

The Impact of Learning Motivation on Continuous Use in the Mobile Game - Focusing on Chinese Mobile Game <King of Glory>

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Abstract: *In this study, an investigation was conducted into the influencing factors for the learning motivation of players in the game, including experience, vicarious experience, the need of achievement, the need of power, and mastery motivation. Then, a discussion was conducted regarding the role played by learning motivation, learning performance, and satisfaction with continuous use. A survey was conducted with 519 players, most at the intermediate gaming level in <King of Glory>. As demonstrated by the results of this study, experience, vicarious experience, the need of power, and the mastery of motivation have significant positive association with the players' motivation of learning the game. Learning performance and satisfaction have a positive impact on the continuity of use. Additionally, the correlation between the need of achievement and learning motivation is insignificant. Overall, the research results confirm the significance of the social-cognitive theory relative to the learning motivation. Players began to transform, satisfied with their achievements in the game, as well as gradually evolving toward self-improvement to achieve satisfaction. It offers a new explanation and crucial reference for mastering the gaming trend among the contemporary players.*

Keywords: MOBA; player learning motivation; player performance; continuance use

1. Introduction

With social development, people's needs are made increasingly diversified, and they receive the required information through different channels. As the gaming industry grows rapidly, professional game players and E-sports also emerge. As revealed by the global E-sports market report from Newzoo, a rotten Market Research Organization, the global E-sports audience will rise up to 441.3 million this year, including 197.9 million E-sports enthusiasts and 245.2 million leisure audiences. Among them, 50% of <dota2> players focus exclusively on playing games and never watch related e-games, while 46% of the fans of <King of glory> not only play games but also watch e-games. In respect of the gaming market in China, <King of glory> has achieved the top ranking in the number of downloads and game revenue for years. Under this context, people are not only obsessed with the application of skills in the game, but also take participation in goal achievement, interaction and other activities as part of the game played [1]. <King of glory> refers to a mobile game launched by Tencent. The game is aimed at defeating the enemy's Tower in teams for the final victory. At the start to each game, the player's level will be restored to 0, and in the game, upgrade will be made through the game characters chosen by the player for hunting and killing of the monsters showing up in the game, to get monetary rewards, while killing the enemies.

At the time of choosing the game, players need to consider various aspects, as they will encounter many difficulties and obstacles prior to playing the game, for example, learning obstacles, costs and so on [2]. In the learning process of games, the perceived ease of playing, content quality and the likes will impact on game flow positively, and motivate players to carry on with the game [3]. Besides, game loyalty need to be enhanced through social interactions, skills, and challenges [4]. It is an instinct to resolve problems, and game serves as

a tool to make human thinking externalized [5]. The game is considered as a problem-solving process [5-7]. Resolving game-related tasks and overcoming game-related challenges are closely associated with the fun derived from game playing [8]. The game layers are endless and there are different choices, which gives rise to a critical issue, that is, how to enhance the sustained use of the game. In order to solve the problems, it is necessary for players to acquire the relevant game knowledge and skills to accomplish the game mission or secure victory. As the Internet is popularized, people can gain access to useful information that could meet their individual needs. For example, online game strategies and game skill videos are shared and referenced by players on a frequent basis. Through the study and practice of game character and get a good feedback that player's expected about their performance. Game players take enjoyment from their performance to carry on playing the game, which is what this study focuses on. From a learning perspective, this study offers explanation as to the learning motivation of players in the game, and demonstrates that the process of repeated practice and enhancement of learning motivation as well as individual performance have positive effects on the intention of continued playing of the game. In Reference [9], it is argued that once explained that in the absence of standards, people will assess their capabilities by making social comparison at the most basic level. Such feedback stems from direct comparison against others. There is an objective standard for the assessment of players, which plays a significant role in assessing their individual ability or giving recognition to their crucial existence. Standards assist players in determining the outcomes of their repeated practice and improvement, which could make a positive impact. It provides some inspiration from the perspective of game development.

2. literature review

2.1 Self-efficacy and learning motivation

Self-efficacy refers to the extent of self-confidence in whether people apply their skills to perform a task, and makes a positive impact on individual effort and persistence [10]. Besides, self-efficacy can be referred to as a judgement of whether a specific task is effective [11]. In general, self-efficacy represents a major influencing factor in the completion of tasks and objectives for learning [12]. In the game, the cycle of behavior and feedback is regarded as a significant symbol of game involvement, which could produce excellent learning outcomes [14]. According to Reference [15], the game is defined as a voluntary and free activity, which means players have willingness to learn in the game, such as the mastery of characters' skills, proficiency, etc. The positive results are frequently attributed to the skill to control the characters themselves. When players achieve an improved performance, their self-efficacy can be boosted [16].

Social-cognitive theory believes that self-efficacy is mainly derived from four aspects, which are experience, vicarious experience, verbal persuasion and physiological/effective states [12, 13]. Performance is considered as the most direct form to indicate the self-efficacy of an individual [17].

In self-efficacy, experience is regarded as the most direct and important source of self-efficacy. When people acquire successful experiences, they will have boosted confidence in the similar circumstances in the future [17].

