The Relationship Between Power Distance, Trust, and Performance in Video Game Development Teams

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Abstract

This study investigated the effect of power distance and intra-team trust on performance in video game development teams. Drawing on a data set of 11 student teams developing mobile video games, we found a significant positive relationship between intra-team trust and team performance over time. The growth in the significance of this relationship over time paralleled Tuckman and Jensen's (2010) four stages of group development (forming, storming, norming, and performing). No relationship was identified between team power distance and team performance. These findings contribute to forming a general understanding of how power distance and team trust affect the performance of video game development teams.

Keywords

Trust; team trust; intra-team trust; team performance; power distance; team power distance; video game development

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Introduction

A great team can produce results beyond any single star performer. In sports, for example, a team of individual all-stars does not always equate to an all-star team. The purpose of this study was to explore how video game development teams can foster high levels of productivity among their members. Power distance and trust have been highlighted as pervasive qualities of successful teams in the business world (Cooper, Hellriegel, & Slocum, 2018). This study examined whether these two variables are also predictors of successful video game development teams.

Global video game revenue reached over $138 billion in 2018 (Wijman, 2019). As investment in the video game sector continues to increase, there is significant pressure on companies to create products that perform well in the marketplace because failures often run into the millions of dollars (Wijman, 2019). Interdependent, cross-disciplinary video game development teams are responsible for creating these revenue-generating games (Keith, 2015).

A few related industry studies have examined team performance factors, such as communication, technology, and management (LaFasto & Larson, 2001; McConnell, 2014; Petrillo, Pimento, Trinidad, & Dietrich, 2009). Several video game industry research studies found that integrating agile methodology into video game development is a solution to improve communication (e.g., Kanode & Haddad, 2009; Mayer, 2019; McConnell, 2014; Petrillo et al., 2009). An agile methodology is one under which requirements and solutions evolve through the collaborative efforts of cross-functional teams to satisfy the end user (Keith, 2015). Thus, what differentiates agile methodology from traditional project management, such as the waterfall method, is its capacity to adapt to change throughout the development process. The waterfall method, conversely, is characterized by rigorous adherence to requirements that are defined at the start of development (Keith, 2015). Additionally, a group of game industry researchers developed a new technological system aimed at categorizing project retrospectives into a database, thereby assisting video game developers in learning from past mistakes (Podlodowski, Fonterra, Petgrillo, & Guéhéneuc, 2018).

To contribute to this ongoing conversation in understanding how management processes affect the performance of interdisciplinary video game development teams, this study examined how two factors affected team performance: team trust and team power distance. Team trust refers to members' ability to receive and give salient feedback to others and to accept interpersonal risks to improve performance. Team power distance refers to the unequal distribution of power among members of the team. Previous research in other industries, such as software development and aerospace engineering, has indicated that these variables influence team performance (Bock, 2017; Cole, Carter, & Zhang, 2013). Therefore, studying these same variables may improve

our general understanding of the effectiveness of video game development teams. This research aimed to answer the following two questions:

1. Do high power distance video game development teams perform better than low power distance video game development teams?
2. Do video game development teams with high trust perform better than video game development teams with low trust?

Hypothesis Development

Team Trust

Trust refers to the psychological state in which an individual accepts interpersonal risks because of their belief in the positive intentions of another individual (Cooper et al., 2018). These interpersonal risks include sharing criticism, expressing ideas, and admitting mistakes. High trust teams have members who actively communicate with each other, resulting in team members who are aware of their expectations, do not attribute blame to others for their own shortcomings, and believe in sharing credit with others for their achievements. In a study performed in the manufacturing industry, trust improved employee job performance because subordinates focused more on their tasks when they trusted management (Mayer & Gavin, 2005).

Intra-team trust, or team trust, applies the concept of individual trust through the team processes of monitoring, effort, and psychological safety (Cooper et al., 2018; Edmondson, 2018). Monitoring occurs when team members observe the actions of their colleagues in order to catch errors and provide constructive feedback. Effort measures how much of a team's energy and resources are dedicated to completing work. Finally, psychological safety refers to the extent to which team members feel comfortable conceding errors and contributing ideas (Edmondson, 2018). Table 1 summarizes the effects of low and high team trust on team processes.

