubtedly dominating the educational sector such as through the use of tablets and interactive whiteboards within schooling institutions. During initial thought processes behind this project, I wished to keep this engagement and innovation concept a priority. Reading through research, I found myself intrigued by Kolb's experiential learning model (Kolb & Kolb, 2012), personally resonating with this active learning style distancing itself from traditional teaching regimes – but what resource could I possibly create?

Despite acknowledging the benefits of the use of technology when exploited effectively, I took off at a tangent, or rather back to the very roots of motivation behind learning, seeking to create a resource which is physical and interactive, grounding the learner into reality. Daniels (2022) expresses how "in fact it is in this aspect that board games shine: the creation of togetherness through play that satisfies our inherent need for warm, face-to-face human connections" (p. 32), being described as a phenomenon paradoxically harder to come by in such a hyperconnected world. The idea of a board game seemed to tick all the boxes and it was from this moment where I began to explore the possibility of creating an educational board game, experimenting with the already highly developed gamification concepts learners are being exposed to yet giving importance to the holistic domain, heightening the socio-affective element in which lifelong learning truly takes place. When playing Triumpha, learners are immersed in a socio-educational experience, interacting with one another and taking on different roles to ultimately reach a shared objective – all while exploring, learning and revising components within the PE SEC syllabus and the world of sport.

1.3 Project Aims

This study encompasses several aims, enhancing the PE SEC learning experience at its core. Triumphpha is a resource which educators may use during the scholastic year, aiming to effectively deliver the PE SEC subject knowledge. As previously mentioned, one of its main principles lies in its holistic nature – Triumphpha creates an enriching experience in which learners dynamically engage with one another within a social environment. Triumphpha embodies both a teacher and learner resource, its diverse components tailored to embrace diversity and intrigue different player personalities.

Ultimately directed toward the PE SEC subject, Triumphpha embraces a game system created to elevate the role of the educator. Through specific game features, educators may potentially identify areas of weakness within the curriculum, choosing to take further action for future revision purposes. The nature of a board game hopes to ignite a thrill and motivation for learning, offering a different approach to the PE SEC lesson.

1.4 My Position within the Study

My passion for sport and physical activity was ignited as from a young age, practicing various sport disciplines across my athletic development. However, apart from the sportive lifestyle which I consider a big part of my life, I have always found myself exploring the artistic side of my personality and feel strongly inclined to DIY projects, art, aesthetics and design. The opportunity to take on a project-based dissertation has given me the opportunity to blend these two passions of mine together. Bringing this into my premature teaching career – yet another passion and constituent in my life - this has ultimately allowed me to create a resource to be used within an educational setting, favouring the PE SEC subject choice.

During my experiences both as a student as well as an educator during my second year MTL teaching practice, I feel I have gained insight into the PE SEC subject experience. Conversing with various experienced teachers, there seems to be a persistent struggle concerning the bio-anatomical part of the syllabus, especially for learners who do not have biology as a subject choice. This brought me to question whether anything can be done to help – learners unfortunately many a time giving up on the biology related topics deemed too difficult to grasp.

The creation of Triumphpha offers an innovative game experience which can be enjoyed by educators and learners within the classroom. Its various aspects are deliberately designed to proactively function within a differentiation reality. These will be explored and discussed in more detail later on in this dissertation write-up, revealing my thought processes and rationale behind the many decisions taken throughout the creation process.

1.5 Chapter Overview

The below gives a breakdown of the five chapters comprising this dissertation write-up:

Chapter 1: Introduction

This chapter introduces project research, positioning my board game project 'Triumph' within this field of research. My position within the study as well as research aims are also addressed.

Chapter 2: Literature Review

This chapter analyses available literature within this research area, giving insight to experiential learning processes specifically in an educational scenario. A look into local documents positions this study within the local context, discussing the potential of such innovative teaching methodologies.

Chapter 3: Methodology

The Methodology chapter discusses project research in general while narrowing into the creation of 'Triumph'. My personal journey together with curriculum-specific details, project targets and learning objectives are discussed, grounding this into the local educational context.

Chapter 4: The Project

This chapter delves into all the game components, elements and designs, rationalizing the decisions behind the content creation. The game dynamics, playtesting and printing stages are also explored, giving insight to the stages as well as decision-making processes bringing this project to life.

Chapter 5: Conclusions & Recommendations

This concluding chapter reveals this project's strengths and limitations, suggesting aspects within Triumph worth developing and improving upon further as well as areas for further research.

1.6 Conclusion

By having introduced the project's area, aims and objectives, this chapter serves an ideal introduction to the dissertation project Triumph – an initial starting point which will be followed upon throughout this project write-up. The above description of each of the following chapters briefly outline what these involve. The subsequent chapter presents a review of literature in the chosen field, rooted within the experiential learning concept.

Chapter 2: Literature Review

2.1 Introduction

The only true measure of a successful educational model is our students' experience of it (Summers, 2003, p. 64)

This chapter explores the theoretical and pedagogical frameworks that underpin the creation of *Triumph*. Grounded in the principles of experiential learning, this review critically examines existing literature on game-based learning, board games as educational tools, and the broader role of gamification in educational settings. The chapter also considers the curricular relevance of such approaches within the local Maltese context, with reference to the Learning Outcomes Framework (LOF) and National Curriculum Framework (NCF). By investigating both international and local perspectives, this review seeks to highlight how board games can serve as multidimensional learning tools that promote active engagement, knowledge retention, and social interaction—particularly within a subject like PE, which uniquely bridges theoretical content and practical skill development.

2.2 The History and Development of Gamification in the Educational Context

Piaget and Vygotsky (1962) have argued play as being a crucial developmental element across one's life journey, beginning at early childhood stages and progressing through adulthood. The relationship between playing and learning has been studied by theorists for years on end, its dynamic nature continuously evolving to meet the needs of modern society and generations of learners. The nature of play precedes the technological era by far. Older generations nowadays reminisce the games and emotions experienced through creative play when resources such as those so easily accessible nowadays were non-existent (Fornari, 2007). Whereas in past years experiential learning used to occur instinctively through informal settings, one may acknowledge the apathy and rapid incline toward technology driven sedentary lifestyles nowadays (Daniels, 2022).

Despite this, reflecting on traditional educational structures exposes the chalk-and-talk teaching pedagogies commonly used in past decades. In light of modern developments, research laments the reality of the unchanging educational sphere causing a concerning decline in learner interest and motivation (Sousa et al., 2019). This allows for what Kolb (2005) introduced as “the new science of learning” (p. 193), a philosophy reintroducing the same experiential skills which seem to have been lost through the modernization of societies. Being emphasized even further through the educational setting, this type of learning is rising in popularity, the knowledge of its factual benefits being shared and adopted by teachers and educators (Henderson, 2005). This chapter delves into the holistic impact of such non-traditional interventions, discussing its benefits, providing a deeper understanding behind gamified strategies, blending this within a learning context. The contradictory perspective will also be discussed, exposing the implementation challenges this innovative methodology would involve.

2.3 Understanding Human Behaviour – A Psychological Perspective

2.3.1 The Theory of Experience

Dewey and Lewin (1984) describe the concept of learning as “the process whereby knowledge is created through the transformation of experience” (p. 193). Termed the ‘experiential learning theory model’, Kolb (2000) proposes a four-stage spiral whereby the active learner is continuously experiencing, reflecting, thinking and acting – an infinite process of creating knowledge. Literature further supports this notion, discussing education as “a continuing reconstruction of experience” (p. 195), a reciprocal interaction between the learner and their environment during which new experiences shape one’s predetermined knowledge while this is inversely reformed in light of such experiences. Dewey proposes the parallel nature of the process and goal of education whereby educators are encouraged to prioritise a radical ethic similarly focusing on the journey rather than solely the outcome. a growth-promoting mindset influencing learner development (Galea, 2024).

Adding to this concept, the Experiential Learning Theory (ELT) introduced by Dewey and further developed by Kolb (1984) expose meaningful learning as occurring through active engagement and reflection on direct experiences, allowing learners to construct knowledge through *doing* rather than passive reception of information. This theory portrays two dialectic models, portraying how the learner individually grasps and transforms experience. This further branching into four processes, involving Concrete Experience, Abstract Conceptualization, Reflective Observation and Active Experimentation. Zooming out into a wider perspective, during the experiential process the learner bounces off these four processes, the idealized educational experience described as nurturing a holistic, meaningful development (Kolb & Kolb. 2012). The figure below visually illustrates the relationship between the terms outlined above.

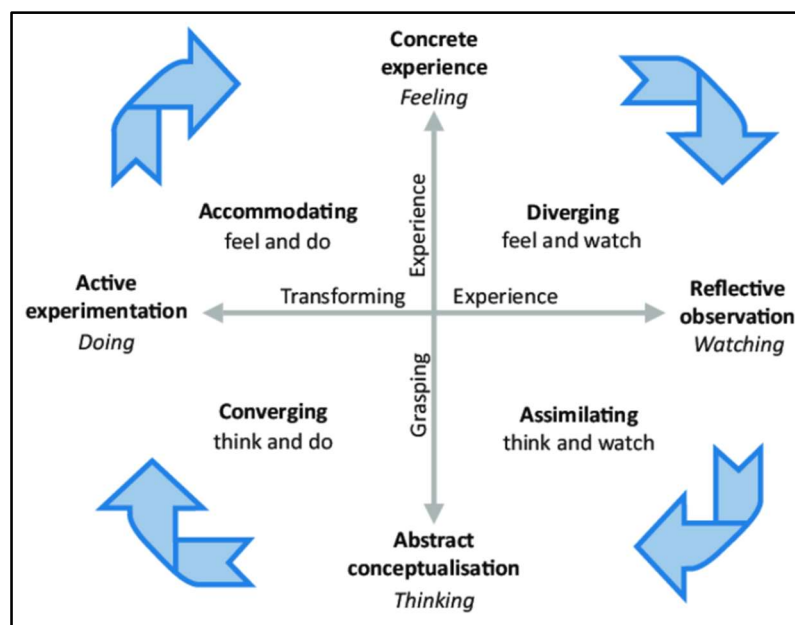


Figure 1: The Experiential Learning process

Despite this seemingly simplistic description, literature manifests multilinear development rooted in the individual's unique learning styles and life trajectory. Lewin identifies the concept of a 'learning space', referring to the surrounding social framework encompassing elements such as the immediate educational setting, school community, family as well as values and culture. Such a natural construct directly influences the learners' experiences, research proving a constant "blend of support and challenge" (Kegan, 1994, p. 42) allowing for developmental growth. Relating back to the gamification educational potential, Kumar and Lightner (2007) reveal such non-traditional interventions as providing an effective learning environment catering for diverse learning styles, an element which will be explored further throughout this dissertation.

2.3.2 Motivation Behind Learning

Under the proper educational conditions, a spark of intrinsic interest can be nurtured into a flame of committed life purpose (Dewey, 1897)

Kalmpouritzis (2019) interestingly differentiates between three types of learning, occurring formally, informally and non-formally, a distinction of which is shown in the table below.

Type of Learning	Description
Formal	Structured, curriculum-based education typically delivered in schools and certified institutions
Non-formal	Occurs outside the formal system but is still organized and intentional, such as extracurricular programs or community courses
Informal	Unstructured, spontaneous, and often unintentional, arising through daily interactions, experiences, and self-directed activities

Table 1: Distinctive Types of Learning

Specifically relating to non-formal learning, research describes this lying between the two ends of the formality spectrum, combining "spontaneity, diversity of teaching methodologies and a focus on the interests of the learner" (p. 21). Prioritizing such a concept encourages active student engagement ultimately contributing to nurturing a meaningful education. Research discusses Maslow's hierarchy depicted through the figure below. This psychological theory proposes an adequate nurturing of the basic and psychological needs to grow the roots

anchoring self-actualization - one's realization and internalized motivation to continually work towards their potential (Rojas et al., 2023). Such a concept may be transferred into the educational sphere, its relevance proving an awareness of needs allowing educators to be able to motivate learners more effectively. This chapter further delves into the implementation of this concept created through game-based environments.

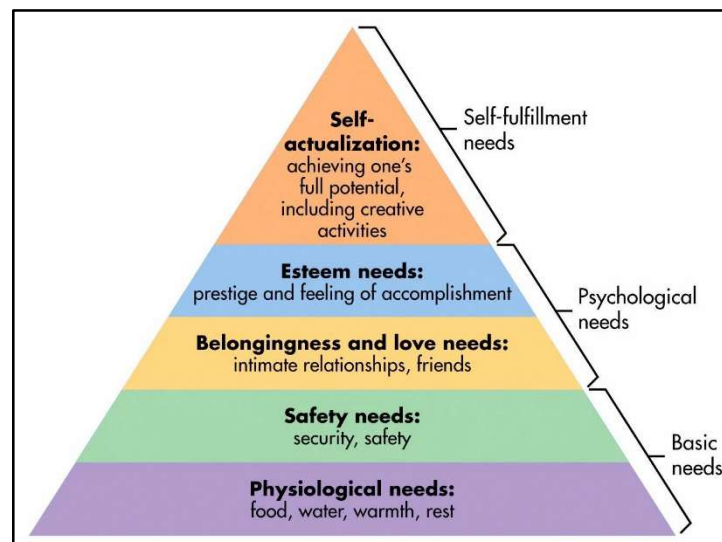


Figure 2: Maslow's Hierarchy of Needs

Hromrek and Roffey (2009) discuss play as “an ideal vehicle” (p. 626), its authentic nature evoking the learner's curiosity through interactions with one another. The opposing intrinsic and extrinsic forms of motivation branch into a similar concept, the power of games closely intertwining the two through a superficial game universe upheld by its players (ibid p. 23). Huizinga (1938) terms an imaginary world of this nature a “magic circle”², depicting its temporary immersive properties. An ideal blend between both intrinsic and extrinsic elements promotes an ‘inside-out’ learning concept, once again contributing to the nature of the learners' self-development. In an educational context, research proves an exploitation of such a concept contributing towards a heightened engagement, holistically impacting them as learners.

Literature accentuates the many-a-time underestimated role of the educator, guiding learners appropriately towards desirable outcomes. Narrowing into a game-based educational environment, Kumar et al. (2007) discuss their key roles in matching the game to their learners' abilities, establishing clear goals and objectives creating a challenging yet motivating atmosphere contributing to one's active engagement. Through reflection and learner-empowering teaching pedagogies, one is encouraged to identify their roles and responsibilities as well as themselves as learners being shaped along their dynamic

² The concept of the “magic circle” originates from Johan Huizinga's 1938 book, *Homo Ludens: A Study of the Play-Element in Culture*. He used it to describe the bounded space where play occurs, separate from everyday life. The modern understanding and formalization of the “magic circle” concept in game studies is often attributed to Katie Salen and Eric Zimmerman's book, *Rules of Play* (2003), expanding on Huizinga's ideas, providing a more defined framework for analysing play and games.

educational and life journey. Being given the opportunity to practice and develop skills in a social school environment, learners are taught to tailor to their unique needs, acknowledging their idiosyncratic learning styles. Similar to Maslow's abovementioned hierarchy, Keeton et al. (2002) demonstrate such an approach influencing one's self-direction, an intrinsic value and individual awareness influencing their motivation and effectiveness as learners. Without teachers transparently communicating this educational potential and taking on this guiding role, Kumar et al. (2007) suggest learning to settle as inferior to enjoyment, the ideal rather being a meaningful experience created through the latter.

Rooting themselves in active participation, game-based learning creates opportunities for application in practice, bridging the gap between information taught in the classroom and an implementation of this in their everyday lives. This promotes transferability of skills and values, promoting the learners' holistic development (Cruickshank & Telfer, 2001). Once again linking to a self-actualizing internal motivation, Dewey similarly discusses the most important attitude one can develop being "the desire to go on learning" (p. 26), embedding a lifelong learning approach.

2.4 A Multi-Dimensional Approach

2.4.1 The Effectiveness of Game-Based Learning

Martins et al. (2008) report that board games deliver educational content in a playful and enjoyable manner, promoting interactions and fostering learning experiences. Despite this, research proves game-based learning as reaching beyond the educational element, simultaneously targeting socio-affective domains and higher level learning outcomes (Charlier & De Fraine, 2013). Tangible examples of these would involve critical thinking, peer communication and cooperation, problem solving and conflict management, interpersonal skills, social and emotional learning, as well as values such as empathy, respect and fair play, among many others (Henderson, 2005). Aiding in the development of social competence, Gazdula and Farr (2019) present board games to have recently increased in popularity, educators exploiting this as an innovative classroom management strategy.

The natural affiliation between children, play and the desire to have fun with others making games an ideal vehicle for teaching social and emotional learning (Hromek & Roffey, 2009, p. 626)

Funneling into socio-emotional learning, Weissberg et al. (2016) discuss this as encompassing five core skills: self-awareness, self-management, social awareness, relationship skills and responsible decision making. Even when not deliberately designed to do so, the simple game structure such as having to adhere to a set of rules and taking turns provides an opportunity for learners to regulate their emotions, finding an appropriate balance between fairness and self-interest. Research has explored parents' perceptions on this type of play, results showing that apart from its academic potential and innovative element, game-based learning - specifically board games - were mostly valued for their potential to build relationships and self-esteem (Lehrer & Petrakos, 2011). Distancing itself from traditional teaching

methodologies, its de-formalization and structure allows for meaningful learning experiences rooted in innate interest and engagement. De Voogt (2017) interestingly highlights such experiences as facilitating cross-cultural social interactions, promoting socio-cultural learning extending beyond borders, vital in the current multicultural societal realities we are facing even locally.

The use of games boasts strengths in a variety of settings, a key component being social cohesion inside and outside the educational environment. Noda et al. (2019) expose how board games help increase student motivation for learning, further leading to positive changes in behaviour. Ascher (2001) identifies the multigenerational component of board games such as in family settings, once again highlighting the interaction and social environment it facilitates within communities.

2.4.2 Building Experiences

Linking to multidimensionality, Bloom (1956) popularly coins the cognitive, socio-affective and psychomotor educational objectives. As educators we are encouraged to continuously tap into these domains in order to engage learners most effectively while creating a tangible and meaningful experience. Concerned with the authoritarian traditional educational system, Dewey (1938) brought forward his philosophy, discussing 'experience' being grounded in two basic principles: continuity and interaction. While the former relates to the influence of current learning into future experiences, the latter describes the nature of an experience constituted by the dynamicity between the learner and one's environment. These interrelating principles allow one to reflect upon the active role occupied by the learners themselves, being given the opportunity to observe, experiment and reflect on their actions. Relating to game-based learning, Kalmpouritzis (2018) amplifies the need to harvest this potential, creating experiences which captivate learners' interests and actively involve them in this discovery and learning process.

“Tell me and I forget, teach me and I remember, involve me and I learn” (Benjamin Franklin)

Being continuously encouraged to innovatively engage learners, research discusses the significant role of the educational game designer, being to captivate one's attention while fostering an environment in which learners acquire new knowledge, develop their skills and critically reflect on their attitudes. In light of this, Dewey sheds light on the implementation aspect of experienced based education. Apart from the deliberate planning which takes place, educators must be able to recognize growth promoting environments, constructing a physical and social setting while continually taking decisions and adapting to meet the learners' needs. Experiential learning distances itself from a 'spectator sport' perspective - it is the teachers' role to facilitate an active learning environment, bringing learners to construct their individual understanding of meaning. Zagal et al. (2007) demonstrate game-based scenarios providing immediate feedback, in turn allowing learners to grasp concepts, evaluate their progress and adapt their strategies as deemed necessary. In an attempt to elevate this learning process, appropriate reflections throughout the game process would strengthen its effectiveness,

encouraging learners to not only engage in the experience but also think about their engagement, being able to apply this learning awareness into other life contexts (Bonwell & Eison, 1991).

