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REDEFINING PUBLIC POLICY EDUCATION THROUGH AN EXPLORATORY DIGITAL CURRICULUM: SINGAPORE'S STATECRAFT X

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ABSTRACT

Given the current international context of instability and uncertainty, we were driven by the desire to utilize a digital game to cut across the complexity of public policy, so as to educate our young with the experience and deep learning to be appreciative, accountable and proactive citizens of a globalized world. Having developed a curriculum that synthesizes technology, philosophy and pedagogy, we began our iterations of exploration with Singapore public schools. Through our project, we wanted to share our idea that the learning of public policy, in the form of Singapore's Social Studies curriculum, was disadvantaged with the traditional, transmission-oriented mode of education, and had to be experienced and performed. Data from the impactful dialogic sessions conducted showed that students experienced realistically the problems faced in public policy decision making, and gained a sense of what governance, learnt performatively entailed.

1. INTRODUCTION

We live today in a world beset with international complexity and danger. A panorama of the past five years of international affairs yields the instability of governmental systems in some regions of the world. Regions are affected not only by economic woes of excess, ignorance and the lack of political compromise, but also, the uprising of the human spirit for freedom and transparency, spreading across the vastness of continents. Human civilization has never been more interconnected, and has not ever had such a chance for global influence, if not for the speed and development of technology. This is especially so in areas like mobile communications and social media, avenues favored among the young, globalized citizens of a new prospective world order. Governments trying to harness this relentless technology in development to better manage their states would realize that this would not be viable without addressing the new needs of education for the young, in the area of public policy, through a digital game.

With the trans-continental mobility of people, ideas and digital influences, the young, globalized citizens of this new world order, spurred by the ability to communicate their aspirations through social media, would not want to be bystanders in the shaping of their countries' futures. Globalization itself serves as an agent for obligatory education reform, favoring curricula supporting global interdependence (Hershock, Mason & Hawkins, 2007). Hence, more so in Asia than in other regions, to facilitate their participatory rigor, educational development in areas like the Social Sciences might gradually shift to being a student-centered endeavor, aided by a means to engage in social learning. This should be the case specific at the level of Secondary education – the ages of 13 to 16, and involving the common subject long used to 'teach' concepts of governance, Social Studies, an amalgamation of History, Geography, Political Science, Economics and Sociology (Ministry of Education, 2012).

2. TECHNOLOGY'S ROLE IN 21ST CENTURY PUBLIC POLICY EDUCATION

In a human resource dependent nation-state like Singapore, a hub connecting Western and Eastern interests, every learned student matters in his or her contribution towards nation building. As Singapore moves to become a society of further inclusiveness, the citizenry has to be educated away from the transmission-based mode of learning. This is strikingly so in the subject of Social Studies, taking into consideration Social Studies' limitations in simply telling the students about the 'facts' of governance without assenting for performance. Allowing for performance would bridge the gap between the theories and principles of governance, and the actuality of enacting governance, enabling in the students a deeper plane of understanding and awareness.

In this paper, we share our solution to addressing the needs of a student-centered, digital Social Studies curriculum so to as encourage a forward-looking vision of preparing the young of Singapore as global citizenry in their responses to public policy initiatives, both local and internationalized. We will discuss how Statecraft X, a mobile game-based learning curriculum, represents our contextualized ideals of necessity and philosophy of education. Following this, by examining selective instances, namely the utterances of the students during the dialogic sessions, we will explain how Statecraft X provided the impetus for students to think and enact public policy without having first learnt the 'factual content' found traditionally in their Social Studies textbooks, and how this led to their incremental understanding of what governance entails.

2.1 Literature Review

Much of our motivation and desire to engage in the Statecraft X project was contingent with our understanding of a variety of literature on learning. Video games, or more appropriately in today's mobile context, digital games, have immense potential as learning tools. Games are multidimensional, challenging and are designed to allow for learning to take place. They alter the belief that thinking is an activity that takes place in solitude and instead, identifies how the combination of emotion and pleasure derived from play are key to thinking and learning (Gee, 2007).