Team Process	Low Team Trust	High Team Trust
Monitoring	• Inconsistent or no task review between team members • Avoidance of constructive criticism	• Consistent task review between team members • Constructive criticism
Effort	• Work exclusive to mandatory hours • Less focus and engagement	• Work more likely to begin with early arrival and/or late departure • Greater focus and engagement
Psychological Safety	• Suppression of ideas • Concealment of mistakes	• Expression of ideas • Admission of mistakes

Table 1. The influence of low and high team trust on team processes.

Tuckman and Jensen's (2010) group development sequence provides a strong theoretical framework to study the effects of team trust on small teams. Their framework outlines four stages: testing and dependence (forming), intragroup conflict (storming), development of group cohesion (norming), and functional role relatedness (performing). In the forming stage, members focus on defining goals and developing procedures for performing their jobs. The storming stage is characterized by conflicts regarding tasks, responsibilities, priorities, goals, and leadership decisions. In the norming stage, member behaviors evolve into the sharing of information, accepting different options, and attempting to make decisions that may require compromise. In the performing stage, members usually have accepted a diversity of viewpoints and are willing to risk "wild" ideas without fear of being ridiculed or discouraged. Listening carefully and giving accurate feedback both help focus members on the team's goals (Tseng & Ku, 2011).

Multiple studies found a positive association between team trust and team performance (e.g., Crossley, Cooper, & Wernsing, 2013; De Jong, Dirks, & Gillwapie, 2016; Palanski, Kahai, & Yammarino, 2011). Interdependent, cross-disciplinary teams accrue the greatest performance benefits from high trust. This occurs because interdependent teams typically work in complex environments with shifting task and workflow uncertainties. Task uncertainty is based on the extent to which the person's knowledge of the work process, and the sequencing of activities, is unknown, while workflow uncertainty refers to the knowledge of when tasks arrive to be processed. Therefore, to resolve workflow and task uncertainties, team members must collaborate with each other to complete duties that require specialized knowledge (Slocum & Sims, 1980). Tuckman and Jensen's (2010) model is especially relevant to video game development since multiple

iterations of tasks are required to produce a high-quality game. Each iteration generates new tasks and workflow uncertainties. Members of each speciality, such as art, programming, and level design, must work collaboratively to resolve these uncertainties and produce a viable game. Thus, we formulated the following hypothesis: video game team performance is positively correlated to team trust (hypothesis 1).

Power Distance

Power distance is a cultural value that describes a population's collective adherence to hierarchy (Hofstede, 1980). In high power distance countries, such as Japan, China, and Mexico, traditional businesses utilize centralized decision structures and organizational pyramids with extensive stratification between the highest and lowest ranking employees (Simmons, Hawkins, Duffy, & Alfraih, 2019). Conversely, businesses in low power distance countries, such as Sweden, Denmark, and Norway, demonstrate less concentration of authority via flatter organizational pyramids with fewer layers between the highest and lowest ranking employees (Schramm-Nielsen, 2001).

At a societal level, power distance forms the attitudes and preferences of citizens. Although Hofstede (1980) originally established power distance as a societal value, it is also applicable to teams. At the team level, power distance refers to the extent to which employees accept unequal power structures in their team (Hu, Erdogan, Jiang, Bauer, & Liu, 2018). According to past research, this variable influences team structures and processes (Earley, 1999; Kirkman, Chen, Farh, Chen, & Lowe, 2009). For example, high power distance teams expect their leaders to take charge by establishing clear expectations and providing strong direction. In high power distance teams, a leader holds power because of their position in the team's structure, and team members are generally reluctant to question the leader because of status incongruity. In this sense, leaders are autocratic and hold positions of power, and so members of the team are more likely to go along with the leader to avoid confrontations (Simmons et al., 2019).