Roping in the learners themselves would provide them with the opportunity to reflect and analyze their experiences, practicing self-evaluative skills transferable into their everyday lives. Dewey strongly believed education being based on experience in order to contribute to both the learners and society, this ultimately transferable into their life experiences. Literature suggest the notion of how educational systems must choose whether to revert to intellectually prioritizing teaching methods or to rather utilize the scientific method with the aim of developing and enhancing the learner experience, revolutionizing the traditional learning paradigm.

Daniels (2022) reveals the societal reality we live in today. Describing it as a constant “state of hyperconnectedness” (p. 20), research proves technology hindering our ability to focus without distraction, be present in the moment and allow our imagination to roam freely. The experience of time has become what Rushkoff (2013) terms ‘overwinding’, referring to the attempt to compress activities and speed up processes in a shorter amount of time than necessary. This newly developed urgency for interaction and meaningful experiences heightens the significance of the dynamic process of gameplay. Specifically relating to board games, Durkheim describes its most powerful component being the physical proximity and cohesion it demands, satisfying this inherent need of warm, face-to-face humane interactions unfortunately lost in the modern individualized virtual world. Anchored by a captivating design and physical structure and objects, board games project an imagined world players are able to inhabit collectively, sharing understanding while fuelling action and emotions through the uncertainty of the game eventualities. Linking back to the holistic development across the cognitive, socio-affective and psychomotor domains, such a multi-relational experience cultivates a sense of togetherness and belonging, feelings which seem to be replaced, rather simulated within the increasingly popular technological advancements.

2.5 Game Design and Mechanics

2.5.1 How Mechanics Shape Engagement

Many believe game rules to be the fulcrum bridging the gap between the creator’s vision and player experience. Research manifests how game elements such as the mechanics, design, theme and pieces all significantly contribute to form part of the whole (Selinker, 2011). The learning mechanics refer to the interplay modalities, ultimately formed to engage players while motivating them to develop their knowledge and skills. In educational based games, Zagal et al. (2006) portray these mechanics as being rooted in behavioural patterns, both individual and group actions which transfer gameplay elements into desirable learning outcomes. In this particular game environment, Kalmpouritzis (2019) highlights how such learning objectives should not be perceived as an added element but rather a core gameplay component. Paralleling this to gamified strategies taps into the learners’ intrinsic motivations

and enjoyment, offering a unique approach to learning. Pertaining to the game itself, research exposes various key attributes impacting the learner experience. The theme, originality and gameplay are key elements which adhere to the learners' interests. Other factors such as the complexity, ease of learning, duration and replayability all add to the game experience while potentially increasing learner interactivity. The relation of these features demonstrates the complexity of play and creation process during which the designer must make decisions "support[ing] both learning and making the game intrinsically motivating to players" (Kalmpouritzis, 2014, p. 33). The figure below briefly depicts the learning mechanics modalities, showing the complexities within the game creation and design process.

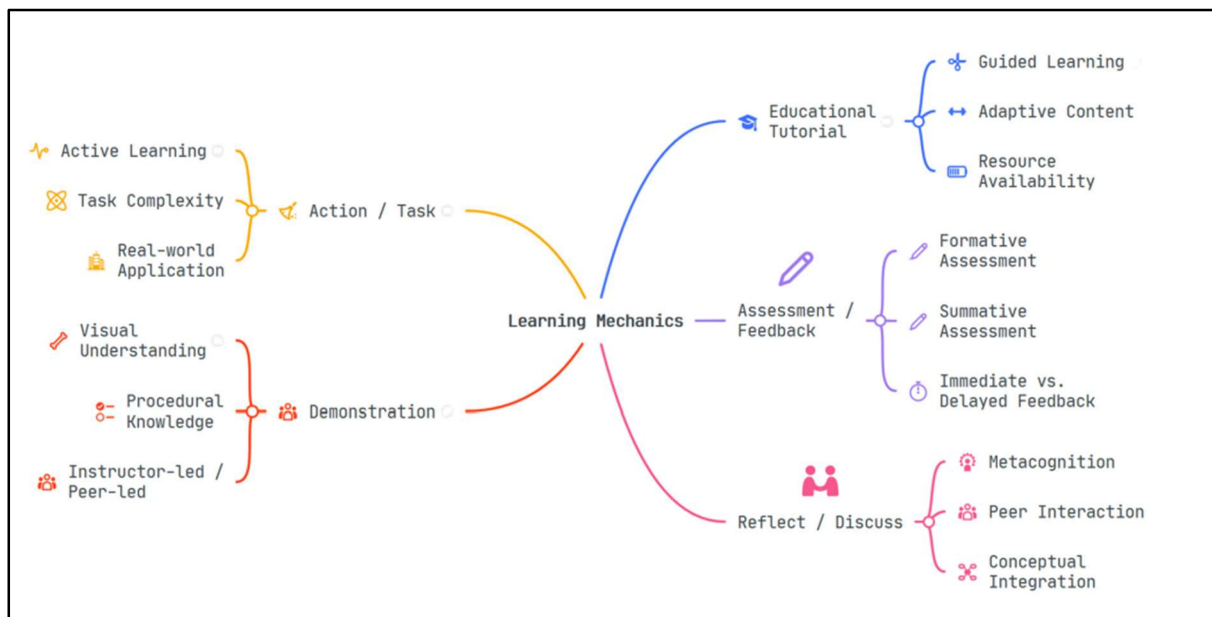


Figure 3: The Learning Mechanics modalities

Czitemenhalyi (2014) explores the relationality between strategy, luck and skill, translating into the boredom and fun extreme ends of the gameplay experience continuum. Educational game designers strive to find the ideal balance between enjoyment and curricular based targets, both coexisting to create the aforementioned intrinsically motivating learning experiences (Daniels, 2022). Funnelling into intricate game mechanics, these must be devised in such a way that the game appeals to its target population, involving differing learner abilities and styles. Games which are not challenging enough are viewed as boring while those which are too challenging become intimidating to the learner, literature revealing the Yerkes-Dodson law similarly illustrating the concept of arousal in relation to performance. Within this inverted-U hypothesis, research explores the optimal state between the two in which performance is optimized, termed the 'flow channel'. Relating to the game-based educational concept, both learners and educators would aim to achieve this equilibrium, stimulating engagement and fostering an active learning platform.

2.5.2 The Individual Learner

Within the educational landscape, Zagal et al. (2006) portray a well-designed game-based approach as having a transformative potential, reaching beyond the mere enjoyment aspect and fostering various cognitive and emotional benefits. Relaying back to the element of motivation, Bartle (1996) interestingly depicts a range of player taxonomies reflecting learners' individual personalities and their influence on the game outcome. The four main player types together with a brief description are represented in the table below.

Player Type	Motivational Drives
Achiever	Mastery, competency, accomplishment, excellence
Explorer	Autonomy, discovery, curiosity
Socializer	Relatedness, community, communication
Killer/Disruptor	winning, status, attention, drama, change

Table 2: Classification of player types

(Adapted from Zagal et al., 2006, p. 1226)

Interestingly, research proves these categories as having permeable boundaries, individuals potentially blending between player types and expressing traits belonging to more than one of the above. Such information is applicable especially in a game setting, the creator able to identify with varied motivations to drive the game mechanics while targeting to appeal to the varied learning styles. Once again prioritizing the educator's role, an ideal situation would involve learners being prompted and guided throughout the educational experience, identifying their personal strengths and weaknesses to then build upon (Fornari, 2007).

Zagal et al. (2007) discuss the need for a co-designed approach in which learners and educators work together, communicating feedback loops and various points of iterative design processing to create the most suitable product. This collaboration would influence decision-making pertaining to crucial game-related aspects, satisfying the learners' needs and preferences. Appropriate input from differing perspectives would add to the reliability and validity of the game outcome, ultimately targeting the educational learning experience.

2.6 The Pitfalls of Educational Game Design

In light of the benefits and positive elements discussed above, one must not ignore the weaknesses of the educational game design approach, exposing the reality educators face. The lack of academic research available specifically on board games suggests the need to deepen understanding of this phenomenon, gaining insight into its learning potential (Woods, 2012). One of the main obstacles outlined involves the learners' uniqueness and individuality. Especially in an educational environment a one-size-fits-all approach may result in disengagement among particular learners, some finding gamified elements motivating while others seeing it a distraction. Zagal et al. (2006) discuss the competitive element and demanding game aspects as potentially deemed threatening by learners. Adding to this, a heightened noise level may further impinge on both the teaching and learning. Research also suggests inclusive properties being yet another implementation barrier, questioning whether such game-based learning may be appropriately tailored to encourage participation by all, promoting an equitable learning environment.

Research expresses the importance of an effective game-based implementation, suggesting the risk that such methodologies may interfere with the core learning objectives (Hromek & Roffey, 2009). Despite a main strength being an increase in learner motivations, Zagal et al. (2006) expose a short-lived reality, sustaining such engagement over time. If not deliberately planned for by the educator, research shows this novelty effect to gradually wear off, bringing the learners to settle once again into prior attitudes. The implementation process should be a dynamic one, adapting gamified strategies and techniques to constantly induce an appropriately challenging environment for diverse learner profiles, targeting active engagement throughout. Daniels (2022) similarly discusses the importance of such games and strategies to be "maintained, revised and constantly evolving according to players' needs" (p. 315), suggesting this to be a significant factor on their overall impact and appeal.

The educators' approach is yet another significant aspect contributing to gamification integration. Its antagonistic learner effectiveness parallels the teaching scenario - while some portray it as potentially enhancing learner engagement, others may seem hesitant due to variables such as limited resources, knowledge and class management when distanced from traditional paradigms. The abovementioned co-design approach involving both learners and educators is a foundational element in sustaining learning effectiveness. In this way one aims to bridge the gap between pedagogy and its execution, prioritizing the learner experience.

2.7 The Local Context

Within schools, one of the main aims of physical education would involve developing physically literate individuals, promoting lifelong involvement in physical activity outside their compulsory schooling years. Analysing the local situation, a study by Fenech (2020) highlights the country's culture being hyper-focused on academic achievement, resulting in an impingement on other significant developmental areas such as physical education. A look at our National Curriculum Framework (2012) proves this, visually depicted through the pie charts below:

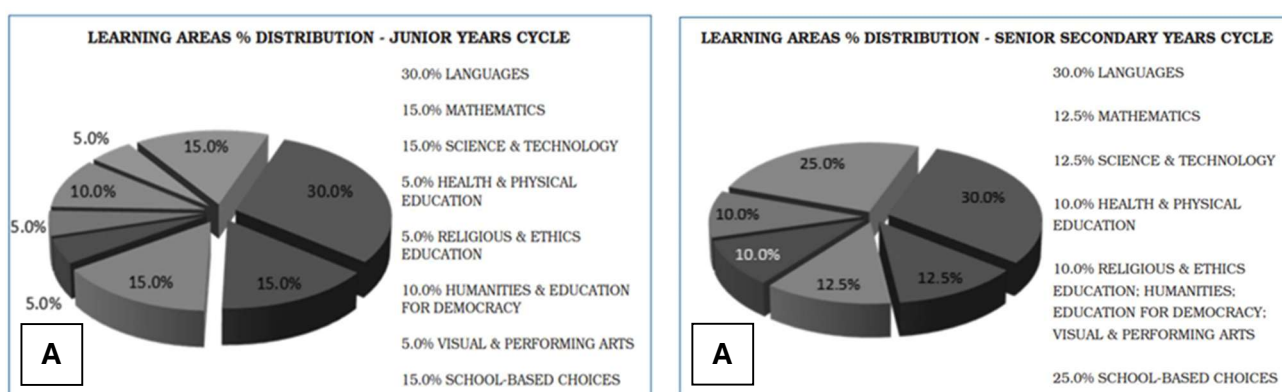


Figure 4: Subject percentage distribution in the Junior (A) and Secondary (B) years cycle

Comparing the percentages above, Figure 1 shows a 5% weighting given to Health and Physical Education. Although equal to other arts and learning areas, this represents a minimal sector when compared to languages, mathematics and school and content-based subject areas. Moving into secondary education, this remains the same (5%) in middle-school (not represented) doubling to 10% in the senior secondary cycle, once again the minimal percentage. Although acknowledging the importance of distributing subject areas, one may reflect upon such compartmentalization of subjects constraining 'learning' into one which occurs between four walls – literature proving otherwise. As educators, we must take on the responsibility of providing children with transferable life skills, reaching beyond those tangibly assessed on pen and paper - a philosophy demanding a reinvention of the educational system in itself.

Bringing this into the game-based educational context specifically relating to my project Triumpha, I feel that such innovative methodologies tap into the holistic learning element, a pivotal aspect which should be prioritized not only in the physical education environment but in one's whole educational and schooling experience. More recently introduced methodologies such as the emergent curriculum encourage learners to embody an active role within the learning journey. Local documents such as the National Curriculum Framework (NCF) and Learning Outcomes Framework (LOF) highlight key focal points and curricular elements to be considered and implemented. These will be explored and discussed in more depth in the following chapter.

2.8 Into Another Dimension

We believe one challenge of future research is finding the right balance between board game design and mechanics aimed at promoting teaching skills as well as the accessibility and authenticity for enjoyable play (O'Neill et al., 2022, p. 83)

Having explored the theoretical perspective behind experiential learning processes and realities, one may ponder upon its limitless potential in the realm of teaching and learning, especially within the educational context. Striking the right balance intertwining the nature of authentic play with targeted learning outcomes directs us toward a novel path, creating a meaningful experience for our learners. Kolb expresses the game-based environment to elicit a 'mindless recording of experience', distancing itself from memorization and content delivery, rather branching into the beauty of experience-driven learning environments.

Game-based environments like *Triumph* invite students into new ways of thinking, collaborating, and engaging with knowledge. Such educational games offer much more than content reinforcement, bridging into another learning dimension - one where joy, autonomy, engagement and ultimately learning can coexist.

2.9 Conclusion

Rooted in literature, this chapter explored the demand for a shift away from passive, traditional learning paradigms, exposing the multidimensional potential of game-based learning - specifically through board games - as a powerful pedagogical approach within the educational landscape. As this dissertation progresses, the upcoming chapters build on this foundation, translating theory into design and evaluating how *Triumph* can serve as a viable educational tool that aligns with both curricular goals and the developmental needs of learners. The succeeding methodological chapter delves into the curricular framework shaping *Triumph* while giving insight into the creation journey behind such a project.

Chapter 3: Methodology

3.1 Introduction

This chapter presents a thorough explanation of the methodological framework supporting this research project. Initially, project-based research and its position within this study is discussed, followed by an in-depth explanation of the creation of this project. Subsequently, this project contextualizes selected aspects within the PE SEC and National Curriculum Framework (NCF), further discussing the learning objectives and the rationale behind the proposed project.

3.2 Projects as Research

Literature describes project-based research as a methodological approach integrating structured research principles within a practical, project-driven framework (Dawson, 2009). This allows one to apply known theoretical knowledge into the challenges faced in reality. Unlike sole theoretical research, the project-based realm boasts the advantage of encompassing hands-on engagement, iterative problem-solving and communication which make it an effective methodology to be exploited by those seeking a similar approach (ibid). Its interdisciplinary potential enhances such aspects of this research method, allowing such an application-driven methodology to impact and efficiently be of use to its intended community. Additionally, its very nature allows for it to be continually revised, tweaked and adapted, making it well-suited for dynamic fields and environments particularly demanding sustainable learning (Pruss et al., 2024).

Cruz (2019) exposes the impact technological advancements have on the educational domain. Such a developing reality demands teachers to continually adapt their strategies, seeking innovative ways to engage their learners and nurture meaningful educational experiences. Research proves active learning methodologies to significantly benefit students' attitudes, engagement and learning, developing higher-order cognitive skills (Widiyawati et al., 2020). Apart from positively impacting the learner experience, literature reveals the other end of the teacher-learner spectrum, proving an increase in self-efficacy from the educators' perspectives (Choi et al., 2019). Fostering a collaborative learning environment creates a setting in which the acquisition of intended learning outcomes occurs naturally, through appropriate guidance. Bosica et al. (2021) discuss a 'project-based learning environment' as one which "offers an excellent opportunity to develop the capacity for professional learning attitudes and lifelong skills" (in Cruz et al., 2022, p. 9). Further research promotes the potential association between such project-based learning and other systems and developed approaches such as STEAM (Science, Technology, Engineering, Arts & Mathematics), describing its' impact on the respective academic area as well as learners' problem solving, inter and intrapersonal skills and values – both hard and soft skills transferrable into their everyday life.

Learner engagement is instrumental for learning to occur (Pruss et al., 2024). In education, several pedagogies such as experiential learning and high impact-based practices among

others are encouraged, prioritizing student-centred education rooted in self-discovery and active participation. Project research similarly parallels this ‘learning by doing’ approach, fostering social connections while allowing one to share ideas, discuss views and empower oneself in the learning process (ibid).

3.2.1 Pitfalls of Project-Based Research

Despite the many advantages such a methodology encompasses, one cannot ignore the other side of the coin, revealing its challenges and limitations. Being an innovative area, project research undoubtedly requires significant time and resources (Pruss et al., 2024). While highly beneficial in fostering creativity and practical experiences, this comes with significant planning, piloting and testing to ensure the final product to be as accurate as possible – not mentioning the endless nature of this process, being able to be adapted in various ways to effectively relate to its target population. Together with these, ethical concerns together with the apathy and resisting behaviours are other challenges one may face upon implementation attempts (ibid). In view of such limitations, one must strive to work for their perceived benefit of the community, countering any disadvantages with a positive outlook if such a project would come to life.

3.2.2 Learning Processes and Effective Pedagogies

Current theories of learning are based on the constructivist perspective combining cognitive and social approaches for effective teaching and learning. A principal feature of constructivist learning describes this as an active process during which individual learners continuously construct meaning, scaffolding on previously learnt knowledge (McLeod, 2025). Social constructivism holds that learning is enhanced through co-operative and collaborative approaches promoting the development of critical thinking and problem-solving skills. Research further proves this to be most effective when learners are actively engaged in authentic, contextualised tasks.

Linking to project-based research, teachers are hence encouraged to foster learning environments appealing to learners’ interests, relevant to their day-to-day experiences and challenging them across physical and socio-cognitive domains. Teaching is most effective when learners are provided with opportunities to make sense of new knowledge in a context which allows them to interact with the teacher and other learners to discuss and negotiate their understanding. Relating to Mosston and Ashworth’s spectrum of teaching styles (2002), traditional teacher-dominated pedagogies are proven to degrade the learners’ role into a passive one. Such authoritarian and command style practices limit social interactions, prioritizing content memorisation mimicking the banking model used extensively for better control and organization (Freire, 2017). Developments in the educational field rather prove a student-centred approach as effectively guiding learners and allowing them to be actively engaged with their own learning. Tirri and Toom (2019) describe teaching as “both an art and a science” (p. 3), pulling the right strings and knowing when and when not to intervene

throughout the lesson while working towards maintaining positive teacher-student relationships. Such pedagogies allow learning to be ground in authentic situations, nurturing meaningful experiences neuroscientifically proven to last much longer in the learners' memory (Galea, 2024).