In developing as well as developed societies that prize inclusiveness, approaches to learning have to factor in the growth of creative differences in individuals. This must be supported by the need for experience in environments, in the Deweyan sense of educational pragmatism, where consequence, action and thinking in learning come together without a mechanical, predictable end result (Elkjaer, 2009). To the extent that this is so, learning cannot and should not be regarded as an individual activity, and must take place in social contexts, taking in consideration that constructs of what we know, and how we make meanings of them are situated in communities (Wenger, 2009).

Learning should not take place with an emphasis on the capacity of the students' capabilities, but rather, the action being enacted, so as to ensure learning through performance, which is reflexive in nature (Baumann, 1989). A performance oriented model of learning is advantaged when compared to the human information processing model, which regards learners largely as storage machines, as performance leads to the creation of new meanings and understandings of existential occurrences only possible by a biological being (Chee, in press). That, in these perspectives explained, is why Statecraft X accentuates digital contexts and socialized learning with opportunities for performance.

2.2 Game-Based Learning through Statecraft X

Technology knows no boundaries, and in an ever-evolving educational landscape, the digital divide would render students who are not allowed to learn together with technological savvy in a much disadvantaged position. Statecraft X, being an innovative game-based learning endeavor, bridges this gap. It provides not only a platform, but a digital realm, a "magic circle," well insulated from the distractions of the real world (Nielsen, Smith and Tosca, 2008) to allow for students to conduct personal, yet socially connected experiments on performing governance. The game is run on Apple iPhones as an installed application. The portability and island-wide availability of 3G, as well as Wi-Fi connections enhances the mobile playability of Statecraft X. Functionally, the game is akin to a miniaturized version of a Massive Multiplayer Online

Role-Playing Game or MMORPG for twenty plus players, where game play is only possible with teams of participants, and players navigate through town, world map and specific in-game action menus on their iPhone screens, like the town map shown in Figure 1.

Figure 1. The town map where players have access to buildings and their functions.

Figure 2. The world map where a player has entered another town and has a range of options.

Statecraft X is set in the fantasy kingdom of Velar, which stands without a ruler after the death of a wise and capable king. Over the course of three weeks, students play in groups of four or five, where they represent factions fighting for control, influence and power over Velar, and to control the capital city Topezios. The four factions are Dragon, Pegasus, Phoenix and Griffin. Within each faction, each player starts off as a governor of a town. Statecraft is innovative in giving each player the option to vary and manipulate their town's development pertaining to issues like housing, healthcare, defense and the acquisition and production of resources. Adding on to this flexibility is the complexity of adjustable tax rates, workers' wages and even limitations on the skill level and trainability of workers and citizens who have decided to make a particular player's town home, seen in Figure 3.

Figure 3. An in-game menu where players modify immigration policy.

The social aspect of control is also not forsaken as players have a say over the holding of ideological rallies and beneficial multicultural events. Beyond the governorship of each individual town, players, at both a personal and factional level, have to make constant decisions on the organizing of diplomacy, conflict, influence and control over artificial intelligence controlled, and also, player controlled towns. The governors of the towns in Velar also meet with the random and sometimes multiple event occurrences of bandit attacks, epidemics and finally, towards the end of the game, an onslaught by a neighboring country, Salfreda, which tries to seize control of the entire kingdom. The random events that occur add to the challenge of putting in place strategic and decisive policies, and are reflective of the unpredictable nature of real world governance. At all phases of the game, students' progress in their factions is captured daily in the form of economic and happiness graphs, reminding the students of the realities of having to balance societal well-being with economic prosperity (Chee, Gwee & Tan, 2011).