In low power distance teams, members expect their leaders to share their power via open communication and collaboration. Team members can disagree with each other and the leader in the process of accomplishing the team's goal. Leaders establish an organic, as opposed to mechanistic, management system (Cooper et al., 2018). Members in low power distance teams continuously alter relationships in response to situational changes. Table 2 summarizes the characteristics of teams with low and high team power distance.

Characteristic	Low Team Power Distance	High Team Power Distance
Decision-making	• Consultation of team • Informal participation	• Leader as primary decision-maker • Reliance on formal procedures and rules
Structure	• Organic organization • Flexible roles	• Mechanistic organization • Clear role delineation

Table 2. The influence of power distance on team characteristics.

In addition to affecting team organization and processes, power distance impacts team performance. In an investigation of Chinese companies, researchers found that bosses who shared the power distance preferences of their subordinates experienced better team performance than teams with disparate power distance preferences between bosses and subordinates (Cole et al., 2013).

Due to frequent product iterations during the development cycle, video game development requires extensive collaboration through new and uncertain relationships amongst a team of artists, level designers, producers, and programmers. When portions of the game fail, the entire product is impacted and the team must make corrections before proceeding. Game development involves a process of making serial iterations to complete the project. Members often circumvent the formal structure to fix their problem without informing team members of their activities (Cooper et al., 2018). In high power distance teams, team members believe formal structure enforces responsibility and accountability (Hu et al., 2018). In low power distance teams, structure can be perceived as simply a means to an end, but not an end in and of itself (Hu et al., 2018). This led us to formulate a second hypothesis: team power distance is negatively correlated to team performance (hypothesis 2).

Methods

Team Structures, Surveys, Interviews, and Statistical Analysis

At the beginning of September 2018, 46 first-semester master's students from the video game development program at Southern Methodist University (SMU) were randomly placed into 11 teams based upon their discipline. No attention was given to their cultural background, gender, age, or prior video game development experience. The students came from the United States and South-East Asia, and had not met each other prior to attending the program. During the experiment, two of the teams' performances were below what was necessary to complete the required course work. Consequently, members of those two teams were integrated into other teams. Each of

the nine teams was self-managed and charged with producing a mobile video game.

Over a three-month period, each team's performance was measured every two weeks, with a total of five required milestone achievements. These milestones measured the completeness and quality of the games. After each milestone, every team member had to complete a survey that measured two of the studied variables: team trust and individual power distance. To measure the third studied variable, team performance, external stakeholders completed a team performance assessment for every video game at each milestone. The external stakeholders were faculty members in the program (not teaching the students) who had 10–12 years of experience in the video game industry. All surveys were administered electronically.

Quantitative data was analysed using Statistical Package for Social Sciences (SPSS) and non-parametric tests were performed due to the sample size. In addition, one researcher, HC, selected and individually interviewed one video game developer from each team based on the availability and the speciality of the member. After each milestone, a minimum of two and a maximum of four interviews were conducted with participants from each team.

Quantitative Survey Creation and Survey Reliability

The researchers assessed team trust via a fifteen-item scale developed by De Jong and Elfring (2010) in their study of the impact of trust on performance on small, interdependent teams. As shown in Figure 1 (see Appendix), responses ranged from "strongly agree" to "strongly disagree" on a seven-point Likert scale. An example item was: "I trust my team members." A Cronbach's alpha was calculated across all five milestones to measure the internal consistency reliability of the scale. The coefficient alpha of the scale was $\alpha = .96$, indicating that the scale was highly reliable.

The power distance measure was a six-item scale adapted from Dorfman and Howell's (1988) questionnaire on cultural values. In order to make the language meaningful to the participants, the words "manager" and "employee" were changed to "leader" and "team member." Following Hu et al. (2018), individual survey results were aggregated to measure team power distance. Response options ranged from "strongly agree" to "strongly disagree" on a five-point Likert scale. An example item reads: "Leaders must often use authority and power when dealing with other team members." A Cronbach's alpha was calculated across all five milestones to measure the internal consistency reliability of the scale. The coefficient alpha of the power distance scale was $\alpha = .77$, indicating that the scale was reliable. The scale is shown in Figure 2 of the Appendix.