3.3 The Creation of Triumphpha

3.3.1 My Journey

Following my undergraduate dissertation, the possibility of creating a hands-on project to potentially be used in an educational learning environment immediately interested me. Thinking of something along the lines of an educational board game, I began to brainstorm game concepts rooted in my specialized field of study, physical education and PE SEC. This sparked the beginnings of the creation of Triumphpha, a game design process. In the following chapter I will be delving into more detail involving the thought processes behind the creation of Triumphpha while breaking down the game elements involved.

3.3.2 Tools Necessary to Build the Project

In order to digitalize my journal sketches, technological tools were necessary. The pro version of the online design platform 'Canva' was purchased, Canva Pro, bringing my visuals to life. This allowed me to edit and tweak various elements such as the colours, icons and positioning among many others, aiming to create the best fitting image to represent this board game project. At a later prototyping stage, professional printing services, were used to print the separate game pieces and elements. The printing job was done by Polidano Press Ltd and the game elements involve the board, sport field add on pieces, different question cards and booklet. The arrow spinner and counter game pieces were ordered from Temu and added to the Triumphpha game pack respectively. Amending these as deemed necessary throughout the design stages and following communication with the printing press, the finalized visuals were printed to later create the final, presentable version of the project (refer to Chapter 4 section 4.7.1 for more details on the printing stages).

3.3.3 Objectives and Targets of the Project

Linking to the abovementioned concepts, Triumphpha positions itself within the innovative area of project-based research. This was primarily created for educational purposes, based on elements within the PE SEC curriculum, highlighting learning components from chosen topics within the MATSEC syllabus while incorporating elements of physical activity and movement. Such curricula details are discussed in more depth in the following subchapter – *3.4 Identifying the curriculum-based topics*. Distancing itself from traditional teaching methods, one of the main objectives of this project lies in offering an innovative yet effective learning experience. Tying into this, this project promotes a lifelong learning concept, rooted in learner-centred

empowering pedagogies. Encompassing various elements, Triumphpha boasts being able to cater for a wide spectrum of learners relating to Fleming and Mills' learning style theory (1992), depicted through the visual below. Combining the project elements, Triumphpha offers a multimodal experience, blending the below learning styles into an engaging educational game experience.

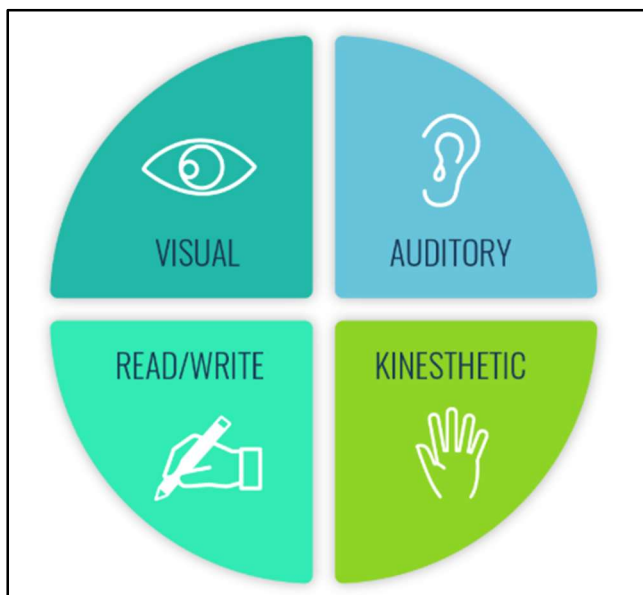


Figure 5:

The VARK learning model

(Adapted from Cloke, 2024)

In addition to this, aspects within Triumphpha relate to the Health-Based Physical Education (HbPE) element, shedding light on the importance of maintaining a holistic wellbeing – ranging from the physical and emotional to psychosocial health aspects.

3.4 Identifying the Curriculum-Based Topics

With its core principles being educational, scrutinizing the latest version of the PE SEC syllabus (SEC 32), the potential topics which could be implemented and addressed through the board game were listed, eventually being narrowed down to four:

- Skill Acquisition and Sport Psychology
- Anatomy and Physiology
- Health, Fitness & Wellbeing
- Sport in Society

(SEC 32, p. 6)

Reviewing information from local education documents, other elements such as general sport trivia, game rules and sporting event history were added into the game. Although perhaps not requisites of the syllabus, I felt that including certain trivia questions would add to the thrill of the game, exposing students to fresh information other than that being solely syllabus focused. Narrowing the content down was a challenge in itself, later on developing these into

question concepts of differing difficulty levels – easy/medium/hard to be answered by learners as they work and advance through the game.

This NCF promotes:

- A clear focus on improving the quality of education and raising student achievement levels
- A readiness to depart from traditional curriculum structures and practices that may restrict learning
- Flexible learning programmes providing diverse and integrated learning experiences that cater for a wide spectrum of learners and which suit the interests and capabilities of individual learners within nationally accepted parameters
- Learning programmes that focus on understanding and emphasise the learning process and the active co-construction of meaning rather than the mere acquisition of content

- Learning programmes that empower teachers to implement innovative teaching/learning strategies especially through the use of eLearning
- A move away from exclusively subject-based approach that favours fragmentation and compartmentalisation of knowledge to a more cross-curricular, thematic, interdisciplinary and collaborative approach that reflects real life situations and encourages transfer of skills from one learning area to another.

Figure 6: Excerpts from the National Curriculum Framework

(NCF, 2012, p. 15)

The above excerpt, taken from the NCF document (p. 15) clearly identifies core educational reformative principles. This project taps into these points above, its objectives similarly fostering an engaging and collaborative learning experience within the classroom. The essence of this specific project and this branch of research in general is emphasized through the second point above, whereby the very implementation of the project demands “a readiness to depart from traditional curriculum structures and practices that may restrict learning”.

Throughout the NCF, the learner-centred and lifelong learning concepts are two fundamental elements which resurface consistently. Together with these educational pillars, the cross-curricular theme ‘Learning to Learn and Co-Operative Learning’ is introduced, fostering a collaborative environment in which learning becomes a dynamic process. Thrown into a socio-developmental context, being exposed to diverse viewpoints and personalities, learners learn to “function effectively within group settings”. Naturally involving themselves in processes such as the processing and synthesizing of information, creating and problem solving, such methodologies allow for active peer engagement, creating meaningful learning experiences equipping learners with skills and competencies transferable into life outside the school environment – reflecting the last responsibility level in Hellison’s TPSR³ model.

³ Teaching Personal and Social Responsibility (1986)

Progression and Differentiation in Learning

The principles of diversity and inclusion which underpin the NCF imply that at all stages learners of all aptitudes and competences should experience success, challenge, and the necessary support to sustain their effort. They need flexible learning programmes providing diverse learning experiences that cater for a wide spectrum of learners and allow for different rates of progression as children and young people work through their school years. Different approaches are needed to address different learning needs. With the focus increasingly on the learner and with more mixed-ability classes in schools, differentiated approaches are becoming more important and teachers need to adopt strategies that build on children's and young people's previous learning and help them progress.

Figure 7: Excerpts from the LAP - Addressing differentiation

(Learning Assessment Program for PE & Sports, 2017, p. 38)

Another key component mentioned throughout local documents is learner differentiation. In the educational scene every learner is unique and educators must cater for individual needs, aiming to guide and holistically influence the learners. As seen through the above, inclusion and diversity have not only become a duty and educator's responsibility however are included in the NCF and LO documents as a reality we face daily, 'Diversity' being the second of the five principles outlined in the educational framework. Implementing flexible learning programmes, one must continually strive to pave "diverse pathways to learning so that all learners are equipped with the necessary skills to experience success in their life at school and beyond" (NCF, p. 31).

3.5 The Learning Objectives

Let the main object of this, our Didactic be as follows: To seek and to find a method of instruction by which teachers may teach less, but learners may learn more; by which schools may be the scene of less noise, aversion and useless labour but of more leisure, enjoyment and solid progress. (*LOF, p. 9*) Specifically referring to the PE SEC syllabus' list of learning outcomes (SEC 32, 2025), this project directly targets the learning outcomes 3, 4 & 5, outlined below.

- LO 3.** I can demonstrate knowledge and understand the contribution which physical activity and sport make to health, fitness and wellbeing.
- LO 4.** I can recognise the role of the musculoskeletal systems in sport and physical activity
- LO 5.** I can understand and recognise the role of sports and sporting competitions in the culture and leisure time of society. I can recognise the local and international institutions that promote and regulate sporting events and activities

Figure 8: Excerpt from the SEC32 LO document

The above learning outcomes particularly refer to the theoretically based knowledge involved in the written part of the PE SEC examination. The game experience however targets more than this quantifiable learning component, tapping into the more abstract, socially constructed elements falling under the ‘Holistic Development’ section of the LO framework. The table below brings together excerpts from the LOF, filtered and directly relating to Triumph and the board game experience. As can be seen below, these range from the basic Level 7 to the most developed ‘gifted & talented’ behaviours at Level 10, which learners pass through across their secondary educational years from Year 7 through Year 11.

Level 7	Level 8	Level 9	Level 10
HD7.12 I can follow rules honestly and always play fair	HD8.5 I can work independently and commit to a task even without direct supervision	HD9.5 I can cooperate with others to achieve a common goal and to consider the welfare of each member of my group	HD10.9 I can embrace an active lifestyle and help others to live a healthy and active lifestyle
HD7.5 I can solve issues with other members of my group in a peaceful manner	HD8.15 I can develop a sense of belonging to the group and demonstrate resilience to complete a task along with members in my group	HD9.8 I can feel successful when we rely on each other and achieve together	HD10.3 I can support and encourage all my teammates, so that each member of the group can perform at own personal best

Table 3: Holistic Development Levels

(Adapted from Learning Outcomes Framework, 2024, p. 8)

Rooted in an Activist Approach, the above excerpts specifically relate to curricular models namely TPSR, Adventure Based Learning and Cooperative Learning. Such elements are deliberately targeted and must be appropriately guided by the respective educator throughout the learners' board game experience.

3.6 Validity and Reliability

Rooted in the PE SEC syllabus content, Triumphpha seeks to be a valid and reliable resource to be exploited by teachers. Further aiming to ensure such reliability of the use and content of Triumphpha, I made it a point to discuss different areas with current physical educators, as well as my supervisor and advisor who guided me throughout this project journey. Informal, small-scale playtesting was also carried out at different stages across the Triumphpha creation timeline (refer to Appendix A). This definitely allowed me to amend and tweak certain decisions as deemed necessary, ultimately aiming to create a final resource to be used by teachers in the educational context. Despite this, I definitely would like for Triumphpha to be play tested and used further within schools and social contexts and will be organizing such experiences to observe Triumphpha being played by varying player populations, perhaps having to amend any game decisions further.

3.7 Conclusion

This chapter presents an insight to the methodological processes throughout the dissertation journey, moving from a general – discussing the niche of project research - to a more specific perspective, describing the creation of Triumphpha together with its curricular relations and holistic learning objectives. The following chapter presents the project

Chapter 4: The Project

4.1 Introduction

The below chapter delves into more depth behind the creation of Triumpha. Describing my thought processes and decisions in more detail, this chapter presents the board game content, with close reference to the PE SEC syllabus and various game components forming part of the board game package. Furthermore, an analysis of the gameplay decisions will be discussed, together with the accompanying game designs and visuals created to enhance the board game experience.

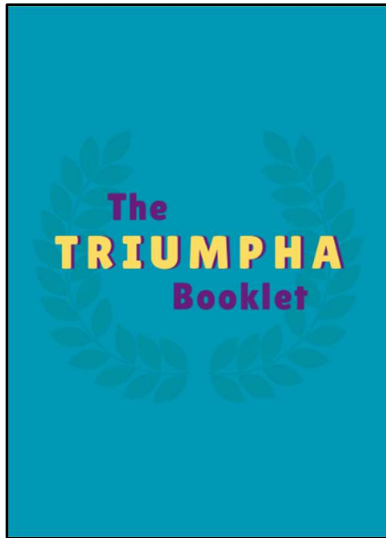
4.2 Content

As discussed earlier in Chapter 3, Triumpha roots itself in the PE SEC O-level subject. This was initially intended to target Olympic education, which was strengthened through the inclusion of board game elements. This idea, however, was scrapped earlier on due to copyright infringement issues and rather than keeping this as the central theme, instead blended this concept within the game. Triumpha specifically targets subject topics taken from the PE SEC syllabus (refer to Chapter 3) while incorporating elements such as general sport trivia, game rules, and sporting event history, striving to strike a balance between education, knowledge and engagement.

4.2.1 The Triumpha Board Game Package – What’s Included?

The board game pack consists of various elements needed to thoroughly explain and set up the game to be played and enjoyed by its learners. These include the Triumpha Booklet, the physical board itself together with its add-on pieces as well as the different game card sets, namely the Key, Spinner, Movement and Question cards. A spinner arrow and 10 counter Triumpha game pieces are also included in the board game pack as elements to be used appropriately during play. Each of these components are explained and presented below in more detail.

i. *The Triumpha Booklet*



The Triumpha Booklet includes all board game information involving the content, game set up and game rules. These are presented in a user friendly easy to understand fashion involving step-by-step game processes each with accompanying visuals and descriptions.

Triumpha has different gameplays, such as The Triumpha Dash – a faster route to complete the game. This booklet exhausts all this information, presenting these game elements accordingly.

Figure 9: The Triumpha Booklet

ii. *The Triumpha Board and add-on pieces*

The Triumpha setup involves the main board (refer to Figure A below) together with the gradual addition of the separate board game elements (Figure 8: A and B below). The spinner piece is also to be included in its respective area during the game set up, to then be used accordingly. During Triumpha, players refurbish the sport fields as they progress throughout the game, adding the board game piece on top of its respective area when successfully completing the required amount of questions. The game is won when all pieces are added to the board, creating a new game board face as presented in Figure B below.

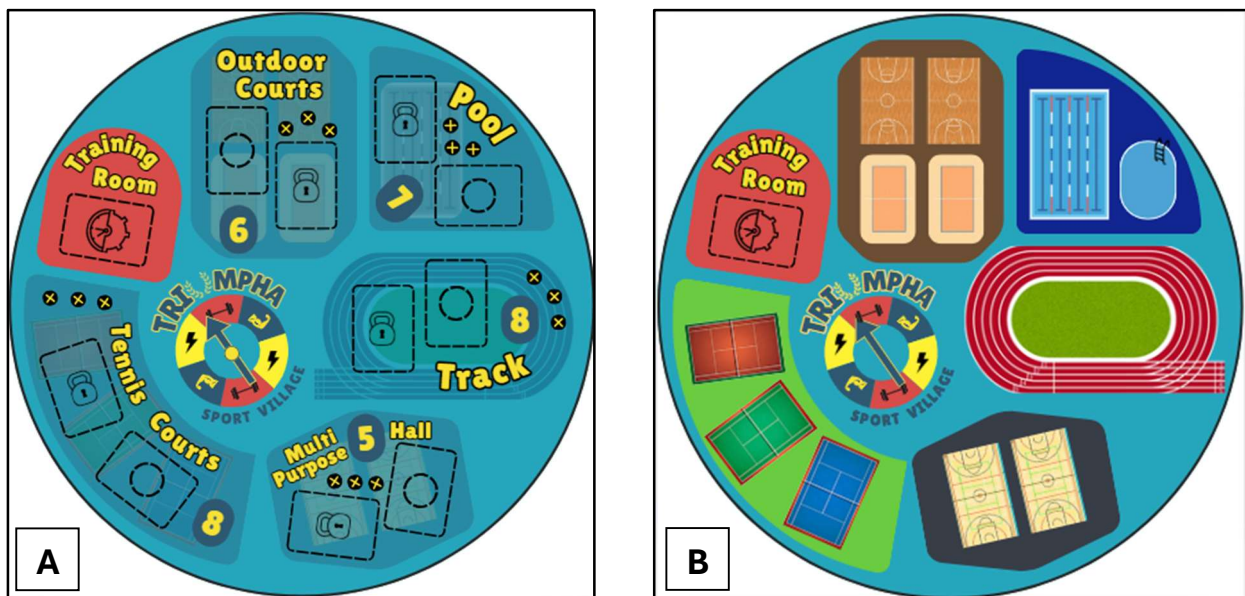


Figure 10: Board Game face without (A) and with (B) added sport field game pieces

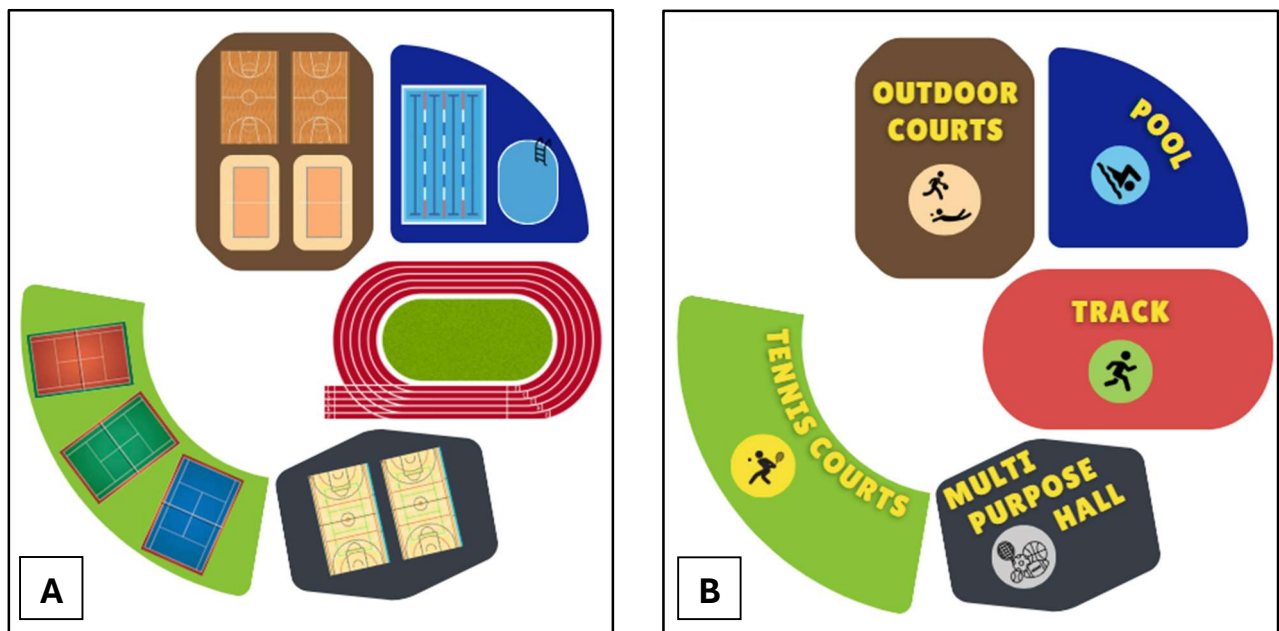


Figure 11: Added game pieces Front (A) and Back (B) views

iii. The Game Cards

These are further divided into four categories, namely the Key Cards, Question Cards, Spinner Cards and Movement Cards – portrayed through Figure 9 below - all of which will be explained and analysed throughout this chapter. In the presented version of the board game, the total card quantities are shown in the table that follows. These quantities were developed for ease of back-to-back printing and cutting in earlier stages of *Triumph*, fitting eighteen cards each single sheet (refer to Figure 10 below). Additionally, a large card amount allows for game replayability - the board game being able to be played over and over due to decisions and luck yielding different outcomes, ultimately keeping the game entertaining for its players.

