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# Exploring Game Leadership and Online Game Community

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***Abstract*—Online games have become a major leisure activity in recent years. Players go through a variety of social experiences, building up game communities such as guilds, blood pledges, and other small teams in virtual worlds. Game communities offer similar organizational experiences to those in real life. The game environment works as the third place where we can learn and develop our leadership skills. However, so far, not much research has been done in this area. This study examines the relationship between game players' usage behavior focusing on game community participation and game leadership. A total of 808 South Korean online game players participated in an online survey during one week. The results show that game community participation, team play, and the active attitude in accomplishing the mission of a game were positively related with game leadership. The outcome of this study provides a new perspective on the online game community to expanding our social experiences and improving game leadership in the virtual world.**

***Keywords-Online Games, Game Leadership, Game Community, Game play style***

## I. INTRODUCTION

Nowadays, online games have emerged as a popular leisure activity that everyone can enjoy. When playing online games such as MMORPGs (massively multiplayer online role-playing games), players engage in a variety of social interactions, and it affects their social and communication skills [1]. In this information society, e-leadership could be useful when a task is performed through information technology. Even if communication between a leader and followers takes place via information technology, it could surely be as inspiring as it is in real life [2][3].

Online game guilds have a hierarchical leadership structure that enables game players to complete the missions in groups [4]. Game players perform organizational and strategic activities as similar as ones in real-life: recruiting, assessing, motivating, rewarding, and retaining team members [5]. For example, in our work place and school we make teams and deliver the tasks together, and game players also cooperate with other players within their own sub guilds. The process of delivering projects in a team-based system is quite similar to that of accomplishing missions in a team-based guild system. The online game environment possibly becomes a third place for people to improve their leadership skills. In this regard, online games could be an efficient tool for game players to develop their own leadership skills and engage in enriching holistic leadership experiences. Even though several academic researchers mentioned the possible relationship between online games and improving leadership skills, not much research has been conducted yet [6][7][8]. This study explores game community and game players' leadership experiences with an empirical approach.

## II. THEORETICAL BACKGROUND

### A. Online Games and Game Leadership

Online games not only have fantasy-like attributes, but also reflect real life, which is why games have been used as an educational tool for many years. Many educators agree that virtual environments, including MMORPGs are able to support education and address potential research issues. Those issues include leadership, collaboration, virtual teaming and so on [9] [10].

When enjoying online games, there might be a chance that a certain level of leadership be triggered while going through various kinds of events. If a player belongs to a community, he/she gains more exposure to leadership-improving opportunities by interacting with other players. In this article, we defined a term community as a group where people gather to exchange information and build social relationship using the same online games. In general game community includes guilds, blood pledges, and other similar virtual teams. Our research explores the relationship between game communities and game leadership. In order to find out, we developed a game leadership scale measuring what kinds of leadership experiences that game players undertake while playing games. The scale is based on the MLQ (Multifactor Leadership Questionnaire) leadership scale that Bass and Avolio made [11][12].

### B. Hypotheses

This paper investigated the positive relationship between game communities and game leadership. In this research, game community means certain groups that people organize to achieve common goals. This includes guilds, blood pledges,

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small teams, and so on. We had several research questions: 1. Does a game community group require higher game leadership than a non-game community group? 2. If it does, does participation level influence game leadership? 3. Does a team play group require higher game leadership than individual play group? 4. If it does, among team play group members, do active players have higher game leadership than passive players? We basically assumed that the game community group would require higher game leadership than non-game community group and that the team play group would require higher game leadership than the individual group. An active attitude towards playing games and completing the mission could also affect game leadership. The hypotheses are as below.

H1: Game community group in game leadership is higher than non-game community group.

H1a: Game players' level of game community participation will affect Game Leadership.

H2: Team play group in game leadership is higher than individual play group.

H3: Game players' attitudes on accomplishing the mission of game will affect Game Leadership.

## III. METHODOLOGY

### A. Measures

The questionnaire consists of demographics, game usage behavior, community participation, previous leadership experience, and game leadership. Since there was no established scale for previous leadership experience and game leadership, new items to measure them based on the theories of transformational leadership were developed. The game leadership scale has a total of 30 items and was verified three times by experts and a group of online game users. Examples of these items include the following. "When playing games, I used to talk to other players enthusiastically about what needs to be accomplished," "I express confidence that goals will be achieved," "I suggest other players new ways of looking at how to complete the mission", and so on.

The scale used a five-point Likert response format ranging from 1 (strongly disagree) to 5 (strongly agree) in which a higher motive score means stronger agreement. Game leadership scale is originally based on the MLQ (Multifactor Leadership Questionnaire) leadership scale that Bass and Avolio developed [11][12]. Each item deals with specific game experience that might potentially improve game leadership. According to the validity test results, Cronbach's Alpha was .942. And this figure is relatively high level so that the scale showed high validity as game leadership scale.