The measure for team performance was developed in consultation with two external stakeholders. These were faculty members who had experience in the video game industry but were not involved with grading the students during that semester. Student teams were rated after each milestone. As shown in Figure 3 (see Appendix), each team's performance was assessed for quality on a five-point Likert scale. These stakeholders independently rated all video game teams using this scale. Inter-rater reliability of the two external stakeholder raters was calculated by computing Kendall's coefficient of concordance. This study's results ($W = .74$, $p < .05$) indicated a high degree of agreement between the raters. These results were averaged across five milestones.

Qualitative Interviews

Interviews with the participants were conducted to give context to the quantitative data. No one was interviewed twice, and an attempt was made to interview people from different specialities to avoid getting a perspective biased by speciality. The interview questions sought to gather information on team trust, team power distance, or both. The interview questions corresponding to the two major variables are shown in Table 3.

Question	Value Studied
How have team dynamics changed over [x period of time] based upon peer evaluations?	Team trust and team power distance
How does your team hold each other accountable?	Team trust
How does your team handle conflict?	Team trust
How does your team handle setbacks?	Team trust
For your team, what is the decision-making process?	Team power distance
Does each team member have input in the decision-making process?	Team power distance

Table 3. Questions asked during interviews with the participants and their corresponding values.

Hypothesis Results (Quantitative Results)

Team Trust and Team Performance

Hypothesis 1 posited a positive relationship between team trust and team performance. The first two time periods indicated no significant relationship between each of these variables. In the third, fourth, and fifth time periods, there was a significant positive relationship between team trust and team performance ($p = .69$, $p < .05$). Therefore, the hypothesis that team trust and team performance have a positive relationship was accepted. As shown in Table 4, starting in the third

time period and continuing through the end of the project, teams that showed high trust also exhibited high performance.

Time Period	Correlation Between Team Trust and Team Performance	Significance
Time Period 1	.257	NS
Time Period 2	.260	NS
Time Period 3	.734	P<.05
Time Period 4	.681	P<.05
Time Period 5	.664	P<.05

Table 4. Spearman's correlation between team trust and team performance.

Team Power Distance and Team Performance

Hypothesis 2 posited a negative relationship between team power distance and team performance. As illustrated in Table 5, there was no significant relationship between these two variables in any of the five time periods. Therefore, this hypothesis was rejected.

Time Period	Correlation Between Team Power Distance and Performance	Significance
Time Period 1	-.244	NS
Time Period 2	.269	NS
Time Period 3	.338	NS
Time Period 4	.286	NS
Time Period 5	.499	NS

Table 5. Spearman's correlation between power distance performance.

Discussion

We assembled data in Table 6 to facilitate our understanding of our qualitative data. We identified factors related to team trust and team power distance, such as structure, criticism, and decision-making from interviews with various team members.

	Low Team Trust	High Team Trust
Low Team Power Distance	• Unclear **structure** of role delineation • Avoidance of constructive **criticism** • **Decision-making** by heated debate	• **Structure** of role flexibility • Constructive **criticism** • **Decision-making** by informal discussion
High Team Power Distance	• Unenforced **structure** of clear role delineation • Avoidance of constructive **criticism** • **Decision-making** by reliance on leader and external authority	• Clear **structure** of role delineation • Constructive **criticism** given by leader • Leader as primary **decision-maker**

Table 6. Interview compilation regarding structure, criticism, and decision-making.