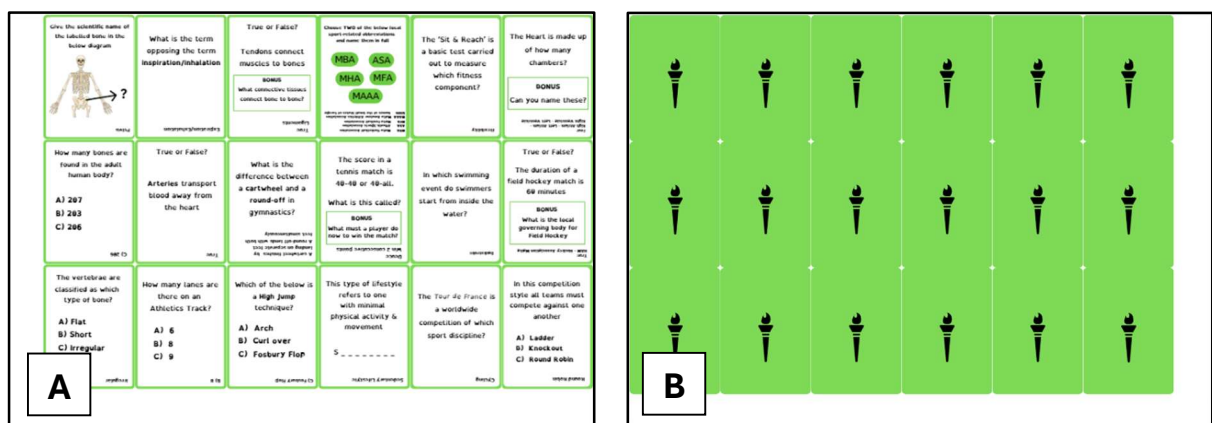


Figure 12: Front (A) and Back (B) views of rookie card printing visuals

Triumpha Game Cards	Quantity
Key Cards	x36
Question Cards	
- Rookie (Green)	x54
- Amateur (Orange)	x54
- Pro (Red)	x54
Spinner Cards	
- PowerUps/Hurdles	x33
- Challenges	x3
Movement Cards	x54

Table 4:
Triumpha Card Quantities

Aware of the learner differentiation reality, I made it a point to add variations within the game. Examples of these include differing question card difficulty levels as portrayed above (rookie-amateur-pro), as well as decisions to be taken throughout the game such as choosing to spin the wheel or to advance differently in the game. Being chosen by the learners themselves, such methodological components enhance the collaborative aspect of the game, demanding communication and decisions to be taken by the group as a team rather than individually. Hence through playing the game itself, learners are exposed to a multidimensional learning environment, linking to the holistic outcomes mentioned earlier on. Referring back to Table 2 in Chapter 3, a basic example of this at the earliest secondary educational stage, Year 7, would involve “solv[ing] issues with other members of my group in a peaceful manner” (HD7.5), a foundation to then be developed upon across the years. Such interpersonal skills are boasted to be at the core of Triumpha and the game dimension, prioritizing interactivity through experiential learning (Noda et al., 2019). Earlier on in Chapter 2, the power of games in multidomain learning was discussed, bringing one back to the notion of how such methodologies “are efficacious for goals other than increasing knowledge” (ibid, p. 3), prioritizing a holistic learning experience.

To facilitate the educator’s role, I created a resource organizing the question card breakdown, visually depicting all the question cards involved in the game, as well as which fall under the specific curricular topic (refer to Appendix C). In this way, teachers may identify which elements of the curriculum have been targeted in the formulated questions, data they may choose to analyse especially if adding on to the Triumpha questions when creating and personalizing their own resources. Such information will help identify potential strengths and weaknesses, a useful tool in an educational context.



Figure 13: Triumpha Question Card Visuals

4.2.2 Game Card Functions

When answered correctly, the **Key Card** is used to be able to 'unlock' the respective sport field chosen. Once unlocked, players may begin to attempt to refurbish the sport field of choice by correctly answering Question Cards. **Question Cards** vary between Rookie (easy - green), Amateur (medium - orange) and Pro (challenging - red) difficulty levels, involving syllabus related questions and tasks to be completed. Answering a specific amount of these cards correctly will successfully refurbish the chosen sport field.

At certain points during the game, players may have/decide to Spin the Wheel, landing on a set of three icon variables – the bolt, gym and muscle icons – to then take action accordingly. If landing on the bolt icon, players must draw a **Spinner Card**. These vary between PowerUps and Hurdles referring to positive and negative consequences, respectively, or on the rare occasion this may be a Challenge, a successful completion of which would be followed with a reward.

When landing on the muscle icon, players must draw a **Movement Card** and complete the given physical activity before resuming play. This set of cards consists of various bodyweight exercises and physical activities, as well as a repetition indicator showing how many repetitions of each activity must be executed. This too involves an element of choice, allowing players to choose the repetition count. Once again, this was deliberately created to allow for differentiation (refer to Figure 15 further in this chapter to see the old versus new movement card visuals).

The barbell icon does not have any cards related to it, however if landing on this icon, players must correctly answer a Question Card from the progress pile in the Training Room before resuming the game, a game mechanic which will be discussed later on during this chapter. To read and better understand the game rules and how to play, refer to the Triumph Board Game Booklet, presented within the Triumph Board Game package.

4.3 Gameplay Decisions

If a player doesn't understand what's happening, he gets frustrated. If he knows it all (or thinks he does), he gets bored. The sweet spot called 'fun' exists between these two extremes (Selinker, 2011, p. 61)

The development of Triumph involved the consideration of various gameplay elements aiming to create a 'final product'⁴ which is not only engaging but also educationally effective within a classroom environment. This section positions myself as a researcher within the game design process while exploring key gameplay decisions made, their underlying rationale and how they contributed to achieving this project's overall objectives.

4.3.1 My Role as a Game Designer

People who wish to design games should play games. Lots of them.
(Selinker, 2011, p. 7)

In continuous communication with my supervisor, we discussed the importance of the preparatory phase prior to begin building this project. Apart from reading and familiarising myself with the various forms of research and literature available on my chosen field of study, I also targeted to begin playing different types of card and board games across different settings. Being able to experience these simultaneously from a player yet design perspective allowed me to begin to question the creators' decisions, delving into gameplay, design and development – a few of the many intertwining components when tapping into the game dimension. I consider myself a creative individual keen to explore innovation and I believe this to be one of the catalysts in my decision to take on this research project.

⁴ Although perhaps being presented as finalised as possible, I believe this project is dynamic and flexible, open to be amended and shaped through feedback from different player populations, ultimately ameliorating its potential.

Despite this however, ironically enough I would be lying if I called myself a gamer, having to admit that very rarely do I taste anything close to victory during family or friend game nights. What definitely interests me however is the aesthetical component, identifying my inclination towards the visual and kinaesthetic learning styles. Blending this together with my passion for teaching and more specifically the area of Physical Education helped bring my vision to life, hoping to create a resource which can positively impact the learners' experience. Although tedious, creating *Triumph* didn't feel like a monotonous process but rather an exciting journey in which I have learnt – and am yet learning – so much.

4.3.2 Collaborative vs Competitive Dynamics

Recognizing the value of both social interaction and the thrill of achievement especially in a physical education environment, it was challenging to decide upon which path to follow in the early development stages of the game. I initially decided to go with the collaborative dynamic, idealizing a holistic educational experience. Especially targeting the secondary years, omitting the competitive element worried me, beginning to feel this could potentially impinge on the learner engagement and enthusiasm. As I began developing the game further however, it was interesting to be able to explore both collaborative and competitive opportunities, the game rules shaping this dynamic and widening what I thought had to be a rigid framework. Hence, one of the foundational decisions in the design of *Triumph* strikes a balance between the collaborative and competitive gameplay components.

This game is structured to encourage players to work together to ultimately refurbish *Triumph* Sport Village in time *while also* fostering healthy competition, manifesting itself in various forms and chosen styles of play. I feel that this is one of the only times where my indecisiveness could possibly have been advantageous. Such an element broadens the games horizons, enhancing the game's replayability value by giving one the opportunity to choose between different playing modes. From a player perspective, this appeals to different learner interests and personal preferences. The below scrutinizes these polar game collaborative and competitive concepts within *Triumph*.

The Collaborative element: As previously mentioned, on a surface level *Triumph* demands collaboration, players needing to work with one another to reach the ultimate goal of refurbishing all the game Sport Fields. Digging deeper below the surface, the game mechanics are deliberately planned to heighten the collaborative aspect, encouraging players to communicate, problem-solve and work their way through the game. Decisions such as which sport field to attempt to unlock, which question difficulty to attempt as well as game decisions such as whether to spin the wheel or not are all examples of continuous critical decisions the team must decide upon together to advance throughout the game. With the educator's guidance, learners are encouraged to work together effectively, smoothen out difficulties when they arise and learn how to overcome challenges together in a practical and realistic setting.

Observing learners' behaviours, educators may choose to reflect on the game experience to close off the lesson, bringing up lived scenarios minutes before and discussing these together with the class, aiming to make such an experience meaningful. The gamemaster role within Triumphpha also calls for a collaboration between them and the game players, ensuring game rules are followed and a mutual respect between all is practiced throughout. Such values are transferable into everyday life, Triumphpha targeting to be a scaled down reflection of reality.

The Competitive element: Zagal et al. (2006) expose the reality of a satisfying game ending as an element directly roping the learners further into the game, creating an environment in which they "care about the outcome" (p. 33). Aiming to bring this into Triumphpha, being played by a minimum of 2 players, one may decide to introduce the competitive aspect with different teams, working together as a group yet simultaneously playing against other teams using separate Triumphpha Boards all attempting to win the game by successfully refurbishing all their sport fields first. In addition to the possibility of playing 'against time', the Triumphpha Rule Book explains a score system which may be introduced, each question weighing different points depending on its difficulty (refer to The Triumphpha Booklet p. 15 – The Triumphpha Point System). Players may choose to keep track of their total scores, logging total points accumulated together with the total time taken on the scoresheet provided as two final scores. As Triumphpha is played over and over again, these form a 'Personal Best' and 'High score' log to be broken by them themselves or other teams. Such game elements provide the competitive thrill within the game and it is ultimately up to the players and educators to select the most appropriate method of play.

This dual approach enhances motivation, promoting teamwork and shared success alongside the excitement and drive generated by competition. Integrating both components reflects real-world sports and physical activity, where collaboration and competition coexist, enriching the educational relevance of the game.

4.3.3 The Fun - Educational Spectrum

A central goal throughout the design process was to create a game that is simultaneously fun, engaging, and educational, tailored for efficient use in a classroom setting. To maintain student interest and encourage active participation, various game mechanics were incorporated to sustain momentum and excitement, all of which will be analysed and discussed throughout this chapter. To be able to do so effectively, as a game designer I had to tune into the relations between strategy, luck and skill, balancing these elements to find the "sweet spot" (Selinker, 2011, p. 61) keeping players engaged.

A game is an interactive mathematical system, made concrete, used to tell a story (Selinker, 2011, p. 44)

Furthering on such a holistic learning experience, Selinker discusses how the game mechanics and metaphor intertwine with one another to ultimately create the game experience. This can be simplified into the mechanics versus theme driven elements, "crafting an experience that makes so much sense that players become utterly immersed in the play" (ibid, p.48). Triumphpha

tells a story - the players are villagers who must refurbish their run down sport village in time to host the Triumphpha Sport Festival. The figure below is an extract from the playbook resource, setting the scene.

Triumphpha Sport Village has been run down and out of use for years on end. The villagers have been living sedentary, physically inactive lifestyles and this needs to change.

In hope of rekindling sport interest, the first ever Triumphpha Sport Festival will be taking place - the largest sporting event in village history.

Can you refurbish Triumphpha Sport Village in time to host the festival?

We are counting on you!

Figure 14: An extract from the Triumphpha Playbook (p. 1)

Such an element is invaluable within the game context, breathing life into Triumphpha transcending beyond rules to be followed. Without this, the game may become monotonous, its structure limiting player enjoyment and creativity. Game mechanics hence root themselves into the theme, creating an entertaining learning experience for all.

4.3.4 A Differentiation Reality

The concept of appealing to the individual learner is prioritised throughout Triumphpha. This can be seen through the previously mentioned game elements such as decisions whether to include a point system, which question card and exercise difficulty to select, the bonus questions increasing question difficulty as well as the addition of adaptive variations scaling down the movement cards. In addition to all this, certain elements were also proactively included within the board game, targeting specific learner impairments. The dyslexic friendly font 'OpenDyslexic' was downloaded and used consistently throughout all board game resources, making Triumphpha dyslexia friendly and easily interactive. Colour blindness was also taken into consideration. With red, green and orange being particularly difficult colours to distinguish between, easy-medium-difficult torch icons were created to indicate their respective card and hence question difficulties, all which can be seen below.

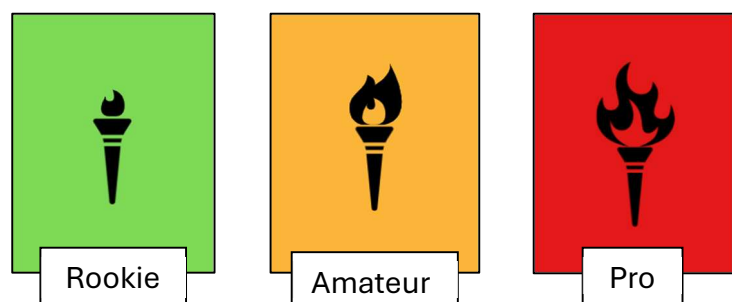


Figure 15: The three differentiated Question Card levels

Additionally relating to the differentiation reality, Triumpha users may scan a QR code (refer to The Triumpha Booklet, p. 17) allowing them to access their Triumpha resources. This was purposely included to allow the teacher to download, personalize and print their own resources, formulating their own questions to then be included in the game. This involves blank Question Cards as well as Triumpha scoresheets which can be used to log the player time and score. These can be used as deemed necessary by the teacher, an example being dedicating a set amount of time at the beginning or towards the end of the lesson to group learners and encourage them to create their own questions taken from the syllabus materials – to then be checked and added into the board game. This further diversifies gameplay while branching into a student-centred teaching methodology. Such resources invite teachers to give Triumpha their own touch, being able to tailor this to their learners' specific needs (refer to Appendix D for visuals or scan the QR code to access them as a PDF version).

The Triumpha gamemaster role allows for differentiation in itself and was initially introduced to challenge the 'cheating' reality between players. Since this game roots itself in collaboration and competition against the other Triumpha teams, having a gamemaster adds the 'policing' aspect, ensuring proper play is executed. This resembles the 'banker' concept in monopoly, the difference being the more game responsibilities and importance given in Triumpha. The managerial concept of the gamemasters role still allows for learning to take place, involving drawing, reading out and asking the questions, manoeuvring and leading the overall gameplay. The gamemaster would ideally understand the rules of the game clearly, being able to explain and communicate effectively with the rest of the players as they work their way through Triumpha, giving the game appropriate commands to be followed respectively by the players.

Players' attitudes vary based on individual experiences and educational goals, the same game elements being considered appealing or not at all across individuals. Although not particularly participating in the main gameplay, the gamemaster role is considered to be an active one and may perhaps interest various learners more than the Triumpha player role. Linking to the player type classification discussed earlier in the Literature Review (refer to p. 13) such players may fall under the 'socialiser' category, fulfilling communication related motivational drives (Zagal et al., 2006). The opportunity to take on such a role hence embraces the learning spectrum and once again embraces a student-centred educational approach.

Relating to the differentiation reality within the physical movement card pack, I aimed to make this as inclusive as possible. Different skin complexions were added, as well as different genders through male and female visuals. Unfortunately, due to the limited card surface area I was not able to involve other adaptation and inclusive aspects. For this reason, I originally intended to create an Activity Booklet depicting and explaining such varied activities, however I once again faced the challenge of this being non-exhaustive. Aiming to tackle this, I thought of the possibility of creating an online forum whereby Triumpha owners and players may upload their adaptations and versions, or simply additions to the physical activities in the movement pack. Such an element builds on the collaborative and communication element even outside the Triumpha gameplay itself, potentially being a useful resource for educators to connect and feed off one another's original ideas. This may be easily set up through the use

of a QR code which may eventually be added to the Triumpha Booklet – educators would only have to scan the code and upload any photos or videos they wish to share. This element has not yet been set up for dissertation purposes and is an idea worth considering and adding to this resource, targeting to decrease the chasm between expectations and reality.

4.4 A Closer Look at the Triumpha Components

This section analyses various game components in more detail, giving insight on the thought processes behind why certain decisions were taken and eventually included or perhaps omitted from the final version of Triumpha to date. More specifically, the Spinner Wheel, Movement Cards, and Training Room elements will be analysed in more detail below, supported by accompanying Triumpha visuals.

i. The Spinner Wheel

Literature exposes the element of chance as “intriguing”. In Triumpha, this manifests itself within the Spinner Wheel and its varied outcome possibilities throughout the course of the game. The initial idea incorporated the physical activity component, each card having three possible outcomes, referring to the three different icons potentially landed on.



Figure 16: The Spinner Wheel visual

As the game design developed, this was shaped into a PowerUp (positive) versus Hurdle (negative) outcome, paralleling the players’ reasons behind spinning the wheel. This is to be spun following an incorrectly answered question card or three consecutive correctly answered question cards. The different possibilities and polar outcomes of such a mechanic keeps players entertained while providing an appropriate reward or punishment as consequences following their actions.

To add to the element of luck and surprise, the spinner card pack includes three challenges, which may be drawn randomly by chance at any point throughout the game. Followed by a hefty reward upon successful completion, these create an element of unpredictability and thrill, encouraging players to get together and work with one another to accomplish what is being asked of them.

ii. *The Movement Cards - Let's Get Physical*

Being a physical activity related board game, I definitely wanted to somehow tie the physical movement component into Triumph. In the first game prototype this was present yet minimal, involving specific physical exercises written in text on the drawn card. This was found to be one of the most entertaining elements of the game during playtesting stages and suggestions to increase its significance in the game were unanimous.



Figure 17: The Movement Card pack

In order to exploit this element, the Movement Card pack was created. This is made up of fifty-four (54) cards, each presenting a different type of exercise. A picture visual and repetition ranges are also provided at the top of each visual, allowing for the players to execute this to their maximum potential. This was previously a given a fixed repetition (A), however was adapted into a range between the easy-medium-difficult ranges to allowing for choice and differentiation (B). During the creation of this card pack, it felt important to include some type of variations from the average. For this reason, exercise variations have also been added to some of the cards, portraying alternative ways to scale down the activities if deemed too challenging (C). The visual below depicts an example of the older and newest versions of the movement cards. A difference in font may also be observed in the 'Push Ups' text – the newer version utilizing the Open Dyslexic font presenting a visual much easier to read for learners with such impairments.