2.3 A Curriculum for Digital Empowerment

Philosophically, Statecraft X's curriculum design was influenced by the strength of educational and social theories. The learning of public policy and governance cannot take place through forced, textually limiting transmission-based materials like textbooks as the process of social science education is lost without a form of unhindered development, such as that put forth in Dewey's (Dewey, 1916; 1980) exposition on naturalism. Essentially, public policy, in the sense of democratic education, is composed of decisional input from a learned mass of citizenry, and would naturally involve conflicts of inquiry. Hence, Statecraft X allows for students to replicate these conflicts of decisions, and the responsibility over the lives of their townspeople in the game, which would lead to a deeper and more inclusive learning experience (Dewey, 1938; 2008). A platform with performative potential is incomplete without a binding method for students to negotiate the meanings of governance they have just put in practice. Thus, the Statecraft X curriculum gives students the opportunity to engage in dialogic sessions, where meaningful, context shaped utterances in the form of inter-student dialogues with one another, facilitated by the teacher, embody the backward and forward creation of the renewed understanding of governance in practice (Bakhtin, 1981).

Pedagogically, the game is driven by the Performance-Play-Dialog model of game-based learning (Chee, 2007; 2011), which emphasizes the feedback loop where the performance of governance is enjoyed as a form of play – a naturalistic development thought to originate in one's first experience with learning, further developed through meaningful dialog, and repeated as beneficial practice. The students are encouraged to be inquisitive and experimental in their game-based performances, and to vocalize their thoughts in teacher-facilitated dialogic sessions which complement the digital platform. Learning is not isolated in individuals but takes place socially as students, in order to secure success in the governance of their towns, have to collaborate and cooperate to enhance the workability of their choices made.

2.4 Method

Statecraft X comprises of Game-based Learning as curriculum interventions in Social Studies classes with fifteen year old students. The objective of enacting the interventions was, as a research project, to enhance classroom teaching and learning in the upper Secondary subject of Social Studies, and investigate its applicability in Singapore's context of education. This paper focuses on the curriculum interventions, and dialogic sessions that took place in two public schools at the Secondary level, involving six classes and four teachers, in the first half of 2012. The two schools volunteered to be involved in the research project as they were keen to have their teachers acquire new methods of facilitation, while exposing their students to digital learning.

The first school had the flexibility to experience two cycles of intervention, and the second school only had the time in their school curriculum to fit in one cycle of intervention. The six classes comprised of four classes from one school and two classes from the other, making up approximately one hundred and twenty students. These students were from the Express stream, which forms the broad mass of students in Singapore Secondary schools. The teachers involved are named teachers A, B, C and D in respect of their anonymity in our study. Each Statecraft X class had approximately twenty students, and each curriculum intervention took place over three weeks, where students loaned iPhones from the research team and played the game. Within the intervention period of three weeks, each class underwent four dialogic sessions lasting sixty minutes each, which is the largest block of time allocated for Social Studies in these two schools. Audio-visual equipment was set up to record the interactions between the students and the teacher's facilitation. The interpretations in this paper are based on the qualitative data of students' utterances captured from the dialogic sessions, which were then transcribed and coded categorically based on grounded theory (Corbin & Strauss, 2008).

2.5 Results and Discussion

The richness of utterances captured in meaningful dialogue is often underestimated in its qualitative value. In fact, students' development in their understanding of governance became apparent when we investigated the utterances captured through video recordings during each of the four dialogic sessions carried out in the schools that collaborated with us. Taking a grounded stance, we discovered that these fifteen year old students, through their playing of Statecraft X, were able to reflect and express through their dialogue that they have understood, with significance to their level of appreciation, accountability and pro-activeness in four areas of public policy, without any exposure to conventional Social Studies materials. These four areas were: the realities of governance, social policy, economic policy and foreign policy. Examples were numerous and for the purpose of this paper, we will be highlighting selective instances of developmental realization among these students.

2.5.1 Appreciating the Realities of Governance

Generally, dialogue from the dialogic sessions was evident in showing a raised awareness in students' appreciation of how it was a difficult task to govern. When teacher A challenged her students to make a choice between putting a greater emphasis on the economic development or a country's defense needs, she was met with a diversity of responses, such as "It is important to be prepared in both defense and the economy," and "If you have the money you can make people happy and you also have stability." Some students realized that it was more important to have a balanced development, while others took an economy-first perspective. Fundamentally, it became clear to students that they had to be accountable for their choices as governors. In another session, one of teacher A's students, having explored the various towns in Velar, remarked that: "When you have a big country and you have an order, it will take some time for the order to be passed down." Without having been told about the difficulty of effective communication in big countries, this student comprehended the challenge on his own. Teacher C asked students if leaders could neglect their people and there was unanimity in their response that this was a possibility. Students, through this recognition, were aware that government leadership can and will go wrong from time to time.