Low Team Trust, Low Team Power Distance

As shown in Table 7, teams with both low trust and low power distance lacked role delineation. For example, one interviewee described a chaotic environment in which team members intermittently attempted to overrule each other. The artists would argue with programmers about a particular design issue, and they would be interrupted by a level design colleague who would try to impose a solution that both thought would not work. These teams also avoided constructive criticism. Additionally, interviewees stated that negative comments were not expressed because they did not want to damage team cohesiveness. To paraphrase one respondent: "Reviews were worthless because no one wanted to say bad things about others." Members did not want to hurt the feelings of others because they had to work with them throughout the experiment. Interviewees were more likely to characterize their decision-making process as a heated debate over rules and team structure, as opposed to problem solving. Several interviewees cited long, unproductive conversations around minor task issues that were used to establish their power bases.

	Structure	Criticism	Decision-making
Low Team Trust, Low Team Power Distance	Unclear structure of role delineation	Avoidance of constructive criticism	Decision-making through heated debate

Table 7. Overview of behaviors associated with low team trust, low team power distance teams.

Low Team Trust, High Team Power Distance

As shown in Table 8, teams with low trust but high power distance had clear but unenforced role delineation. Team members understood their roles, but occasionally performed other roles even when doing so impacted speed of delivery. These teams avoided constructive criticism that would have led to confrontation. For example, one team member offered a process for following up on tasks, but said that the team members rejected their suggestion. In another instance, a member refused to show their work when asked, leading to uncertainty and intra-team conflict. In essence, team members had conflicting goals and so were actually working against each other. Regarding decision-making, these teams generally relied on a leader. On multiple occasions, these teams also contacted the external stakeholders for mediation on difficult decisions or situations, such as a team member consistently underperforming. Instead of confronting unproductive colleagues, they sought advice from the faculty member in charge of the class. This led the team to attribute any decision to the faculty member.

	Structure	Criticism	Decision-making
Low Team Trust, High Team Power Distance	Unenforced, clear structure of role delineation	Avoidance of constructive criticism	Decision-making by reliance on leader and external authority

Table 8. Overview of behaviors associated with low team trust, high power distance teams.

High Team Trust, Low Team Power Distance

As shown in Table 9, teams with high trust but low power distance used flexible roles to complete their tasks. Although one interviewee discussed utilizing a RACI chart (i.e., a chart used to articulate areas of responsibilities, accountabilities, consulting, and informational roles), interviewees on high trust, low power distance teams were more likely to state that they helped others wherever they could. Interviewees described an environment in which team members were able to give and receive accurate, actionable feedback. One interviewee stated that this had a direct positive effect on the quality of the assets, design, and implementation. According to interviews, these teams generally arrived at decisions via open discussions, and group consensus was highly valued. Leadership responsibilities continually shifted as the work changed and as the team faced new challenges. Transparency enabled member integration. In these teams, members developed habits and practices that guided their behavior. For example, they ate lunch together and shared stories about how they came to SMU. Members also transmitted certain practical solutions to solving problems. Team

members developed implicit messages about how to solve issues before they became dysfunctional.

	Structure	Criticism	Decision-making
High Team Trust, Low Team Power Distance	Structure of role flexibility	Constructive criticism	Decision-making by informal discussion

Table 9. Overview of behaviors associated with high team trust, low team power distance teams.

High Team Trust, High Team Power Distance

As shown in Table 10, teams with both high trust and high power distance had clear role delineation. In these teams, each person worked within a single, broadly defined role for the entire experiment. One interviewee stated that their team became more assertive in its member roles because of peer feedback. Members of these teams constructively criticized each other. The leader often initiated this process. Finally, interviewees in these teams described leaders as the primary drivers of decision-making. In one team in particular, the leader indicated that they made the final decision 70% of the time.

	Structure	Criticism	Decision-making
High Team Trust, Low Team Power Distance	Clear role delineation	Constructive criticism given by leader	Leader as primary decision-maker

Table 10. Overview of behaviors associated with high team trust, high team power distance teams.

Group Development Sequence Overview

In order to understand our results, Tuckman and Jensen's (2010) four stages model was used to guide our thinking. We previously described these four stages as forming, storming, norming, and performing. Teams normally progress through these four stages and no particular period of time is needed for a team to progress from one stage to the next. These four stages correspond with a group's structure and task-activity. In Tuckman and Jensen's model, group structure refers to interpersonal interactions between members, while task-activity refers to member interactions as related to accomplishing goals and completing tasks.