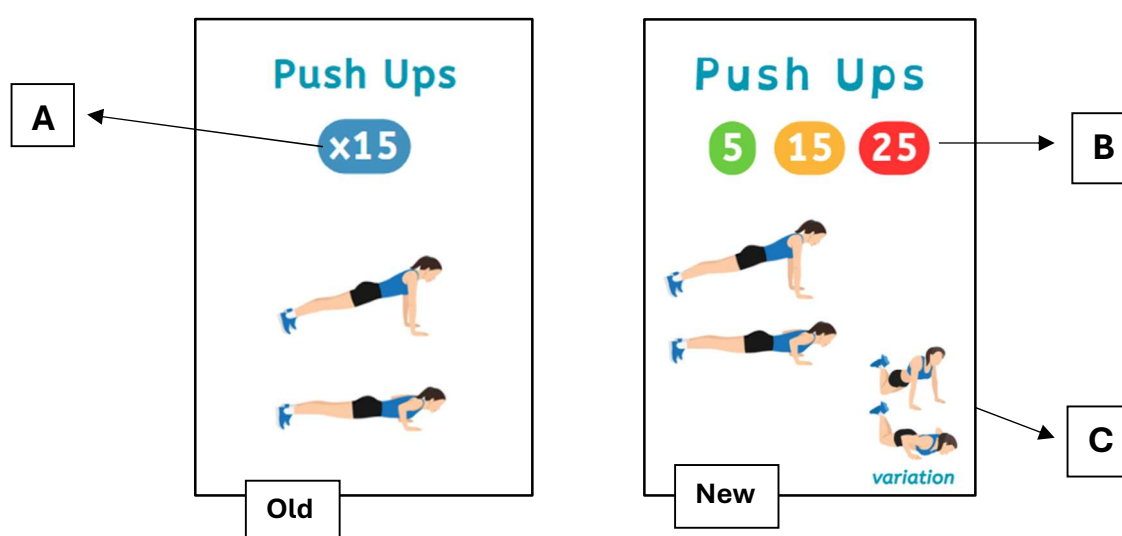


Figure 18: Old vs Newer Movement Card visuals

Due to the limited card surface area, the Triumphpha package also aims to includes a resource involving different ideas for exercise adaptations and variations, scaling the average exercise up or down depending on the learners' abilities. This however has not been created as yet, and I aim to set up an online forum to be exploited at a later stage. Triumphpha invites educators to be creative, adapting to the specific needs of the class and individual learners, seeking innovative ways to keep the activities engaging and able to be executed by all.

This element of the game enhances the physical component, giving the game a practical edge and keeping players on their toes...*or more like in a plank*. Encouraging movement, this addition to the game allows learners to familiarize themselves with the proper exercise terminology, being visually depicted, read out and executed from the drawn cards. A basic understanding of the correct terms and techniques to carry out such physical exercises is key, especially those aspiring to perhaps further their studies in the field of sport and physical education.

iii. The Training Room

In Triumphpha, the creation of the Training Room significantly influences the educational component within the game. When answering a Question card incorrectly, players must place the card in the Training Room, gradually forming the 'progress pile' – the stack of previously incorrectly answered cards. Within the game, players may be asked to attempt to answer these cards correctly before being able to resume the game.



Figure 19: The Training Room visual

This prioritizes the game's learning concept – rather than being discarded and placed at the bottom of the card pile, it is being placed in a distinct area. From an educator's point of view, this data effectively highlights the areas which learners may be weak in. Taking note of this may perhaps be useful for both the teacher and learners themselves, encouraging revision of specific syllabus topics. Furthermore, when the game is won, Triumphpha involves a penalty system. Any remaining cards in the Training Room each weigh 5points to be added up and deducted from their final point score. This game element rewards correct answers throughout the game while specific game directions encourage players to revisit these cards before being able to resume the game. Upon completing the game, players are given the opportunity to try to answer five (5) of the cards which still remain in the Training Room. Such a game mechanic strengthens the learning and revision concept, once again identifying any weaker topics and subject knowledge. Such data may be exploited by the teacher.

iv. *The Triumpha Dash*

A 'Triumpha Fast Track' feature was introduced to prioritize educational content without compromising the pace of the game. This style of play allows players to enjoy a faster paced game, answering questions and carrying out the given physical activities. The spinner wheel is only spun after incorrect questions and the bolt icon is invalid during this version of the game, hence no powerups, hurdles or challenges will be used. This fast track rewards knowledge and skill while keeping the gameplay dynamic and time-effective — a crucial consideration for structured lesson plans and the reality of a 40-minute lesson. The option to choose between a fast track and the normal game route once again embraces the differentiation component, appealing to the diverse player characteristics (refer to page 13 on The Triumpha Booklet for a more detailed explanation on this chosen route).

4.5 The Playtesting Stages

I initially thought of involving the piloting and playtesting processes in my dissertation however this was dismissed by the Research Ethics Committee. Despite not having to record this for dissertation purposes, I acknowledged its importance in the game outcomes and decided to carry these out informally – playing with my family and my supervisor - for my and the game's own benefit, taking notes and listing any potential game amendments and tweaks to consider (refer to Appendix A). I intend to play with social groups such as experienced PE SEC teachers and secondary students, allowing me to observe Triumpha being played and tested within its intended target populations.

It is by seeing the game through the eyes of the society you design for that your games will have an impact (Kalmpouritzis, 2019, p. 52)

Zagal et al. (2006) discusses the effectiveness of a co-design approach involving both the learners and educators. Such playtesting opportunities would ultimately provide me with raw data and feedback to then be exploited, further improving this educational game.

It was a great feeling to see my first printed, physical prototype off the digital screen made tangible and interactive. After having a good look at the product I began listing down small yet important tweaks and design arrangements which were more pronounced when seeing the board game in front of me. Such fine tuning impacted the aesthetic element and hence the overall Triumpha experience. The commitment to continuous improvement through playtesting ensured that the final game was both user-friendly and effective in achieving its educational goals. Despite being 'finalized' and presented, Triumpha has yet to be piloted and play tested, even further tailored to the educators, learners and players to ensure an ideal educational game experience is created.



Figure 20: The first printed prototype – Triumph!

4.6 Clearing the Hurdles

The informality of the playtesting allowed me to hone into the players' feelings and iterative processes, observing and playing Triumph from this perspective. Asking questions such as - What would intrigue the player more? What game concept can I tweak to add to the element of risk and chance? What element would heighten the players' need for collaboration? – all fuelled the game design decisions and elements within Triumph. During the playtesting stages various elements were still big question marks in my mind - shall I go for this or that, and why? Keeping the ultimate educational and classroom-based target in mind helped pave the Triumph pathway, however, this was definitely not a straightforward one – taking one decision means leaving another three behind. This is something I struggle with daily and am trying to work on, especially as it influences my future career as an educator.

The playtesting stages exposed game weaknesses and elements worth reconsidering for various reasons. Discussing these openly with the players allowed me to acknowledge the rationale behind their suggestions, various game elements appealing to differing players. A visual of the list of points taken down throughout the playtesting stages can be found in the appendices (refer to Appendix A). This helped me jot my thoughts down to then be further discussed and decided upon.

One of the main points definitely involved increasing the physical movement concept, and as previously mentioned earlier on in this chapter this element was later developed into a new set of Movement cards – Let’s Get Physical. Another significant element involved the physical cards themselves. Various question formats were difficult to be carried out, for example including too much information for the player to answer without having to look at the card itself. For ease of play, the questions were reviewed once again and any amendments deemed necessary were made to ensure as straightforward and easy to understand game experience as possible. Another smaller yet significant element relates to the number of correctly answered cards in the Sport Field. One of the suggestions given was a counter or game piece to physically show how many cards players are currently at and how many are left to go, since placing them down on the physical board naturally covers the number. I ordered a visual counter to be used specifically for this game mechanic however I didn’t see this fitting into the board game, seeming impractical and bulky, adding yet another game piece to the game I wanted to keep as simple and effective as possible. Perhaps future designs of Triumpha may develop this concept further.

Apart from the above physical game element examples, other elements relate more to the abstract gameplay, beyond the board. What could I do to make Triumpha remain appealing enough to be played over and over again? When creating the game I tried to prioritize this element, playing around with various ideas to enhance the game replayability concept. Apart from the obvious sets of cards involving large numbers, I decided to exploit the Spinner Wheel element, developing it even further by adding variables. An example of this would be the bolt icon, rewarding or punishing the player when landing upon it for a positive/negative reason, respectively. Within the whole Spinner Card pack I also included three challenge cards – a surprise element which could be drawn by chance at any time within the game. I feel such elements add to the unpredictability of Triumpha, keeping engagement levels high and hopefully increase the thrill, ultimately making them look forward to playing again.

Despite tackling this concept, as a game designer I still feel that this is one of the challenges Triumpha will have to face, as cards will have to be recycled and syllabi may also be changed in the near future. Triumpha however remains flexible, with extension packs particularly focusing on specific syllabus topics being able to be introduced at any stage. Educators may also adapt the game to the needs of their learners, using the blank cards explored earlier on in this chapter or perhaps even creating DIY cards themselves if deemed better. The three levels of difficulty – easy/medium/difficult – also tackle this differentiation obstacle and may be explored even further.

As an educator I find myself seeking to raise the challenge for my learners, aiming to keep a high time on task and engagement level. I feel that this is yet another challenge which comes into play with Triumpha, being a board game to be played by a whole class. Discussing options with my supervisor, we discussed the possibility of the game being played by a maximum number of players, such as six (6) to keep active participation levels high. The class may be split into groups each having a Triumpha board set, working collaboratively to refurbish the sport fields and competing against one another. Hence at a later stage targeting school outreach as a game to be sold in the market, such realities may be taken into consideration

and thought upon accordingly. In the Triumpha Booklet however, only the minimum number of players (2) is indicated. The maximum number of players is purposely omitted and only presented as a suggestion, allowing teachers and players to exploit Triumpha as they deem best, leaving game possibilities flexible.

4.7 Visuals and Designs

A significant element of games lies in their aesthetic – the eye-catching components which create the immersive game experience. As previously mentioned, Triumpha originally targeted to be Olympics themed, however this was later on developed into a similar yet different concept. The whole of Triumpha is a visual in itself, with the physical board, cards, title and logos needing to be designed and produced from scratch, not mentioning the catchy names and accompanying visuals working hand in hand with the game mechanics. Beginning to draft these on a journal sketchbook during initial project stages, these were gradually brought to life visually and later on printed professionally. This sketchbook shows a visual journey, putting my thoughts into paper to then be adjusted and perfected with the use of technology. The figures below present excerpts from my sketchbook pages paralleled to digitalized visuals developed at a later stage in the game design process.

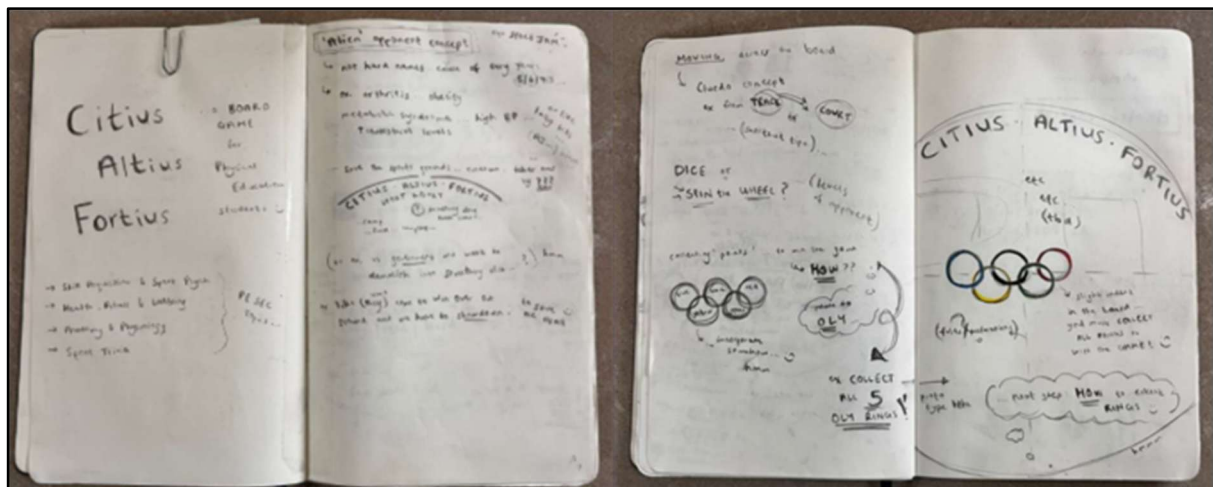


Figure 21: Early journal sketches – previously named 'Citius Altius Fortius'

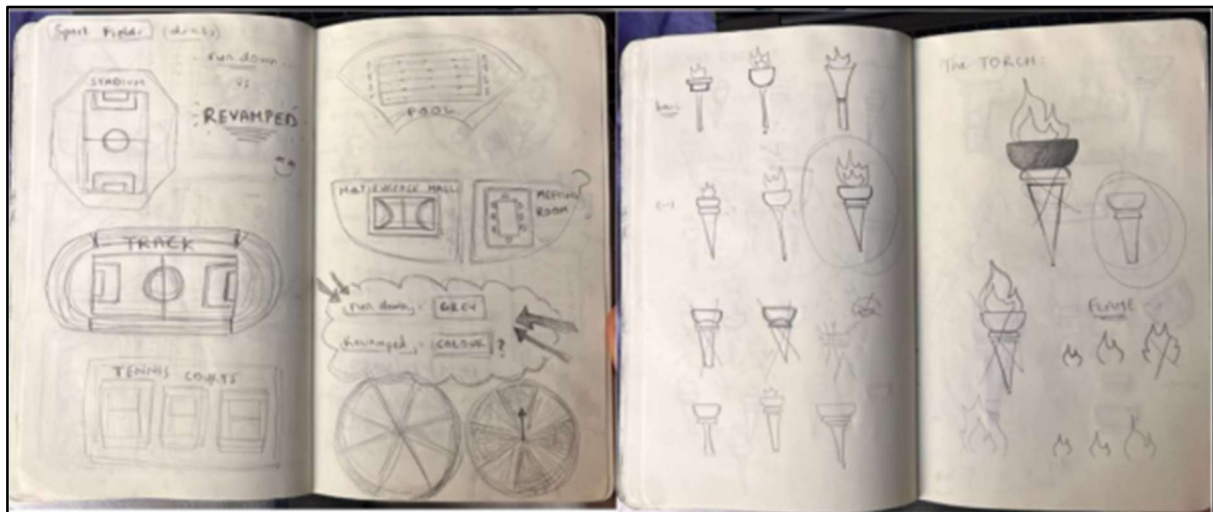


Figure 22: Journal extracts showing other different icons & designs

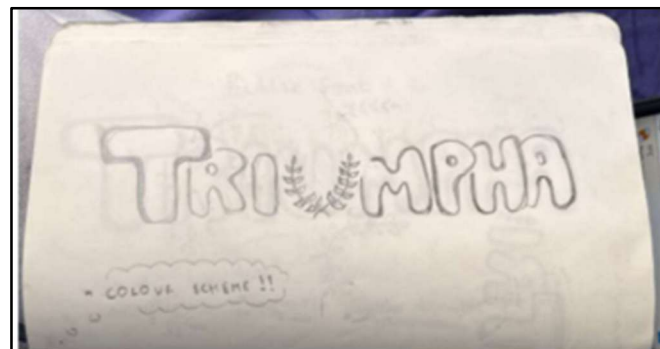


Figure 23: From the sketchbook to the digital screen

4.7.1 The Printing Stages

When my Triumphpha designs were finalized, the final process involved the printing stages – bringing Triumphpha to life. I chose to work with Polidano Press Ltd and following several email communications involving details such as components and amounts to be printed, we set up a face-to-face meeting to further discuss and finalize printing decisions (refer to Appendix E). Although having already decided upon certain elements before the meeting, these had to be tweaked due to material availability and other reasons (refer to Appendix B). An example of this are the card borders. Previously designing borders around all question cards and booklet for aesthetic purposes, the printer advised me otherwise due to potential printing inequalities. Hence following the meeting, I had to revisit all designs once again, amending and tweaking the visuals accordingly.

I designed all the game components on Canva Pro, being familiar with this design platform and finding it comfortable to use. Thankfully, this corresponded and was of a good enough quality to be used in the professional printing stages, since they use a different platform. After discussing various possibilities, I decided to print Triumphpha on a physical board, similar to common board game material. Being circular in shape, this created a few issues and concerns such as the folding and packaging of the board were discussed during the meeting. It was eventually decided for Triumphpha to be printed on a mat material. This would allow for no folding to be needed and would be rolled up for packaging purposes. I saw and felt the mat material to be used and after exhausting all possibilities, decided to go ahead with this decision. The packaging seemed to be the issue with this decision, having the separate add-on board game pieces and card sets which were now bulkier than the main board itself. Discussing custom fit packaging options for the whole Triumphpha package, I finally decided to package the board game myself, rolling and fitting the Triumphpha playing mat into a storage tube while fitting all game components in a box in a presentable manner (refer to Appendix F). Although this seemed to get the job done for dissertation purposes, this would definitely need to be thought through and redesigned if Triumphpha was to be sold and distributed to potential customers and investors. The original square, compact packaging would be ideal to produce, store and sell, however this obviously depends on many variables and would need to be decided at a much later stage.

4.8 Conclusion

The above chapter discusses the project from a creation and design perspective, each component deliberately planned, thought out and inserted into Triumphpha for specific reasons. Being able to read through these processes allows one to appreciate and understand the work behind the final presented project of Triumphpha, more specifically relating to its educational and learning component to ultimately be a resource which can be used by educators within their lessons.

Chapter 5: Conclusions and Recommendations

5.1 Introduction

This chapter concludes the dissertation by summarizing the key insights gained through the design, development, and evaluation of the educational board game Triumph. It reflects on the project's purpose, assesses its strengths and limitations, evaluates its overall effectiveness and outlines directions for future development and research.

5.2 Purpose of the Study

The study set out to enhance the PE SEC learning experience by creating Triumph, an innovative, project-based board game grounded in the local Learning Objective Framework (LOF) and National Curriculum Framework (NCF). At its core, the project aims to deliver PE SEC subject knowledge in an engaging, dynamic, and socially interactive manner.

More specifically, Triumph seeks to:

- Provide a holistic learning experience embracing diverse learner personalities and social interaction.
- Serve as both a teacher and learner resource, with components designed to support individualism and differentiated instruction.
- Empower educators to identify students' areas of weakness via a unique coding feature, facilitating targeted revision and support.
- Extend beyond PE SEC by integrating general sports trivia and history, broadening the game's appeal.

5.3 Project Strengths and Limitations

As the project progressed, it became clear that Triumph embodies distinctive qualities contributing to its effectiveness as an educational tool. However, like any innovation, this also presents challenges that must be acknowledged. Reflecting critically on these strengths and limitations offers valuable insights into the project's overall impact and provides a foundation for informed future development.

One of the key strengths of Triumph lies in its practical, innovative, and engaging design. The game successfully fosters active student participation by creating an immersive learning environment that motivates learners to engage both with the content and with one another. Additionally, Triumph is highly flexible, respecting individual differences by allowing for varied approaches and accommodating different learner personalities. This adaptability makes it a resource that is easily understood and used by both educators and students alike.

The game's strong alignment with the local curriculum frameworks ensures its relevance within the PE SEC subject area. At the same time, the inclusion of general sports trivia and historical questions broadens its appeal beyond the classroom, attracting a wider audience in social contexts. Furthermore, Triumpha promotes life skill transferability and multidomain learning, supporting a holistic educational approach that encourages students to develop not only subject knowledge but also social and cognitive skills.

Despite its many strengths, the project also faced limitations, one of these being the question cards not covering the PE SEC syllabus exhaustively. While many topics and subtopics are addressed, some components are less represented, some being difficult to involve within a question-and-answer format. Moreover, linking to the concept of replayability, question cards relating to a specific syllabus topic will always remain the same, hence this perhaps presents another challenge. Potential solutions to these challenges, such as adding various extension packs will be discussed later on in this chapter, specifically in section 5.5 - A Way Forward. Additionally, although revised lately (2025), the PE SEC syllabus is bound to change, hence game elements would need to be tweaked and adapted accordingly for Triumpha to keep up to date with the current syllabus.