Students uncovered the paradox of governance when teacher C inquired about the students' understanding of the importance of citizenry, and one of her students remarked that citizens were not only needed to provide for defense, but they could also extractively give a governor and his or her town money. Governance, to this

student here was not an altruistic activity but one of situational advantages. This student realized that governments, in ensuring the survivability of their nation, as well as their own positions as leaders, could not always take a selfless stand, and when the opportunity arose, had to balance themselves with some form of gain, possibly like the monetary gain that governors in Statecraft X experience. Whenever governors in Statecraft X take actions using their Action Points (AP), they would have to wait an hour for their APs to be replenished. Without making this overtly known to the students so as to enhance the self-exploratory element of the game, students recognized for themselves this limitation and in Teacher D's class, admitted that "the one hour gap between different plays show that we may not be able to give people what they want as fast as they expect it." Statecraft X, to this student gives the "opportunity to think hard about the actions you take, you can strategize" and "gives us the timing to plan, real life also cannot plan like that" which is indicative again of the realities of governance.

2.5.2 Understanding Social Policy with Accountability

Interestingly, responses to social policy made up the bulk of students' meaningful dialogue, which shows that despite their age, they are accountable to their social surroundings, both within the game and beyond. Perhaps, due to their close proximity to society itself as middle class students from public schools, this was their primary area of focus. Teacher A referred to an in-game event where an epidemic hit the towns of Velar and many students found their citizens dying from this epidemic. Students responded that some of their factions were well prepared for this event, as some of them had prioritized the building of a healing center, while others were not prepared as they were too preoccupied in the building of their barracks when the epidemic hit. With further dialogue, students were appreciative of the effects that the ignorance of governmental action could bring to society. In the game, governors can travel to other towns where they can hold rallies or even attempt to take over the town by force. When a student from teacher B's class attempted to conquer another student's town forcefully, he was met with failure. This student had made his attempt with the assumption that the use of force was the only known way to conquer another town, and had his assumption proven inaccurate, which became a learning point when he tried to do so. Responding to this episode, a student remarked to the victim that the aggressor "tried to take over your town but people drove him out." Reflective of reality, the responding student realized that the strength of citizens' belief in their governors and the hope that it brought can overcome invasive political maneuvers.

Of course, the reverse could happen and it certainly did. In one of teacher C's class, a student was preoccupied with conducting rallies purely to "increase people's trust so that the person can take over others' town" and elaborating on that "increase people's trust in the way of governance leading to people trusting you more and the people want you to govern instead of using force and violence." This student saw social policy in connection with diplomacy in the expansion of governmental influence, but at the same time recognized the potential for soft power application to conquer without violence. Placing a strong emphasis on the citizenry's belief, a student from teacher C's class exclaimed that "if there is no belief in the governor the town cannot function." Students from both classes therefore understood that for societies to function harmoniously, and for the citizenry to provide the best of their talents and capabilities for continued growth and prosperity, there had to be belief in governance, a reality of many political contexts. Teacher A quizzed her students on their thoughts and feelings about the immigration of talents into a country, drawing on the Statecraft X in-game function where governors could restrict the type of immigrants as well as the skill level of the immigrants. This led to a peculiar, alternative pro-immigration response when a student chose not to echo the other responses of anger but rather that foreign talents would allow for "the need to continue to improve yourself." Armed with dialogue from both sides of the immigration debate, the students emerged from the dialogic session more appreciative of foreigners in their country and accountable for their criticisms.

2.5.3 Experience and Thinking about Economic Policy

The dialogic sessions revealed that despite the lack of 'knowledge' in economics, students could reflectively suggest ideas relating to tax and labor policies. This would not be possible without invoking their higher-order thinking abilities, and was due to them experiencing economy-related policies at first hand. When it came to the management of workers, students from teacher A's class were in favor of giving opportunities for gradual salary increments and in their deployment, they stressed the need for not having excessive people employed as to minimize the loss of revenue and profit.