In the first stage, forming, group members test the interpersonal boundaries of group structure as well as the task boundaries of the task-activity realm. This generates an organizational structure in the form of dependency relationships with leaders and/or other group members. In

this stage, the group is considered dysfunctional because members often overstate the abilities of the team to solve problems due to their pride and excitement (Tseng & Ku, 2011). To paraphrase what members told the researcher: "We can easily make all deadlines because this is easy."

In the second stage, storming, conflict arises and negatively affects task-activity. Conflict is characterized by a lack of group unity (group cohesiveness) and confusion over task requirements. Members do not inform each other about issues of concern, but rather try to work through these issues in isolation. Members meet their own obligations (e.g., to do lists) rather than focusing on the team's objectives. There is often a challenge to the leader's authority to make decisions. Members told the researcher: "No one knows what's going on. It's total confusion. We need to get going."

Eventually, through developing cohesion and establishing clear standards and roles, groups enter the third stage: norming. The behavioral norms established in the norming stage result in improved rates of task completion. In the final stage, performing, groups leverage their interpersonal relationships to improve the task-activity realm by resolving their structural issues. Groups in this stage experience significantly higher cohesion and task completion than those in previous stages. Table 11 illustrates how the model functioned in relation to the video game development teams in this study.

Time Period	Correlation Between Team Trust and Performance	Significance	Stage of Development Predicted by Data
Time Period 1	.257	NS	Forming/storming
Time Period 2	.260	NS	Forming/storming
Time Period 3	.734	P<.05	Norming
Time Period 4	.681	P<.05	Norming
Time Period 5	.664	P<.05	Norming/performing

Table 11. Relationship between performance and team development stages.

Forming

The quantitative data indicated no relationship between team trust and team performance for both the first and second periods of this study. This was expected since teams in their forming stage often exaggerate their collective positive qualities (Tseng & Ku, 2011). One of the teams was disbanded at the end of the second period due to low performance. As typically seen in the forming stage, this team overstated their scores; they reported high team trust even though interviews indicated that they experienced low trust and feared asking for help.

Storming

The progression through Tuckman and Jensen's (2010) stages varied by teams. Some teams remained in the forming or storming stage during the first and second milestones, while others moved quickly to the norming stage. A team was disbanded while in its storming stage because this team's behavior fell below what the evaluators felt was necessary to meet a milestone. Based on the interviews, this team operated with low team trust behaviors, frequent arguments, and an inability to make efficient timely decisions. One interviewee described a pattern of members arriving late and unprepared. These members did not fraternize with each other at lunch or during informal events held at school.

Norming

In this study, the significant increase between team trust and team performance in the third period likely indicates that many teams were transitioning into the norming stage. The reality of the two non-performing teams being disbanded may have accentuated and accelerated the need for development of cohesion on the remaining teams. According to interviews, the third time period saw an increase in constructive criticism and sharing of personal problems—two elements of the norming stage according to Tuckman and Jensen's (2010) model.

Performing

There was limited evidence suggesting that teams entered the performing stage. The correlation between team trust and team performance did not change significantly across all time periods. More than three months may be needed for teams to transition into their performing stages.

Relationship Between Team Trust and Team Performance

Between time periods one and five, the positive relationship between team trust and team performance increased significantly. This suggests that team trust covaries with team performance in video game development teams. In this study, high trust teams used constructive criticism to solve problems. This led to increased accountability and fewer unnoticed errors, which are expected benefits of a psychologically-safe, high-monitoring environment. In order to improve performance, managers in video game development teams should prioritize the establishment of team trust. In practice, this can be achieved by holding open discussions about trust, acknowledging fallibility, and modelling curiosity (Edmondson, 2018).