Branching into the social game realm, while aiming to create an engaging and motivating environment, its competitive and interactive nature may seem intimidating or even threatening to some learners, potentially affecting their participation and enjoyment. This must be addressed and tackled by the respective educator, finding a harmony between learners' preferences to be able to exploit Triumpha effectively and to its highest potential. With its objective being used within a school context, noise levels during gameplay could also pose classroom management challenges for educators while seeming a hindrance to other lessons happening in the vicinity. These factors highlight important considerations for Triumpha especially relating to its implementation within diverse educational settings.

Lastly, one of Triumpha's main limitations would involve its cost efficiency, its professional printing and final product amounting to a hefty total cost. This involves the custom picked materials of the Triumpha mat as well as various game components presented within the board game package, each specifically selected to ultimately bring the Triumpha game experience to life. With its main target being a teacher and learner resource to be introduced within the PE SEC classroom and educational environment, the cost of such a resource would ideally be reasonable for schools to invest in. In the near future, being able to collaborate and look into sponsorship opportunities from various local or international organizations would allow Triumpha to broaden its horizons – its educational game potential is endless. Amending game concept and printing logistics as deemed necessary, being able to produce this in larger quantities to potentially be sold within the market is a milestone in the Triumpha journey I aspire to work towards, following its appropriate playtesting and fine tuning.

5.4 Evaluating the Project

Literature proves playtesting to be a critical phase in game development during which the game designer refines game mechanics, balancing engagement and ensuring educational effectiveness. Described as an “indispensable navigation tool” (Kalmpouritzis, 2019, p. 319), despite potentially having to revise various game ideas and mechanics, an adequate evaluation will eventually steer the game toward greater and more effective learning experiences.

I originally intended to carry out a *Triumph* playtesting phase however this was not feasible within the project’s timeframe while also not being approved by the Research Ethics committee. Despite this, I acknowledged the importance of small-scale testing, allowing me to gain valuable insights related to the project, such as game visuals and mechanics. This came to life across the table with my family members, whose feedback and suggestions helped shape the game across the design and tweaking stages.

Future iterations of *Triumph* should definitely incorporate extensive, iterative playtesting across diverse classroom settings before its final production, allowing the game to be tested by its target population, obtaining valuable data and feedback. Apart from the playtesting experiences themselves, research proposes various examples of evaluations which may be effectively carried out, such as focus groups, questionnaires and usability tests. Reflecting on how these can be exploited within *Triumph* testing, all may be incorporated within the testing stages, adapted according to the specific target population. The player populations are significantly chosen, able to evaluate the different game aspects relating to the elemental pentad, these namely being education, aesthetics, story, mechanics and technology. Such evaluation modes would allow me, the researcher and game designer, to compile different sources of data which I may then analyse to ultimately enhance the game experience.

Kalmpouritzis (2019) describes an “improperly designed evaluation [as being] worse than no evaluation at all” (p. 316). Hence this stage requires appropriate planning, execution and reflection. An effective evaluation aims to gain the answers sought to pre-thought questions relating to the overall gameplay concepts and learning experience. Furthermore, literature reveals this as an ongoing process which starts as from day one of one’s game design. A brief representation of this persistent evaluation process is depicted in the figure below.

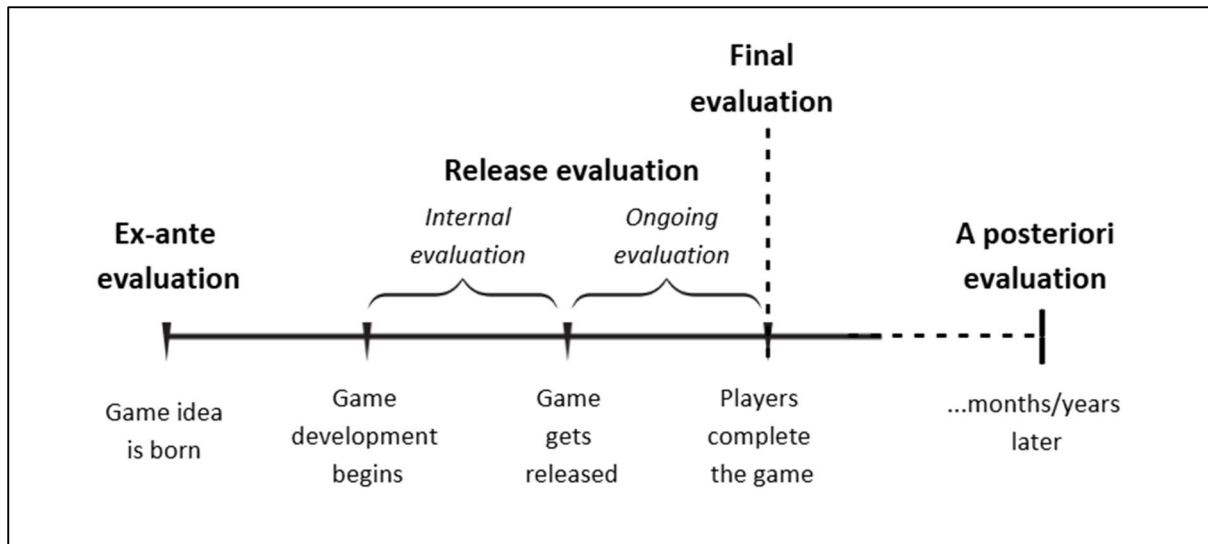


Figure 24: The different phases of the evaluation process

(Adapted from Kalmpouritzis, 2019, p. 314)

Giving a voice to the players, such a game evaluation allows for different perspectives throughout the evaluation process, to then be taken on and potentially adopted into the revised version of game.

5.5 The Project Experience

Engaging in this project has offered a profound and multifaceted learning experience, extending well beyond academic research and theoretical application. The development of *Triumph* has not only deepened my pedagogical understanding but has also equipped me with a diverse range of practical and transferable skills. Throughout this journey, I have gained a richer appreciation of the PE SEC curriculum, a deeper insight into student engagement, and a renewed awareness of the educator's evolving role in contemporary learning environments.

This project dissertation introduced me to the world of game design, exposing me to the foundations of game creation, design and mechanics, player interaction, replayability, and feedback loops. Understanding how these elements can be intentionally aligned with educational objectives allowed me to design *Triumph* not simply as a game, but as a pedagogical tool that supports meaningful learning. Throughout this journey, I gained knowledge in the areas of graphic design, printing processes, and prototyping, working on the visual layout and formatting of cards and boards, navigating print requirements and material considerations. Such hands-on exposure helped me appreciate the logistical realities of turning an educational concept into a tangible product. The design process itself became a reflection of learning-by-doing, mirroring the experiential model I sought to promote through the game.

The integration of game mechanics within an educational framework also helped me explore new dimensions of curriculum delivery. I learned how content could be ‘gamified’—not simply made fun—but restructured in ways that encourage student-led learning, critical thinking, and collaborative problem-solving. This process deepened my understanding of learner motivation, autonomy, and differentiation, reinforcing my belief in holistic, multidomain learning approaches.

Finally, this project has enhanced my reflective thinking and creative confidence. It challenged me to bridge theory and practice, to think beyond the constraints of traditional classroom teaching, and to envision alternative, more inclusive forms of engagement. As a future educator, I now feel better equipped to design learning experiences that are not only curriculum-aligned, but also meaningful, inclusive, and inspiring.

5.6 A Way Forward

Building on the project developed so far, future development should seek to broaden the game experience and introduce more engaging concepts. Brainstorming examples of this, Triumphpha could definitely aim to rope in the virtual element, allowing learners to see their progress visually as well as watch as the Triumphpha Sport Village is refurbished and comes to life. Linking into the technological world, an online interactive element of Triumphpha may be added to intertwine with the board game, keeping the experience as engaging as possible while attracting the diverse learning styles. Despite this, Triumphpha targets to be a simple yet intriguing game to set up and enjoy within the 40-minute lesson time frame. Hence such technological elements would ensure to be an addition to the game experience in such a way that they would not hinder its logistics and overall ease of play.

When creating the board game, I intended to keep this as inclusive as possible, aiming to be accessible to all irrespective of individual needs throughout the game experience. One of the challenging elements involve the Movement Cards, which although designed to cater for learner differentiation, are far too small to include all potential variations and learner needs. I initially thought of designing a variation booklet, however, being finite, this once again restricts possibilities. This gave rise to the idea of the creation of a Triumphpha online platform. Such an element creates a Triumphpha community in which educators and members may communicate with one another, share ideas, adaptations and experiences allowing the game to evolve. Such a technological element broadens the horizon, allowing Triumphpha to reach beyond the social real-time experience. This may be an interesting idea to kickstart a community of practice, encouraging communication between educators and sharing of knowledge and resources, ultimately benefitting the learners.

Homing in on the Triumphpha experience, educators may exploit the game as an efficient resource to determine which specific topics need revision, then adapting their lessons and work accordingly. Similar to other available games on the market, Triumphpha is open to explore the possibility of adding extension packs in the future, which may perhaps involve questions on each specific topic in more detail. In this way, educators may choose to ask their learners to play Triumphpha however using the extension pack selected, targeting to focus on their

intended PE SEC topic. Such extension packs may also be developed to involve innovative topics such as The Local Scene – involving Maltese sport trivia questions - as well as other engaging topics all over the globe. Such possibilities keep Triumpha flexible and able to adapt itself to more current sport affairs in our everchanging society.

Although including the Triumpha booklet and exhaustive rules on paper, when introducing Triumpha into the classroom this can easily be explained and visually demonstrated in a short video. Such a resource eases the learning process, allowing learners to clearly understand the game concepts, seeing Triumpha being played in front of their eyes. Within the educational reality, such a video keeps this as efficient as possible, allowing the teacher to not have to repeat and explain the rules over and over again, simply projecting the video for the whole class to watch. This video will be added to the Triumpha pack once the game has been playtested and finalized.

5.7 Concluding thoughts

Triumpha offers a promising approach to deepening understanding of PE SEC content through an active, social learning experience. With continued refinement and research, Triumpha can become a valuable asset in transforming physical education into a more engaging and inclusive experience for all learners. Ultimately, its impact depends on its adoption and effective use within the educational environment. The Triumpha experience is ultimately within the educators' hands and I hope that this project will help ignite a lifelong spark toward sport and physical activity as well as what Dewey (2019) described to be the “most important attitude that can be formed” (p. 48) – the desire to go on learning.

References

- Attia, P. (2016) The Full History of Board Games, *Medium*.
<https://medium.com/@peterattia/the-full-history-of-board-games-5e622811ce89>
- BBC News. (2019) Board games: Why are they becoming so popular?
<https://www.bbc.com/news/av/uk-wales-49859688/board-games-why-are-they-becoming-sopopular>
- Calleja, G. (2022) *Unboxed: Board Game Experience and Design*, The MIT Press.
doi: 10.7551/mitpress/10863.001.0001.
- Charlier, N., De Fraine, B. (2013) Game-based learning as a vehicle to teach first aid content: a randomized experiment, *Journal of School Health*, 83(7), 493–9. doi: 10.1111/josh.12057
- Christopoulos, A. & Mystakidis, S. (2023). Gamification in Education. *Encyclopedia*, 3(4), 1223-1243.
doi: 10.3390/encyclopedia3040089
- Czikszentmihalyi, M., Abuhamdeh, S., & Nakamura, J. (2014) Flow and the foundations of positive psychology, 227-238. doi: 10.1007/978-94-017-9088-8
- Daniels, J. T. (2022) *Make Your Own Board Game: Designing, Building, Playing an Original Tabletop Board Game*, 1-144. Storey Publishing LLC.
- de Voogt, A. (2017) Strategic Interactions: Games of the Ju'hoan, *Learning & Behaviour*, 45(4), 406–413. doi: 10.3758/s13420-017-0281-2. PMID: 28656521
- Fornari, A. (2007) Teaching Teachers to Train (T3), 'Is Learning a Noun or Verb?', *Department of Family & Social Medicine*, 1-53.
- Henderson, D. (2005). Games: Making learning fun, *Annual Review of Nursing Education*, 3, 165-183.
- Hromek, Robyn, and Sue Roffey (2009) Promoting Social and Emotional Learning with Games: 'It's Fun and We Learn Things', *Simulation & Gaming*, 40(1), 626–644. doi: 10.1177/1046878109333793.
- Kalmpouritzis, G. (2019) Educational Game Design Fundamentals: A journey to creating intrinsically motivating learning experiences, CRC Press. doi: 10.1201/9781315208794.
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard University Press.
- Kolb, A., Y., & Kolb, D., A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193-212. doi: 10.5465/AMLE.2005.17268566.
- Kumar, R. & Lightner, R. (2007). Games as an Interactive Classroom Technique: Perceptions of Corporate Trainers, College Instructors and Students. *International Journal of Teaching and Learning in Higher Education*, 19(1) 53-63.
- Lehrer, J., S. & Hariclia H., P. (2011). Parent and Child Perceptions of Grade One Children's Out of School Play", *Exceptionality Education International*, 21, 74–92. doi: 10.5206/eei.v21i2.7677.

- Massari G., Miron F., Kamantauskiene V., Alat Z., Mesquita C., Tzakosta M., Verheij J. K., Zirina T. (2016) Experiential Education Competence: A Handbook on Experiential Education, *Expeducom*, 1-16.
- Maslow, A., H. (1943) A Theory of Human Motivation, *Psychological Review*, 50(1), 370-396. doi: 10.2139/ssrn.4968309.
- Noda, S., Shiotsuki, K., Nakao, M. (2019) The effectiveness of intervention with board games: a systematic review, *BioPsychosocial Medicine*, 13(22). <https://doi.org/10.1186/s13030-019-0164-1>.
- Oberle, E., Domitrovich, C., Meyers, D., Weissberg, R. (2016) Establishing systemic social and emotional learning approaches in schools: a framework for schoolwide implementation, *Cambridge Journal of Education*, 46(3), 1-21. doi: 10.1080/0305764X.2015.1125450.
- O'Neill, D., K., & Holmes, P., E. (2022) The Power of Board Games for Multidomain Learning, *American Journal of Play*, 14(1), 58-98.
- Pierce, J. B. (2016). The Reign of Children: The Role of Games and Toys in American Public Libraries, 1876–1925.
- Raposo, L., Guerra, H., Morais, C. & Coelho, A. (2022). The Game Pentad: A Design Model Proposal for Games for Education, 130-142. doi: 10.4018/978-1-6684-4287-6.ch007.
- Rojas, M., Mendez, A., Watkins-Fassler, K. (2023) The hierarchy of needs empirical examination of Maslow's theory and lessons for development, *World Development*, 165(2). doi: 10.1016/j.worlddev.2023.106185.
- Schell, J. (2020). *The Art of Game Design: A Book of Lenses* (3rd Ed.), 1-652.
- Selinker, M. (2011) *The Kobold Guide to Board Game Design*, Open Design LLC, Wolfgang Baur.
- Shipp, S. (2024) *Thematic Integration in Board Game Design*, CRC Press.
- Sousa, M., & Rocha, Á. (2019). Leadership styles and skills developed through game-based learning. *Journal of Business Research*, 94(1), 360-366. doi: 10.1016/j.jbusres.2018.01.057.
- Tirri, K., & Toom, A. (2019). *The Moral Role of Pedagogy as the Science and Art of Teaching*, InTechOpen. doi: 10.5772/intechopen.90502.
- Yu, Z., Gao, M., & Wang, L. (2020). The Effect of Educational Games on Learning Outcomes, Student Motivation, Engagement and Satisfaction. *Journal of Educational Computing Research*, 59(2). doi: 10.1177/0735633120969214.
- Zagal, J. & Rick, J. (2006) Collaborative games: Lessons learned from board games. *Simulation & Gaming*, 37(1), 24-40. doi: 10.1177/1046878105282279.

Appendices

Appendix A

Triumpha Playtesting Documents & Notes

Amendments and the way forward... (as of 16/12/24)

...update post TP...13/05/25

- ~~Training room — shall I name this something catchier?~~
- ~~Amend rundown village card slots (no colour predecided)~~
- Revise colour schemes...check re dyslexia etc + *ADD TO WRITE UP!!*
- ~~How many of each card? (+ include this in rule book)~~
- ~~Finalize & Design RULE BOOKLET~~
- ~~ADD more PHYSICAL component (card pack!)~~
- Revise Key & Spinner Cards

(not priority)

- VIDEO before playing game
- Amount to print & present? Examiners?
- Add extension packs?

Update: printed first prototype (8/01/25)

- ~~= Multipurpose has to be forward~~
- Key cards diff colour (not blue on blue)
- ~~= Edges pointy/rounded?~~
- ~~= Amend Q card borders to be much neater!~~
- ~~= BORDERS on sport fields~~
- ~~= Arrange track a bit neater...~~
- ~~= Q card big numbers to make visible/tangible somehow...~~
- Need bingo markers for the X's? Temu jew??
- And flip circles to know how many cards are under...x'tahseb
- Spinner – need to keep stable somehow?

PRINTING & See options...communicate and look for printers!!

- ~~= See how to get *NUMBER* showing...extra ones for teacher to change at will?~~
- Teacher notepad??? For revision purposes ex A1, B12...
- Add more spinner cards!!! More physical demanding cards!!!
- Amend multipurpose courts (better visual)
- **Token system** (green/orange/red counters to count points at end of game!)
- ~~= Hint?~~

Rule changes

- WHEN to use SPINNER!

Rather than every 3 consecutive, every card you get wrong:

- Incorrectly answered card goes into training room
 - Marker on X spot
 - Spin at the wheel
- They can unlock another when 3 in a row correct
 - Bonus of not having cards in training room?

Card changes

- Remove 2 not 3 (spinner card)
- Synovial = green?
- Muscle system typo
- BALL SIZE TYPO
- Interactive question cards a bit difficult to manage...how can we do this
- One throwing one jumping GREEN not red
- 5 in a row green - Not unlock – COMPLETE!!!
- Make spinner cards less specific and more general

15/01/25

Wanted to add more physical activity...through **SPINNER CARDS**

Some ideas...add visuals/pics/graphics to help

Upper Body – Lower Body – Core

Individually + pairs/groups

Wall sit - Jumping jacks - High knees/back kicks - Criss crosses - Floor can-can – Superman - Straight jumps - Push ups - Mountain climbers - Butterfly – left hand right toes vice versa - Bridges – hip lift - Side leg lifts - Punches? - Sit ups - Frog – burpees – Planks- Inchworm - **Core!!!**

VARIATIONS!!