### B. Date Collection

The data were collected from April 10 though April 17, 2008. During one week 820 South Korean online game players participated in an online survey, in which they were required to complete a questionnaire. The average time to complete a questionnaire was under 20 minutes. Of the 820 respondents, only those with complete answers were included for analysis. Total 808 samples were used for final data analysis.

## IV. ANALYSIS

### A. Demographics and Usage Behavior

Of the final 808 respondents, 434 were male (53.7%) and 374 were female (46.3%). Over half of players (55.0%) were under 31 years old (14.7% of the sample were aged 16-19, with 30.3% of the sample aged in their 31-40). In occupation, large numbers of the participants were undergraduate and graduate students. Office workers were the second largest group of the sample (23.5%). In education, over three-quarters of the players (77.8%) were currently university students pursuing for an undergraduate qualification or already had one. The remainders had schooling up to 16-19 years of age (22.2%).

Based on the sample's game usage profile, their average time-spent on online games per 1 time was 129.3 minutes. 37.5 % reported that they enjoy online games less than 2 times a week. 35.8 % played online games 3-4 times a week. Rest of them used online games more than 5 times a week (26.7%). Weekly average was 456.7 minutes and it was about 7 hours and 37 minutes. Purpose of joining game communities was mainly for socializing (53.6%). Being able to group together (19.5%), exchanging items and information (15.7%) and to improving game level (6.1%) was also one of the important reasons.

### B. Game Community and Game Leadership

According to descriptive analysis results, among 808 participants one-third of players belonged to the game community (36.3%) and two-thirds of them did not belong to any of those communities (63.7%). More specifically, players reported the mean time they had been joining was 25.4 months. Some players had been joining more than 5 years (13%). When it comes to community size, a quarter of players (24.6%) reported they are in '11-20 member groups' ('fewer than 10 members (21.8%)', 'larger than 50 members' (19.5%), and so on). Meanwhile, some players belonged to a large scale of community which had more than a hundred of people. The remainders were in a huge group that has more than a thousand of people (3.1%).

Before analyzing the data we controlled the previous leadership experience in real life because this research does not compare the differences between online leadership and offline leadership. Rather we tried to focus on how general game players exhibit differences according to their game play profile. In order to verify the H1, we asked the question: "Do you belong to any of game communities, such as guilds, blood alliances, small teams, and so on?"

TABLE I. GAME COMMUNITY PARTICIPATION AND GAME LEADERSHIP

| Game Community | Cases (N=808) | Game Leadership (M) | S.D. | t value |
|---|---|---|---|---|
| Belonged | 293 | 3.47 | .61 | 4.743*** |
| Not Belonged | 515 | 3.25 | .65 | |

*$p<0.05$, **$P<0.01$, ***$p<0.001$

According to the t-test, the results exhibited that game community group had a higher average game leadership score (3.47) than non-game community group (3.25).

### C. The level of Community Participation and Game Leadership

Joining game communities and actually participating enthusiastically are a different matter, so we asked another question: "How actively do you participate in the game community?" ranging from 1 (strongly disagree) to 10 (strongly agree). Then we divided the game community group sample into the following three sub-groups according to their game community participation level: high, middle, low. Table 2 is the ANOVA test results on the level of game community participation and game leadership.

TABLE II. GAME COMMUNITY PARTICIPATION LEVEL AND GAME LEADERSHIP (ANOVA)

| Participation Level | Cases (N=293) | Game Leadership (M) | S.D. | F value |
|---|---|---|---|---|
| High | 93 | 3.72 | .59 | 14.797*** |
| Middle | 169 | 3.38 | .57 | |
| Low | 31 | 3.15 | .63 | |

*p<0.05, **P<0.01, ***p<0.001

The results indicated that high participation group had a higher average game leadership score (3.72) than low participation group (3.15). It means the more actively people participated in the game community, the higher game leadership experiences they achieved.

### D. Game Play Style and Game Leadership

In this research, game play style can be described as a game play pattern, including team play and individual play. We assumed that if people enjoy online games with other people in teams, they might go through a greater number and variety of social interactions than those who enjoy online games individually. In order to find out the game leadership differences between the team play group and individual play group, we used the t-test.

TABLE III. GAME PLAY STYLE AND GAME LEADERSHIP (T-TEST)

| Play Style | Cases (N=806) | Game Leadership (M) | S.D. | t value |
|---|---|---|---|---|
| Team play | 463 | 3.48 | .55 | -7.974*** |
| Individual play | 343 | 3.12 | .69 | |

*p<0.05, **P<0.01, ***p<0.001

The results indicated that the team play group had a higher average game leadership score (3.48) than the individual play group (3.12). People who prefer team play gain more leadership experience than who prefer individual play.