Vicarious experience is premised on observing the success achieved by others, particularly when people of similar level become successful, other will believe that they can do it as well. Besides, it is necessary for the experience of observation to be applied in practice [12].

Verbal persuasion relies on verbal means to convince others of achieving something. It is purposed to make others confident that they are capable of success. physiological/effective state means the overall mental status that an individual is in, which includes whether he is ill or injured. It is very likely that physical pain and strong reaction exert influence on the judgment made by an individual of self ability. When the individual is in good condition, it will stimulate the memory associated with previous success, which is effective in the building of self efficacy [12, 13].

Under the context of research, the game is relatively independent in most cases. What motivates players to play games is usually considered to be fantasy, entertainment, outward attraction and other factors [18, 19]. Apart from the acquisition of certain game role skills from the game system, players will apply the network to play the relevant roles. Direct guidance is obtained by observing the way others play, and in order to demonstrate how the skill is applied, the model usually explains the method of use in steps [20]. Therefore, with regard to the selection of influencing factors, we choose the master experience and various experience as they tend to have a significant impact on self-efficacy, which in turn has a positive effect on academic performance (Cheng,

Shuyun, 2013). Players are frequent to wish for positive outcomes and performance in the game, and to have the hope of learning the manipulation and skills of characters, therefore :

H1a: Mastery experience has a positive effect on learning motivation .

H1b: Various experiences have a positive effect on learning motivation.

2.2 Need of achievement/power and learning motivation

Reference [22] demonstrated that proposed Need Theory and indicated that human motivation stems from three aspects, which are the desire for achievement, the need for power and that for affiliation. Need for achievement is defined as “the desire or tendency to do things and / or as well as possible” [23]. The need of achievement is purposed to succeed in a competition against some standard of excellence or for some standard of excellence. The need of power reveals an individual's expectation to lead others, teach others or influence others for progress. The need of affiliation is defined as developing, sustaining, or repairing a positive emotional relationship with others. Friendship is most reflective of this relationship.

Reference [24] demonstrated that people will feel strongly motivated by work, achievement, progress and growth in their workplace. Besides, for the reduction in employees' dissatisfaction, it is necessary to increase their sense of responsibility, provide promotion opportunities and create a favorable environment for personal growth to keep employees motivated and to enhance their enthusiasm about work [25]. In the academic field, when students acquire a certain knowledge or master skills, academic attainment tends to have a positive impact on the internal motivation for learning [26].

The need for academic attainment indicates the average score of the students when the journal is published. People with a stronger need in the field of workplace-related research will feel attracted by the work environment and impose influence on others in this environment [27]. The demand for job rank in the workplace is reflected and corresponding efforts are made to maintain it [28]. In the game, it is usually manifested in the process of setting up a team. Under the context of the king of glory game, it is played in teams, which means it can be played together with friends. For most of the time, however, the team is designated by the system on a random basis. Players can demonstrate their previous achievements prior to choosing to control the game character of the game. Players with a greater achievements will be granted more authority and even issue instructions to teammates at the time of playing. Such behavior conforms to the definition of need of power, and players are allowed to perceive the power within the team. The achievements and power that people need in reality will be reflected in the cyberspace, and their goals, desires and intentions will be manifested on the virtual characters [5]. In the game environment of King of glory, every game will be scored by the system based on the performance of the players, and a team Most Valuable Player Award (MVP) will be picked. It is assigned to the person with the most significant contribution to the process of gaming, which means the person hurting the most and killing many enemies in the game.

With regard to gaming, many scholars have raised the concept of "Avatar", which means that players take advantage of similar or favorite game characters to develop relationship with others. On a frequent basis, parasocial relationship is cited to explain how avatar relates to players [29, 30].and to reflect the strong desire of players to manipulate the avatar. Rights, status, and achievements have become the major accompanying factors for these concepts [18, 31]. Enjoyment is accepted when one's skills are matching with the task-related challenges, and enjoyment is also regarded as a sense of achievement [32].so:

H2a: The need of achievement has a positive impact on learning motivation.

H2b: The need of power has a positive impact on learning motivation.

2.3 Mastery motivation and learning motivation

Under the context of achievement goal theory, the emphasis placed on capability is what characterizes achievement motivation [33]. Achievement goals indicate what you expect to achieve and what you consider as achievement. Achievement goal orientation in achievement goal theory involves two aspects, which are different goal beliefs associated with academic attainment. It is classed into mastery goal and performance goal. Of them, mastery goal, which is also called learning goal, refers to the aim of learning for learners to acquire knowledge and develop skills. Students with mastery goal prefer the learning of new things and tend to judge success by comparing their previous achievements and so on [34, 35]. Performance goal is referred to as learners' viewpoint on learning purpose as making positive assessment of their own capability and averting negative assessment. For learning, achievement is defined as a good score for the high levels of recognition. It

is recognized that learning outcomes are comparable against others [36], and mistakes are deemed unacceptable [34, 35]. The study on mastery is usually conducted in such fields as sports and computer technology, with gaming included.