Appendix B

Meeting Notes – Polidano Press Ltd

- REMOVE BORDERS from all cards!!
- Save in CMYK and show Bleed + Printing margins
- Send card packs separately and label accordingly

The Triumph Board

- Normal board material??
- Mat material – rollable and better for no double fold...
- CHECK DETAILS before printing
- Can he add on the little Track piece (cannot do this myself)

ASK TO AMEND:

- Shadows on piece titles
- Tennis court crop white part
- Spinner dot to make smaller if possible

Packaging

- Polidano custom packaging
- Search for my own packaging!! If not, we go for the custom one

Ask for quote re Mat material + new amount of cards

Appendix C

Question Breakdown – A Teacher Resource

Syllabus Topics + Board Game Themes

Skill Acquisition & Sport Psychology

Anatomy & Physiology

Health, Fitness & Wellbeing

Sport in Society

Sport Trivia & Event History

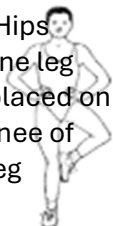
Team & Individual Sport Rules & Violations

This presents a breakdown of all card questions present in Triumph, clearly showing which difficulty level (rookie – green, amateur – orange, pro – red) they have been placed under, for ease of use. Teachers are encouraged to personalize and tailor this accordingly when creating their own Triumph resources

Skill Acquisition & Sport Psychology		
Difficulty	Question	Answer
Key Card	What is the opposite of a Gross Motor Skill?	A Fine Motor Skill
	Which of these is considered to be a closed skill during a game situation? A) Free Throw B) Layup C) Crossover	A Free Throw
	True or False? A snooker shot is considered a gross motor skill <i>BONUS: Explain why</i>	False Precise movement involves small muscle groups – it is a fine motor skill
	Name TWO guidance methods	(Choose 2) Visual, Verbal, Manual/Mechanical
	SMART is an acronym used to describe a goal-setting framework. Name what each component in the acronym refers to: S – M – A – R – T	Specific Measurable Achievable Relevant Time-Bound
	This theory, also known as the Yerkes-Dodson Law, describes the relationship between arousal/stress and performance	The Inverted U Theory

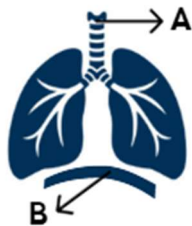
Health, Fitness & Wellbeing		
Key Card	Mention 3 of the food nutrient groups present in the Eatwell Plate	Choose any three) Carbohydrates, Proteins, Fruits & Vegetables, Dairy, Fats & Oils
Key Card	Skinfold measurements, and bioelectrical impedance measuring are two tests commonly used to measure which fitness component?	Body Composition
Key Card	State the unit of measurement for energy	Calories (C) OR Kilocalories (kcal)
Key Card	The term Lipids refers to this food group and nutrient	Fats
	The Illinois Test is a fitness test used to test the agility component	True
	Which specific type of training helps you jump higher? A) Aerobic B) Plyometrics C) Weight Training	B) Plyometrics
	Suppleness and mobility best describe which health-related fitness component?	Flexibility
	Potatoes, Bread and Pasta are all example of which food group? <i>BONUS: Mention any other 2 of the main nutrient groups</i>	Carbohydrates Proteins, Fats, Fibre, Vitamins, Minerals
	This type of lifestyle refers to one with minimal physical activity & movement S _ _ _ _ _	Sedentary
	Identify the 3 somatotypes below:  A B C	A) Ectomorph B) Mesomorph C) Endomorph

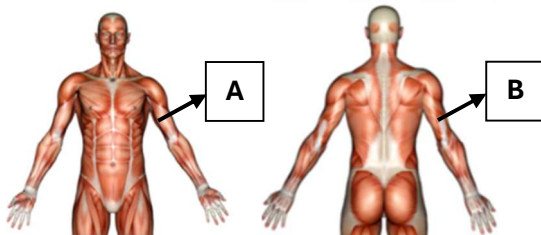
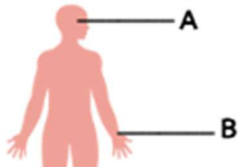
	What does the term BMI stand for? <i>BONUS: What is the formula used to calculate this?</i>	Basal Metabolic Rate Weight(kg) divided by height(m) ²
	Without consistent practice, any progress and adaptations gained through training will be lost over time. What is this principle termed?	The reversibility principle
	True or False: In a concentric muscle contraction, the muscle shortens while contracting <i>BONUS: During this muscular contraction, the muscle length remains the same</i>	True Isometric contraction
	What is the term describing the contraction involving a lengthening of the muscle	Eccentric contraction
	Which Vitamin is our body able to produce naturally? <i>BONUS: This is a disease caused by a severe Vitamin C deficiency</i>	Vitamin D Scurvy
	True or False: Iron and Calcium are two examples of essential Vitamins	False – they are essential minerals
	These are defined as the building blocks of proteins ...a protein molecule is made up of a long chain of these...	Amino Acids
	An athlete sprains his ankle and is told to put a heat pack to reduce swelling. Why is this wrong?	The athlete must apply ice/cold to the affected area
	What does the RICE recovery method stand for?	Rest – Ice – Compression - Elevation
	The T-Test is used to measure which fitness component?	Agility
	What is the difference between the Sargent Jump and Standing Broad Jump Tests <i>BONUS: What fitness component do these tests target?</i>	(Choose one) Sargent Jump Test Standing Broad Jump Power (Lower Body)
	The Cooper Test is commonly used to measure endurance capacity. In this test the athlete is required to run as far as possible for how many minutes?	12 minutes
	Speed and Power are examples of Skill related fitness components. Mention another component forming part of this category	(Choose 1) Agility – Balance – Coordination – Reaction Time

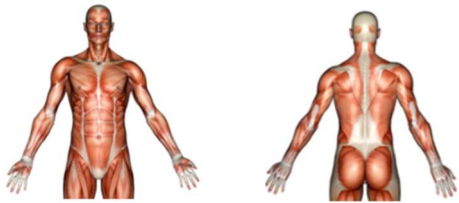
	What does the abbreviation DOMS stand for?	Delayed Onset of Muscle Soreness
	The Standing Stork Test is commonly used to test for balance. Stand up and demonstrate the position which should be held during this test	- Hands on Hips - Stand on one leg - Other leg placed on the inner knee of the other leg 
	Briefly describe the relationship between calorie intake vs energy expenditure <i>specifically relate this to one's body weight</i>	Consuming more calories than you expend leads to weight gain Consuming fewer calories than you expend leads to weight loss. To maintain weight, calorie intake should roughly match calorie expenditure
	Name ONE type of eating disorder	Anorexia nervosa Bulimia nervosa Binge-eating disorder Avoidant or Restrictive Food Intake Disorder (ARFID)

Anatomy & Physiology		
Key Card	This is the scientific term for what is commonly referred to as 'Kneecap'	Patella
Key Card	Give a synonym of the term 'Prime Mover'	Agonist
Key Card	Name the movement pattern opposing 'Flexion'	Extension
Key Card	This body system consists of the heart, lungs & blood vessels	The Cardiorespiratory System
Key Card	True or False: Capillaries are thick vessels which withstand blood pressure	False capillaries are thin & delicate blood vessels, approximately 1 cell thick!
Key Card	What does the below reading refer to? $\frac{120}{80} \text{ mmHg}$	Blood Pressure
	What is the unit of measurement used when referring to Heart Rate?	Bpm – beats per minute
	True or False: The Heart is considered a muscle	True It is considered a muscular organ – considered both a muscle and an organ
	Mention TWO components found in the circulatory system	Choose 2: The heart, arteries, veins, capillaries and blood
	Name one of the organs involved in the mechanical digestion of food	The Mouth OR The Stomach
	The Human Body is made up of approximately _____% water. BONUS: What term describes the outcome of the body losing more fluids than taken in to carry out its normal functions?	60% Dehydration

	The Heart is made up of how many chambers? BONUS: Can you name all of these?	Four Right Atrium, Right Ventricle, Left Atrium, Left Ventricle
	True or False: Synovial Joints refer to the slightly moveable joints in the body	False – they refer to the freely moveable joints
	Give the scientific name of the labelled bone in the below diagram	Pelvis
	How many bones are found in the adult human body? A) 207 B) 203 C) 206	206
	The vertebrae are classified as which type of bone? A) Flat B) Short C) Irregular	Irregular
	What is the term opposing the term inspiration/inhalation?	Expiration/Exhalation
	True or False: Arteries transport blood away from the heart?	True
	True or False: Tendons connect muscles to bones BONUS: which connective tissue connect bone to bone?	True Ligaments
	Which system includes the brain, spinal cord and nerves?	The Nervous System
	The Frontal Lobe and Cerebellum are two components found in which organ in the body?	The Brain
	Where is your Achilles Tendon located?	At the back of your ankle 
	What happens to your breathing rate during exercise?	It increases
	True or False: The diaphragm is considered a muscle BONUS: The diaphragm forms a key part of which body system?	True The respiratory system
	This bone structure protects vital organs such as the heart and lungs. BONUS: What are the muscles in between the above structure termed?	Ribcage Intercostal muscles
	What is the chemical formula for Carbon Dioxide?	CO ₂

	Name any 2 of the main functions of the skeletal system	(Choose 2) Support Protection Movement Shape & Structure, Blood Cell Production Storage of Mineral Salts
	What is the term used to describe the loss of muscle mass due to inactivity and disuse?	Muscle Atrophy
	Fill in the blanks: Our blood is made up of approximately 55% _____ and 45% blood cells. BONUS What are the 3 main blood components?	Blood Plasma Red Blood Cells, White Blood Cells, Platelets
	Fill in the blanks: referring to the blood pathway through blood vessels after being pumped out of the heart Arteries → _____ → _____ → Venules → Veins	Arterioles Capillaries
	What is the cardiac wall separating the right and left sides of the heart termed?	The septum
	Gaseous exchange occurs at which location in the respiratory tract?	In the alveoli
	A fracture refers to an injury relating to the A) Bones B) Skin C) Blood	A) Bones
	True or False: Veins transport blood rich in oxygen back to the heart BONUS: This is the largest main artery found in the body	False Aorta
	Label the following components of the respiratory tract: 	A) Trachea B) Diaphragm
	True or False: A 5k marathon is an example of an anaerobic sporting event	False
	What is the scientific name or what is commonly referred to as the 'collar bone'?	The clavicle
	What is the scientific name or what is commonly referred to as the 'skull'?	The cranium

	True or False: The Radius and Ulna are two bones found in the region of the lower body	False
	Which of the below is an example of a ball and socket joint? A) Shoulder B) Hip C) Both of the above	C) Both of the above
	Name two examples of long bones which can be found in the body	Humerus, Ulna, Radius, Femur, Tibia, Fibula, Metacarpals, Metatarsals, Phalanges
	Name ONE function of irregular bones	Protection Attachment Site Support
	Give the scientific name of the labelled muscle in the below diagram 	A) Biceps Brachii B) Triceps Brachii
	Clearly name and locate these pulse points on the body: A) Temporal Pulse B) Radial Pulse	
	Explain and demonstrate the upper body abduction movement pattern in the butterfly swim stroke technique BONUS: what opposes the abovementioned movement pattern?	Abduction – during the first part of the stroke, the arms open away from each other and away from the midline of the body Adduction
	Name the arm movement pattern in the Baseball pitching motion 	Circumduction
	Label this missing region of the spinal column	Thoracic
	The heart is considered myogenic. What does this mean? BONUS: Specialized cells within the heart generate these electrical impulses, such as the SA node . In which chamber of the heart is this located?	It generates its own impulses Right Atrium

	Complete the fraction: $CO = ?? \times HR$	SV – Stroke Volume
	This term describes the part of the body where two or more bones meet to allow movement ...also known as articulations...	Joints
	The ACL is a ligament found in which part of the body? BONUS: What does ACL stand for?	The knee region Anterior Cruciate Ligament
	These structures prevent the backflow of blood when being transported around the body BONUS: Can you mention any of the abovementioned structures found in the heart?	Valves Mitral, Pulmonary, Aortic, Bicuspid/Tricuspid Valve
	Put these in order – relating to the respiratory tract, starting at the Mouth/nasal cavity: trachea, bronchi, lungs, bronchioles, alveoli capillaries	Trachea Bronchi Bronchioles Lungs Alveoli Capillaries
	True or False: With regular training, one's resting heart rate is proven to decrease. BONUS: What is the term used to describe the above?	True Bradycardia
	Give the scientific name of the labelled bones in the below diagrams: 	Cranium Humerus Clavicle Sternum Ribcage Radius & Ulna Carpals & Metacarpals Femur Tibia & Fibula Pelvis Phalanges
	Give the scientific name of the labelled muscles in the below diagrams: 	Deltoids Biceps Rectus Abdominis External Obliques Quadriceps Triceps Trapezius Latissimus Dorsi Gluteus Maximus Hamstrings

	In which part of the bone are blood cells produced?	In the bone marrow
	Which is the gel-like substance lubricating the joint & helping reduce the friction between joints during movement?	Synovial Fluid
	The term systole refers to the contraction phase of the heart muscle. Which is the opposing term used to describe the relaxing phase in which the heart re-fills with blood once again?	Diastole/Diastolic Phase
	What is the difference between a Sprain and a Strain? Specifically refer to the affected tissues of each injury	Affected tissues: Sprain = Ligaments Strain = Muscles or Tendons
	Describe what is meant by the term 'antagonistic muscle action'	Muscle work in pairs, opposing each other to control movement and maintain stability
	Name the TWO main gases involved within the gaseous exchange process BONUS: Why is this process essential for our body	Oxygen & Carbon Dioxide This process delivers Oxygen to the body's respiring cells while removing Carbon Dioxide as a waste product
	This byproduct is produced by the body following intense physical activity BONUS: What is the specific process with limited O ₂ availability termed?	Lactic Acid Anaerobic Respiration
	Which body part contains the most bones?	The Hands Each has 27 bones

Sport in Society		
Key Card	What does the below abbreviation stand for? MOC	Maltese Olympic Committee
Key Card	What does the below abbreviation stand for? GSSE	Games of the Small States of Europe
Key Card	What is the main sponsor of the local sailing Middle sea race? A) Rolex B) Tissot C) Charles and Ron	A Rolex
Key Card	Falcons, Stompers, Kavallieri and Wolves are four local teams of which sport?	Rugby
Key Card	What does the abbreviation WADA stand for?	World Anti-Doping Agency
	In which city is the Royal Malta Yacht Club located? A) Marsaxlokk B) Sliema C) Ta' Xbiex	A) Ta' Xbiex
	In this competition all teams must compete against each other A) Ladder B) Knockout C) Round Robin	C) Round Robin
	Choose TWO of the below local sport-related abbreviations and name them in full MBA – ASA – MHA – MFA - MAAA	MBA - Malta Basketball Association ASA – Aquatic Sports Association MHA – Malta Handball Association MFA – Malta Football Association MAAA – Malta Amateur Athletics Association
	What is the national governing body responsible for Para sports? ...one of its responsibilities involves implementing the mission statement of the Paralympic Movement	MPC – Malta Paralympic Committee
	Which of the below countries does NOT participate in the GSSE competition? A) Andorra B) Cyprus C) Ireland	Ireland

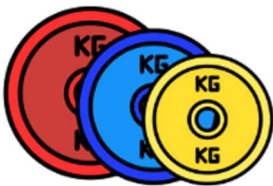
	True or False: One of the advantages of a League competition is that it is quick to organize and doesn't go on for a long period of time	False
	B___ B_____ These substances are banned in sport due to them slowing the heart rate, preventing anxiety and muscle trembling	Beta Blockers
	Mention any ONE performance enhancing drug or steroid prohibited in sport	(Choose one) Beta Blockers, Narcotics, Diuretics, Stimulants, Anabolic Steroids, Blood Doping
	List TWO specific member roles within a Club Sporting Committee	(Choose two) President, Vice-President, Treasurer, Secretary, Marketing Officer, Committee members

Sport Trivia & Event History		
Key Card	What 3 sports are involved in a triathlon event? BONUS: In what specific order?	Swimming, Cycling, Running Cycle, Swim, Run
Key Card	What do the 5 colours found in the Olympic Rings?	Blue – Yellow – Black – Green - Red
Key Card	Act it Out – 5 wrong answer limit – guess two of the below – you are NOT allowed to speak Archery – Fencing – boxing – volleyball – rugby - waterpolo	/
Key Card	Serena Williams is a world-famous athlete representing which sport discipline? BONUS: Serena has an older sister who also plays tennis. What is her name?	Tennis Venus Williams
Key Card	Which is considered to be the most popular sport in the world?	Football/Soccer
Key Card	Who said this famous quote? “Never say never, because limits – like fears – are often just an illusion” A) Tiger Woods B) Michael Jordan C) Coach Carter	B) Michael Jordan
Key Card	What sporting disciplines are these athletes popularly known for? A) Michael Phelps B) Simone Biles C) Usain Bolt	A) Swimming B) Gymnastics C) Athletics
Key Card	In which year were women allowed to compete in the Olympic Games for the first time? A) 1900 B) 2004 C) 1980	A) 1900
Key Card	The Olympics are a global, multi-sport competition. These are held after every how many years?	Four years
Key Card	What nationality was the founder of the Olympic Games, Baron Pierre de Coubertin? A) Italian B) British C) French	C) French
Key Card	What is the length of an Olympic sized swimming pool, in metres? A) 75m B) 50m C) 60m	B) 50m

Key Card	These implements belong to which sport/event? 	A) Bowling B) Rugby C) Tennis D) Hockey
Key Card	Mention any TWO examples of Net Games	(Choose 2) Tennis, Badminton, Table Tennis, Volleyball, Padel, Pickleball
Key Card	How many kilometres long is a full marathon? A)12km B) 35km C)42km	C) 42km
	What is the English translation of the Latin Olympic motto 'Citius, Altius, Fortius'?	Faster, Higher, Stronger
	1 lap around a standard Athletics track is how many metres in length? A) 600m B) 800m C) 400m	C) 400m
	A waterpolo match is played with a total of how many players in the water?	14
	The Tour de France is a worldwide competition of which sport discipline?	Cycling
	How many bases are there in a game of baseball (including the home base)?	Four
	In 2012, a gold-medal winning cyclist was stripped of his achievements due to: illegal use of performance-enhancing drugs. Who was this athlete? A) Sean Kelly B) Lance Armstrong C) Tom Brady	B) Lance Armstrong
	Which gymnastics position does the below image illustrate? A) Straddle B) Pike C) Split	A) Straddle 

	What sport would you associate with a pommel horse?	Gymnastics
	What is particular about the cricket bat shape?	It has one smooth and one curved V shaped surface
	In which swimming event do swimmers start from inside the water?	Backstroke
	True or False: The duration of a Field Hockey match is 60minutes BONUS: What is the local governing body for field hockey?	True HAM – Hockey Association Malta
	How many bowling pins are there in the classic triangular pin formation?	10
	What is the implement hit back and forth in badminton?	Shuttlecock
	How many lanes are there on an Athletics track? A) 6 B) 8 C) 9	B) 8
	What is the difference between a cartwheel and a round-off landing in gymnastics?	A cartwheel finishes by landing on separate feet, alternately A round-off lands with both feet simultaneously
	Which of the below is a High Jump Technique? A) Arch B) Curl Over C) Fosbury Flop	C) Fosbury Flop
	What is the closest weight to a standard, official-sized football? A) 300g B) 450g C) 600g	B) 450g A standard football weighs between 410 and 450g
	What is the name of the sport associated with the Frisbee	Ultimate or Ultimate Frisbee
	Mention TWO sports which are practiced barefoot	Swimming, Water Polo, Martial Arts, Beach sports (Beach Volleyball, Soccer, Handball, Tennis)
	Who is the most decorated Olympian of all time?	Michael Phelps With a total of 28 Olympic medals
	The first modern Olympic Games took place in the year A) 1954 B) 1896 C) 1875 Bonus: Where did these take place?	B) 1896 In Athens