Team Power Distance and Team Performance

Consistent with research in other fields (e.g., Cole, Carter, & Zhang, 2013; Hu & Judge, 2017; Schauboeck, Lam, & Cha, 2007), neither high nor low team power distance was significantly related to team performance. Although both low and high team power distance teams

operated with differing managerial protocols regarding structure and decision-making, variance in these protocols did not affect team performance. Low team power distance teams had flexible roles, while high team power distance teams had clear role delineations.

We anticipated a negative correlation between team power distance and team performance due to the highly collaborative nature of video game development. However, this was not manifested as predicted. It is possible that trust here functioned as a substitute for structure. While structure utilizes formal hierarchical relationships to achieve goals, trust emphasizes building interpersonal alliances to achieve goals. If team members trust each other to complete tasks, the need for structure is lessened. The ability of team trust to act as a substitute for organizational structure has been corroborated by other research that identified psychological safety as the most important factor setting apart successful and non-successful teams in a similar field (e.g., Cooper et al., 2018; Edmondson, 2018). These findings further indicate that video game development managers should work to establish trust at the outset of team development.

Conclusions and Further Research

Several conclusions can be drawn from this study. Firstly, power distance among team members does not affect team performance but does appear to affect trust. During this experiment, members of high power distance teams accepted the mechanistic structure developed by team leaders to accomplish the tasks, but this had a negative impact on members' perceptions of trust. High power distance teams had members who were not collaborative but were submissive to the leader to get the task accomplished. Secondly, trust takes time to develop. In the early stages of group development, trust was not related to performance. Once the members developed a collaborative relationship among themselves and found themselves able to speak up about their concerns, there was a strong relationship between trust and performance. As a part of the learning process, team leaders should elicit feedback and listen to the ideas and concerns of their members. Another integral part of the team leader's job was to remind the team of what performance metrics the team needed to reach in spite of workflow uncertainties, tight deadlines, newness of all members to the team, and interdependency of team members.

In our study, each team had only one member representing each speciality. In many companies, each project director has their own budget and often attempts to recruit "rock stars" to work on their project. This could exacerbate the differences in power distance and its dysfunctional consequences on performance. The intra-team politics that are evidenced in many companies were not studied in our experiment. For example, employees are usually dependent on their managers for promotions and want to please them. A focus on pleasing one's

manager, however, could mean that confronting the manager with discouraging facts could have negative results on one's career.

Another limitation of this study is the duration of three months. In the video game industry, most projects last significantly longer. As such, there is an opportunity to explore the effects of trust and power distance on teams with longer life cycles, including progression into their performing stages in light of Tuckman and Jansen's (2010) model.

Finally, research should be conducted on teams with more varied experience, and greater attention to the composition of the team should be paid. Power distance has been found to affect women's attitudes and behavior to a greater extent than men in high power distance situations. In these situations, a woman's status position in a team is more likely to be challenged than a man's (Cooper et al., 2018). High power distance teams often make it more difficult for women to obtain and hold high status positions (Hofstede, 1980; Simmons et al., 2019).

In the forming stage, team members often focus on defining goals and developing procedures for performing their jobs. Members often keep their feelings to themselves, are kind and polite, and try not to be disruptive to their team. When team members receive discouraging feedback on their progress, a sense of urgency develops, and members may drop old patterns of politeness. Power plays, ingratiation activities, and other dysfunctional behaviors may occur as pressure for team performance becomes more acute. Unfortunately, our experiment did not last long enough for these dysfunctional behaviors to occur. Members of our teams were all new to both each other and the school. It is possible that experienced teams react differently depending on both the length of time members have been together and historical team performance. If the experiment had been conducted with second-year students, for example, many of the students would have had already formed relationships out of the classroom that may have impacted how they manage interpersonal relationships within their team. Further exploration of these variables stands to establish a rich body of knowledge specific to video game development teams.

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Appendix

Please indicate the extent to which you agree or disagree with each statement.