In another session, students from teacher A's class also observed, through their manipulation of the tax rates in the game and the subsequent responses of the citizens' happiness levels, that a reduction of taxes and increases in the citizenry's happiness as not something that occurred across the board. With concern to managing a country's reserves and budgeting, one of teacher C's students explained: "save money in case the food runs out, there are illnesses or war, where food prices will go up," and "in times of war increase taxes so that there is more money to train soldiers and high tech weapons." This student was lucid about having strong reserves to cater for times of crisis and the necessity of increasing taxes to suit a more immediate concern threatening a country. The productivity of labor is another concept explored through students' responses. Teacher B questioned the students about how they trained workers specific to the water tower and was given the reply that the workers would be "more efficient, have a higher productivity and more output of water." Students were proactively concerned about the running of their towns because they could, through play, intervene as the government and shape their own polity.

2.5.4 Engaging in Foreign Policy with Pro-activeness

Statecraft X allowed for students to experience what it was like enacting and engaging in policy without learning about the concepts first. This led to them showcasing their prowess in dialoguing about military strategy, the act of diplomacy and also the interdependence of nations, in many instances with pro-active engagements. In the aftermath of a series of Salfredan attacks, a student in teacher B's class found that he had lost five out of his seven towns to forces from Salfreda, and thinking about this situation led the student to conclude that he was managing too many towns. This is in actuality, a common problem of big countries, which have centralized governments and defending these countries' borders is no easy feat.

Dialoging about military expansion and action resulted in students unveiling the various reasons for war, and not to view war merely as an act of aggression. Students in teacher B's class found that governors declared war with one other to "get more resources, to get more land for the citizens," in the words of one student. Students also realized the importance a strong defense plays in deterring invasions and keeping the citizenry happy. One of teacher B's students found that her town's wall defense was zero, and deduced that as a result of this, there was "no stability, no safety and no sense of security" which led to the town's people being unhappy despite racial harmony functions being organized for their benefit and to keep them happy. In teacher D's class, the perils of a small, successful nation was brought out when a student raised the point that as a town, representative of small countries in reality, "when you're outstanding you'll be the center of attraction and there will be those who wish to harm you and those who wish to look out for you," which highlights the importance of necessary alliances as well as caution in diplomatic relations, and the dangers of invasion.

3. CONCLUSION

In this paper, we argued that there is no better time than the present for education to emphasize the learning of public policy, given the turbulence in international affairs and the growing influence which globalized digital citizens have over matters of resolution. Being inspired for a noteworthy solution, we began the use of exploratory technology, manifested in a digital game, Statecraft X, to allow students to experience, through the PPD model of game-based learning, the complexity of public policy as a governor of a town in a fantasy realm. Through the examination of our research data, notably the utterances from the dialogic sessions, we found developmental evidence of students coming to terms with concepts of governance without having had any formalized 'teaching' sessions during their Social Studies classes.

The curriculum interventions were successful, as identified in the categorization of four areas of public policy concerns: the realities of governance, social policy, economic policy and foreign policy. Students were appreciative of the difficulties of governance, could conduct social policy with accountability, run economic policy with higher-order thinking and engage in foreign policy pro-actively by the end of each of the three week cycles. Certainly, the implementation of Statecraft X in schools faced a number of challenges. As Singapore schools ran on closely planned schedules, we were unable to run the curriculum together among the schools at the same time, and among the students involved in the curriculum intervention, there were a number who tended not to contribute sufficiently to the dialogic data in the sessions they had. However, these concerns can be addressed as the teachers we worked with for this series of iterations are now experienced in

both the game-based and dialogic pedagogy, and exhibit the increased ability to facilitate towards the completeness of our intended scenarios. We are therefore confident, that further iterations of the Statecraft X curriculum and its refinements from this series of iterations would allow for the curriculum to encompass a wider range of concepts related not just to governance but that of a broader conceptual framework which would allow students to emerge as learners ahead of the demands of the 21st century.

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