	Mention the four main swimming strokes. BONUS: What term describes the combination of all four strokes within the same race?	Butterfly, Backstroke, Breaststroke, Freestyle Medley
	The Wimbledon tournament is played on which tennis court surface? A) Clay Court B) Grass Court C) Concrete Court	B) Grass Court
	What does the term IOC stand for?	International Olympic Committee
	Judo and Karate form part of which sport discipline?	Martial Arts
	Goal Attack (GA) and Goal Shooter (GS) and Centre (C) are three positions in which sport discipline? BONUS: Can you mention any of the local netball teams?	Netball Backs, All Ages, Depiro, Mellieha, NRG, Ta' Xbiex,
	In Swimming, the stroke 'Freestyle' is also commonly referred to as _____	Front Crawl
	Give examples of ONE throwing and ONE jumping event in track and field Athletics	(Choose one from each event) Jumping: Long/High/Triple Jump, Pole Vault Throwing: Javelin, Discus, Shotput, Hammer throw
	In 2017, the sport of Synchronized Swimming changed its name. It is now referred to as _____ Swimming	Artistic Swimming
	FINA, previously the governing body for Swimming changed its name in 2022. It is now referred to as W_____ A_____	World Aquatics
	Apart from the balance beam, which other gymnastics event can only be executed competitively by women? A) Uneven Bars B) Vault C) Floor	A) Uneven Bars
	Mention one type of gun which is used in shooting sports	(Choose one) Rifle, Pistol, Shotgun

	Rearrange in ascending order, according to size: Tennis ball, golf ball, basketball, football, table tennis ball, handball	Table tennis, golf, tennis, handball, football, basketball
	Name ONE of the five main elements used in dance	(Choose one) Body – Action – Space – Time – Effort/Energy
	How many kgs do the below Olympic Plate colours refer to? 	Red = 25kgs Blue = 20kgs Yellow = 15kgs
	This Olympic event had to be postponed due to the outbreak of Covid-19 What year did this eventually take place and where was it held?	This took place one year later, in 2021, in Tokyo, Japan
	Basketball, Football and Rugby are all examples of this game category BONUS: Can you mention another TWO sports falling into this same category?	Invasion Games Handball, Lacrosse, Netball, Hockey, Ultimate Frisbee
	In this sport, the ball must be warmed up prior to the start of the match	Squash They do this by repeatedly hitting it against the walls
	Demonstrate the Gymnastics Pike Position on the floor	
	This sport involves individual or team performances using equipment such as balls, clubs, ropes & ribbons	Rhythmic Gymnastics

Rules & Violations		
Key Card	In which stroke must your legs remain together at all times?	Butterfly
Key Card	In the Athletics relay, this implement is passed on from one athlete to the next BONUS: What is this transition technique termed	The Baton The Changeover
Key Card	A player in a Waterpolo match gets excluded 2 times. Can he keep on playing?	Yes – the third and final exclusion sends the player out of the game permanently
Key Card	True or False: In Waterpolo, all players are only allowed the use of ONE hand	False – the goalkeeper is an exception
Key Card	True or False: In Tennis, the ball always has to bounce once before being hit	False Only in the service, the ball MUST bounce once <i>During play if the ball is hit before touching on the ground this is called a volley</i>
	In table tennis, when does a change of service occur? BONUS: A game is generally won after how many points?	After every 2points Game till 11points
	In Basketball, how many points is a Free Throw worth?	1 point
	True or False: You can play the ball with your feet/legs in a volleyball match	True There are specific rules about how and when but this is allowed
		The player illegally moves feet while

	During a basketball game, the referee calls a travelling. What does this mean? BONUS: What is the movement shown to signal this violation?	holding the ball – more than 2 steps Fisted hands, circular rotations
	The score in a tennis match is 40-40 or 40-all. What is this called? BONUS: what must a player do now to win the match?	Deuce Win 2 consecutive points
	A waterpolo match consists of how many players in the water?	14 in total 6 players + 1 goalie Each team
	A breaststroke swimmer touches the wall with one hand at the finish and is disqualified from the race. Why?	The swimmer must touch the wall with both hands simultaneously
	In specific Athletic running events, the 'Staggered Start' is used. What does this mean?	This refers to the athletes placed at different positions on the track at the start of the race, ensuring that all runners cover the same distance
	In a Volleyball match, two teams of how many players are separated by the net?	Six
	In a football penalty shootout, how many penalties are shot by each team?	5 penalties
	How many points does a team win when scoring a touchdown in rugby?	5

Appendix D

Scannable QR Code – Triumpha Printables Resource Pack

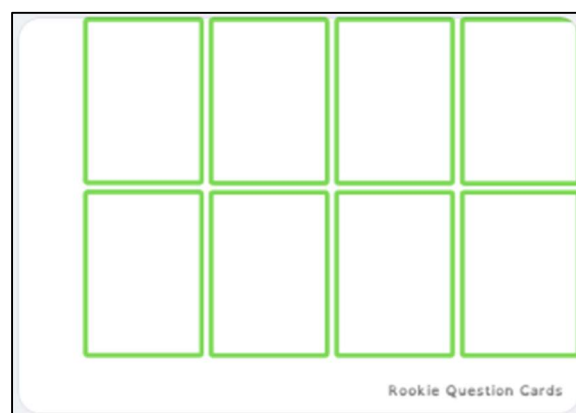
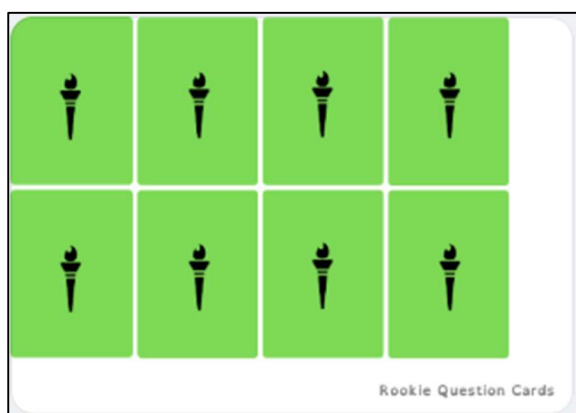
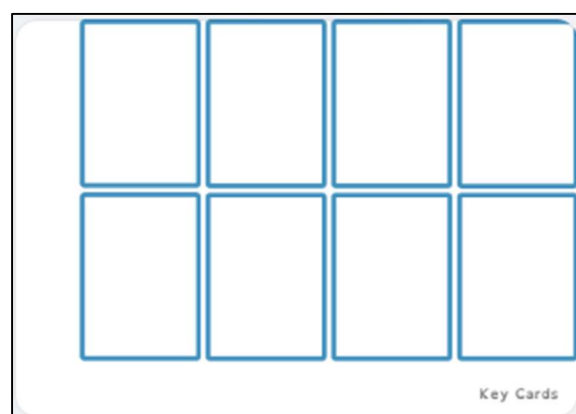
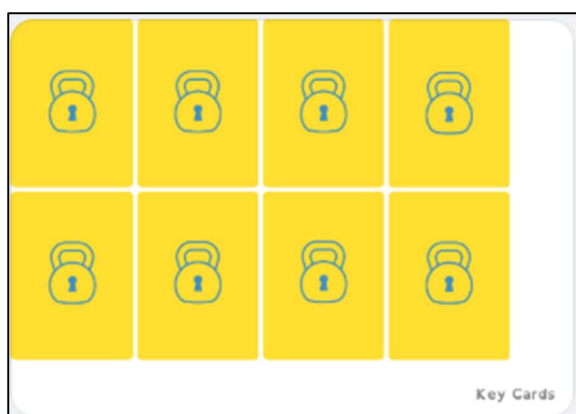


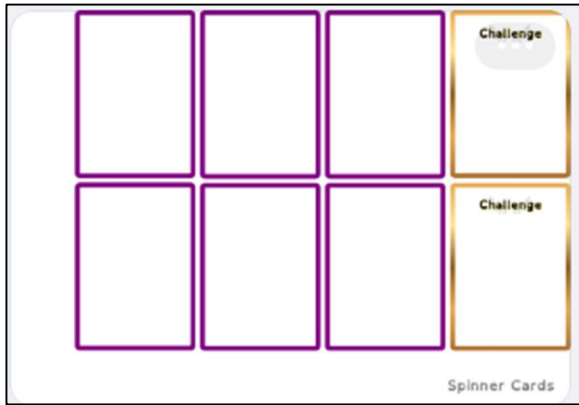
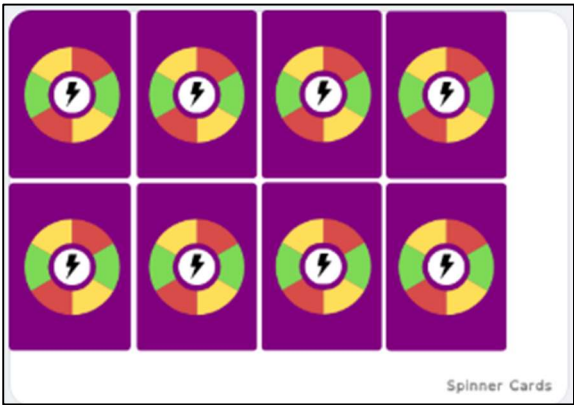
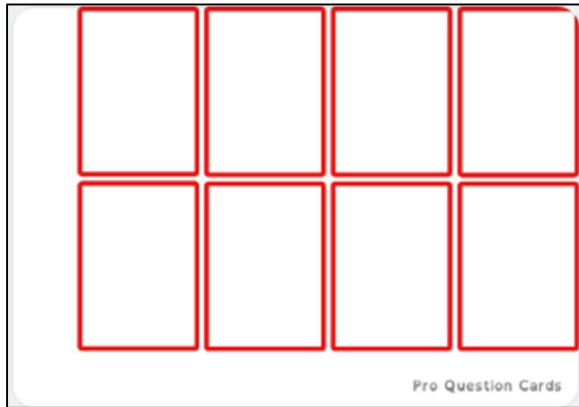
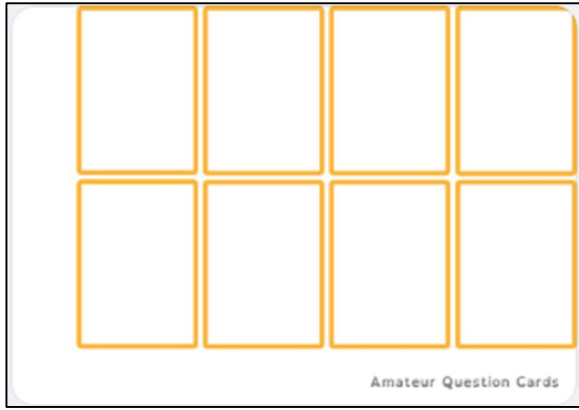
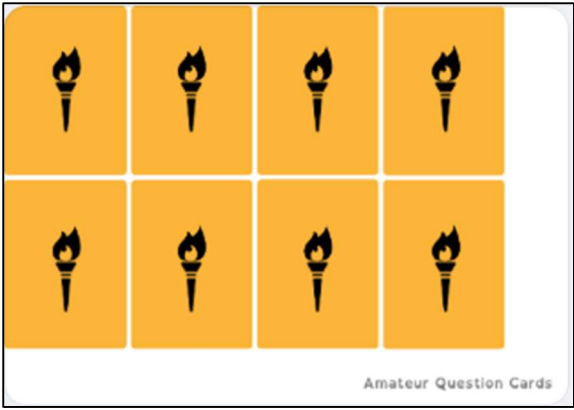
**Triumpha Printables
Resource Pack**

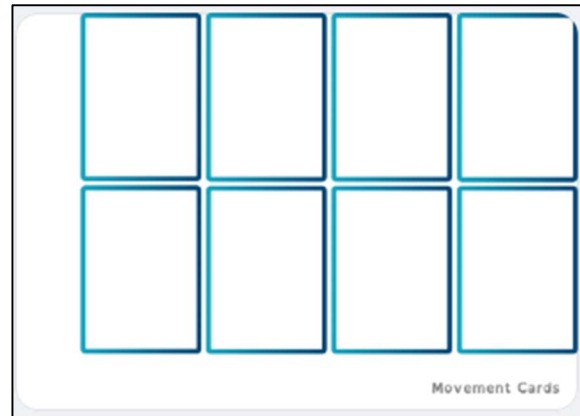
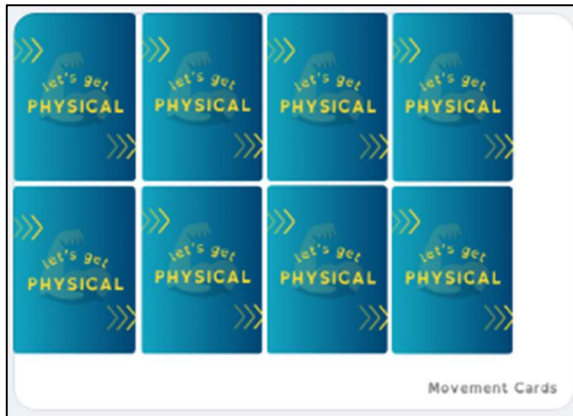
This includes:

- Key Cards
- Question Cards
Rookie Amateur Pro
- Spinner Cards
- Movement Cards
- Triumpha Scoresheets

*Print these A4 pages back-to-back to
create your personalized Triumpha Cards!*







Class: _____ Date: _____ 5pts 10pts 20pts Point penalty points Final Time Final Score points	Class: _____ Date: _____ 5pts 10pts 20pts Point penalty points Final Time Final Score points
Class: _____ Date: _____ 5pts 10pts 20pts Point penalty points Final Time Final Score points	Class: _____ Date: _____ 5pts 10pts 20pts Point penalty points Final Time Final Score points

Triumpha Scoresheets

Appendix E

Selected Email Threads & Communications with Polidano Printing

Good afternoon,

Hope all is well. I just called and spoke to Vanessa over the phone. I am a student at UoM and am currently concluding my Masters. For my dissertation I have created a Board Game and have reached the final printing stages, so I wanted to get in touch.

I have finalised the details and wanted to perhaps set a meeting or call to be able to explain my idea a bit further.

Very briefly, I have designed all board game components and would need to print these on different materials. Perhaps I would be able to come in before moving onto the professional printing process, seeing prototypes and hear any suggestions from your end. I would like to ask for an estimate quote if possible too, but this and a final pricing would obviously come at a later stage. I am listing what I have in mind below:

Physical Board itself

Option A: rubber mat + board game design on top (similar to mousepad)

Option B: foldable hard board (similar to monopoly)

Add on Board Pieces

Option A: Hard board

Option B: Foam Board

Question Cards

glossy type print - thicknesses etc to be discussed

Rule Booklet

Copybook style - stapled

discuss option to add perforations on back pages

Scoresheet

Receipt style - bottom part with perforation to be ripped-off

Actual Board Game packaging

Box

Please let me know the way forward and feel free to call me to discuss or clarify any ideas further - passing on my contact below too.

Kindest regards and thank you,

Mikela Riolo
+(356) 79011023

Jun 23, 2025, 2:54 PM

Hi Mikela,

Apologies for the delayed response. I've been catching up on a large volume of emails.

Unfortunately, I don't have enough information at this stage to provide an estimate, so please reply to below.

We can produce a hardback, foldable board game.

Could you please confirm the following details?

- How many sets do you require? The quantity will influence the pricing.
- How many cards will be included? These will be gloss laminated. Also specify size.
- For the booklets, how many pages will each contain, and what size are they?
- Will you need just one score sheet or an amount per game?
- Regarding packaging, we can supply them in corrugated board.

Looking forward to your reply.

Best Regards,

ALDO POLIDANO

MANAGING DIRECTOR

Jul 7, 2025, 12:33 PM

Good evening,

Many thanks for your reply. Sending you a few more details below:

- I am thinking of printing 3 board game sets in total
- Cards will be the average game card size: **64 x 89mm**
Gloss laminated sounds perfect thank you.
There are various Card sets involved in the Board Game - these have a back to back design (different print for Front/Back views)
These amount to 384 single cards broken down in this format:
 - x48 **Key Cards**
 - x48 **Spinner Cards**
 - x72 **Movement Cards**
 - x216 **Question Cards** (Green/Orange/Red x72 each)
- Re **Booklet**, only one Rule Booklet per Board Game Pack is included. This still need to be finalized however the information to be included at present takes up 12 Word Doc Pages.
I was thinking of an **A5 size booklet** hence this will be around **24 pages** in total.
- Re **Score Sheet** I had a style in mind however I do not know if this is possible - if possible with a single perforation so that the score log can be ripped off however the total scores can be kept as records (this is ideal but flexible on this)
- Re **Packaging** corrugated board sounds great, I only need a neat packaging to keep the Board Game Pack together since I will need to ultimately present this for my dissertation.
Will this be plain or perhaps a front print may be included with board game title etc?

Many thanks for the patience and looking forward to your reply. Would gladly discuss these options further in a meeting at your own convenience at a later stage.

Kind regards,

Mikela

Jul 10, 2025, 5:28 PM

Hi Mikela,

Thanks for your patience. I am sending you quote as follows worked on a M.O.Q of 3 pieces

3 board games (2 fold)
Printed in full colour on both sides/laminated and mounted on a hardback gre/grey board)
Covered all around
3 pieces @ €■■■ + VAT

.....

Cards
Printed in colour on both sides

These amount to 384 single cards broken down in this format:
x48 **Key Cards**
x48 **Spinner Cards**
x72 **Movement Cards**
x216 **Question Cards** (Green/Orange/Red x72 each)

3 sets of 384 cards - €■■■ + VAT

.....

A5 Booklet
24 pages
Self cover
Printed throughout
Folded/collated and stapled as booklet
Size: A5

Qty: 3 books @ €■■■ + VAT

- Re **Score Sheet** I had a style in mind however I do not know if this is possible - if possible with a single perforation so that the score log can be ripped off however the total scores can be kept as records (this is ideal but flexible on this)

Need more info to be able to quote for the score cards. Size/quantity/ if all common or all different image/ perforated and do you need like a batch of 50 pads

Packaging corrugated board sounds great, I only need a neat packaging to keep the Board Game Pack together since I will need to ultimately present this for my dissertation. Will this be plain or perhaps a front print may be included with board game title etc?

Corrugated white box including cutter for CNC cutting
3 white corrugated boxes @ € + VAT
If you also need them printed add an additional € + VAT

Looking forward to hearing from you.



Aldo Polidano <aldo@pplmalta.com>

Sat, Jul 26, 11:32 AM

to me, Vanessa ▾

Tks Mikela

Appointment scheduled for Tuesday at 9.00am



Aldo Polidano

Sep 4, 2025, 1:12 PM (3 days ago)



to Alfred, Ana, me ▾

Hi Mikela,

Everything is ready except the boxes. As for the box better you visit me and discuss exact size accordingly and to be honest we are very tight on the cutting machine if you need it by tomorrow. Maybe you fold it differently I might be able to offer you ready made boxes at a fraction of the price.

3 board games on imitation leather

Printed on Imitation leather material with UV cured inks and CNC cut to shape.

3 pieces @ € + VAT

Additional rigid cards

Printed in colour on white Bristol board, laminated and glued to a grey/grey board

Cnc cut to shape

5 pieces x 3 of each (15 pieces)

€ + VAT

Cards

Printed in colour on both sides

These amount to 384 single cards broken down in this format:

x48 **Key Cards**

x48 **Spinner Cards**

x72 **Movement Cards**

x216 **Question Cards** (Green/Orange/Red x72 each)

3 sets of 384 cards - € + VAT

A5 Booklet

24 pages

Self cover

Printed throughout

Folded/collated and stapled as booklet

Size: A5

Qty: 3 books @ €  + VAT

Kindly visit me at your earliest.

Best Regards,

ALDO POLIDANO

MANAGING DIRECTOR



Packaging



Mikela Riolo <mikelariolo5@gmail.com>
to Aldo ▾

5:23 PM (3 minutes ago)



Good evening!

Sorry to be sending on a Sunday - just wanted to let you know that I managed to find a good packaging option and wouldn't need the custom packaging from your end. Thank you for all the patience and professional printing, the board game turned out super!

Kind regards,

Mikela

Appendix F

Presented Triumph game pack