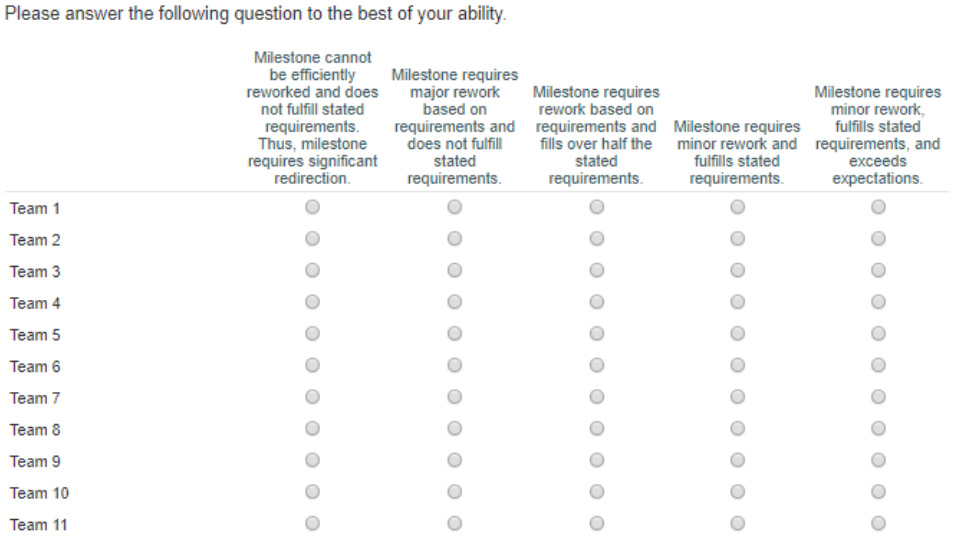
	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
I am able to count on my team members for help if I have difficulties with my job.	○	○	○	○	○	○	○
I am confident that my team members will take my interests into account when making work-related decisions.	○	○	○	○	○	○	○
I am confident that my team members will keep me informed about issues that concern my work.	○	○	○	○	○	○	○
I can rely on team members to keep their word.	○	○	○	○	○	○	○
I trust my team members.	○	○	○	○	○	○	○
In this team we check on whether all members meet their obligations to the team.	○	○	○	○	○	○	○
In this team we watch to determine if all members complete their work on time.	○	○	○	○	○	○	○
In this team we keep close track of whether all members perform as expected.	○	○	○	○	○	○	○
In this team we check on whether all members are doing what is expected of them.	○	○	○	○	○	○	○
In this team we carefully monitor each other's work-related progress.	○	○	○	○	○	○	○
The members of my team work as hard as they can to achieve the team's objectives.	○	○	○	○	○	○	○
Most members of my team carry their fair share of the overall workload.	○	○	○	○	○	○	○
Most members of my team make an effort to attain high performance levels.	○	○	○	○	○	○	○
Even when expecting setbacks, team members try to the best of their ability to realize team goals.	○	○	○	○	○	○	○
Most team members go out of their way to accomplish team objectives.	○	○	○	○	○	○	○

Figure 1. Team trust survey.

Please indicate the extent to which you agree or disagree with each statement.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Leaders should make most decisions without consulting other team members.					
Leaders must often use authority and power when dealing with other team members.					
Leaders should seldom ask for the opinions of other team members.					
Leaders should avoid off-the-job social contact with other team members.					
Team members should not disagree with decisions made by leadership.					
Leaders should not delegate important tasks to other team members.					

Figure 2. Power distance survey.



Please answer the following question to the best of your ability.

	Milestone cannot be efficiently reworked and does not fulfill stated requirements. Thus, milestone requires significant redirection.	Milestone requires major rework based on requirements and does not fulfill stated requirements.	Milestone requires rework based on requirements and fills over half the stated requirements.	Milestone requires minor rework and fulfills stated requirements.	Milestone requires minor rework, fulfills stated requirements, and exceeds expectations.
Team 1					
Team 2					
Team 3					
Team 4					
Team 5					
Team 6					
Team 7					
Team 8					
Team 9					
Team 10					
Team 11					

Figure 3. Performance survey.