### E. Attitudes on AccomplishingThe Mission of Game and Game Leadership

When playing online games in teams, game players are required to cooperate and compete with others to achieve certain public goals. Even in team activities, individual players could be either enthusiastic or relatively passive, depending upon their personal traits. In addition to the previous two assumptions, we also assumed that people with a more active attitude in team play will have different level of leadership experiences. We asked another question to only the team play group: "How actively do you participate in accomplishing the missions?"

TABLE IV. ATTITUTEDS ON ACCOMPLISHING MISSION OF GAME AND GAME LEADERSHIP (T-TEST)

| Attitudes | Cases (N=465) | Game Leadership (M) | S.D. | t value |
|---|---|---|---|---|
| Active | 231 | 3.63 | .52 | -6.106*** |
| Passive | 234 | 3.33 | .55 | |

*p<0.05, **P<0.01, ***p<0.001

Table 4 is t-test results explaining that the active play group had a higher average game leadership score (3.63) than the passive play group (3.33).

## V. RESULTS AND DISCUSSION

Firstly H1 and H1a were supported. According to the t-test and ANOVA results, people who belonged to communities showed higher game leadership experiences than those who did not. Also, people who actively participated in game communities showed higher game leadership experiences. It means there could be a positive relationship between participating in game communities enthusiastically and game leadership. Secondly, the team play group had higher average game leadership experiences than the individual play group, so H2 was confirmed. Lastly, H3 was also supported because people who actively participated in completing the mission and tasks exhibited higher game leadership experiences than those with a passive attitude.

It is said that an online game is an expansion of reality that provides rich social interactions for players. MMORPG players' experiences in organizational and strategic environment possibly enabled them to acquire certain leadership skills in the virtual worlds. This finding provides an insight on games' positive effects in terms of improving game leadership and other possibilities of game use. Also this study supports the positive relationship between online game experiences and real-life leadership improvement proposed by Yee's research (2006) [6]. In order to find out leadership skill transfer from game leadership experience to real-life leadership role, further research should be conducted as well.

Even though there are a lot of leadership theories and research, leadership itself is still a rather ambiguous concept, and various discussions about leadership studies are ongoing at the moment. It is quite difficult to measure intangible leadership experiences. Measuring them through online surveys and relying largely on self-reporting is another limitation. Furthermore, this survey only targeted South Korean online game players. In order to generalize about the outcome of the study, we need to deliver the survey internationally.

## REFERENCES


[1] A. Papargyris, A. Poulymenakou, "Learning to fly in persistent digital worlds: The case of massively multiplayer online role playing games", SIGGROUP Bulletin, vol. 23, no.1, 2004, pp.41-49

[2] B.J. Avolio, S.S. Kahai, "Adding the "E" to e-leadership: How it may impact your leadership", Organizational Dynamics, vol 31. issue 4. January 2003, pp.325-338

[3] B.J. Avolio, S.S. Kahai and G.E. Dodge, "E-leadership Implications for theory, research, and practice", The Leadership Quaterly, vol.11, issue 4, Winter 2000, pp.615-668

[4] C.H. Chen, C.T. Sun, and J. Hsieh, "Player guild dynamics and evolution in massively multiplayer online games", CyberPsychology & Behavior, vol. 11, no. 3, 2008, pp.293-301

[5] B. Reeves, T. W. Malone, and T. O'Driscoll, "Leadership's online labs", Harvard Business Review, May 2008

[6] N. Yee, "The demographics, motivations, and derived experiences of users of massively multi-user online graphical environemnts", Presence, vol. 15, no. 3, June 2006, pp.309-329

[7] N. Yee et al, Avatars at Work and Play, Springer Netherlands, 2006

[8] N. Ducheneaut, R.J. Moore, "More than just 'XP': learning social skills in massively multiplayer online games", Interactive Technology and Smart Education, vo.2, issue 2, 2005, pp.89-100

[9] M.D. Childress, R. Braswell, "Using masstively multiplayer online role-playing games for online learning, Distance Eduation", Distance Education, vol. 27, no. 2 , August 2006, pp.187-196

[10] S. D. Freitas, M. Griffiths, "Online gaming as an educational tool in learning and training", British Journal of Educational Technology, vol. 38, issue 3, 2007, pp.535-53

[11] B.M. Bass, B.J. Avolio, MLQ Multifactor leadership questionnaire, Mind Garden, Redwood City, 2000

[12] B.M. Bass, Leadership and performance beyond expectations, Free Press, New York , 1985