In the study of learning motivation, the mastery goal is viewed as a crucial factor that prompts intrinsic motivation and tends to have a positive impact on intrinsic motivation [37]. Intrinsic motivation is what learners find interesting in their own learning [38], and enjoyments are taken from the effective mastery or control of the environment [39, 40]. In addition, the learners hold a positive perception towards the content of learning. In the meantime, the scholars supportive of the incremental theory of capability hold the belief that efforts will lead to success and demonstrate a more adaptive model at the time of failure. Moreover, they strive to improve the strategy [34]. Dissimilar from extreme motivation, learners are unaffected by external rewards or penalties. They concentrate on the learning of content and skills [41, 42]. The game presents a virtual world that players desire to control and explore. Additionally, most players consider it as enjoyable to manipulate the game world. Player skill control represents a major factor in producing positive results and creating fun in the game [43, 44]. According to the social cognitive theory, goals are capable to improve performance outcomes [45]. In order for more satisfactory performance, it is assumed that the learning and mastering of the character's skills are significant influencing factors.

H3: Mastery goal has a positive effect on learning motivation

2.4 Learning Motivation and learning performance

In respect of education, learning performance is commonly defined as academic performance. The equivalent definition of learning performance is academic attainment, which mainly achieves scores through online tests and assignments, and is known as grade point average (GPA) [46]. Learning motivation is a crucial factor in the prediction of learning achievement. The more students take enjoyment from the challenges of learning motivation, the higher their learning achievement would be [47, 48]. The mastery goal is focused on the development of skills, with the focus placed on mastering and comparing advances [34]. This is highly similar to the Learning goal orientation and incremental theory of ability, both of which place their focal point on progress and growth [35]. Learning-goal-oriented employees believe that feedback carries more value and expect to receive feedback, that is, feedback seeking used to evidence how well one performs [49, 50]. In order to demonstrate your capability to others, you need to make judgment and prove it in some form. Individuals with a clear demonstrative goal orientation are supposed to have higher evaluation values for seeking feedback, as they consider seeking feedback as a way to assess their performance [49].

Feedback is significant to the support for motivation [51]. The trend of enhancing performance through feedback is on the rise [50]. Players will make assessment of their capability to master and challenge the game based on the feedback [40]. By comparing feedback and goal, the judgment and behavior of players are subject to influence. In case of a difference between the feedback and the score expected by the player, the player will put in more efforts to close the gap with the goal [14]. Individual progress is achieved through the acquisition of knowledge or skills, and the motivation of continued learning is sustained [52].

H4: learning motivation has a positive impact on satisfaction.

2.5 Learning performance, satisfaction and continuous use

Reference [14] demonstrated that is used to define the game as a cyclical, repetitive, and even addictive process. Players will play the game until they have finished this process. After a game cycle, that is, a cycle entailing user judgment, system, system feedback, user behavior, players draw on experience from such repeated practice and accomplish learning goals. From this perspective, it evidences that the active learning in the game is conducive to enhancing the intention of continuous use that users have [14]. Performance and satisfaction are frequently researched in the field of education and work [53-55]. In this paper, satisfaction is interpreted as the sense of achievement that players derive from the game he or she controls through their own learning to achieve a high score for satisfaction. In other fields, job satisfaction is defined in a similar way. Job satisfaction is explained by Kaliski as the staff members' sense of achievement and success [56]. Job satisfaction refers to a perception that work can satisfy not only material needs but also psychological ones. Employees' satisfaction primarily stems from the internal factors in a workplace, which are also known as motivators. The main variables of motivators include achievement, work itself, progress and growth [24]. Under the context of gaming, the player's control over the role is viewed as a similar concept of work skills, with progress, growth

and the corresponding achievements achieved in the game. Before that, an excellent performance is viewed as a significant factor in the improvement of satisfaction. There is a correlation between performance and satisfaction to some degree. Reward will be translated into satisfaction, while good performance will give rise to reward. Therefore, it can be inferred that satisfaction results from performance [53], while performance determines satisfaction (Porter and Lawler, 1968). Siegel endorses this view in the subsequent research on students [55]. For students, their academic attainments will have a major impact on their satisfaction and future performance over the course of acquiring knowledge or skills [57].

As for marketing, education and other related fields, satisfaction has a considerable impact on the continuance intention as well [58-60]. Students learn the course, then receive feedback, and draw comparison in the fairness of feedback, which relates to their scores and their efforts. The generation of satisfaction in case of conformity Students' satisfaction with the course will also influence whether to continue choosing the course [59-61]. Satisfaction will have influence on the recurrence of intent [62] Additionally, satisfaction has a positive effect on the intention of online gaming that takes place on socializing sites [63].

H5: Learning performance have a media effect between the relationship of learning motivation and continuous use.

H6: Satisfaction have a media effect between the relationship of learning motivation and continuous use.

3. Method

3.1 Research model

We propose a model that contains the game experience to explain why players continue to use the game. These factors are formed as players grow in the game. Figure 1 summarizes the research model proposed in this paper.

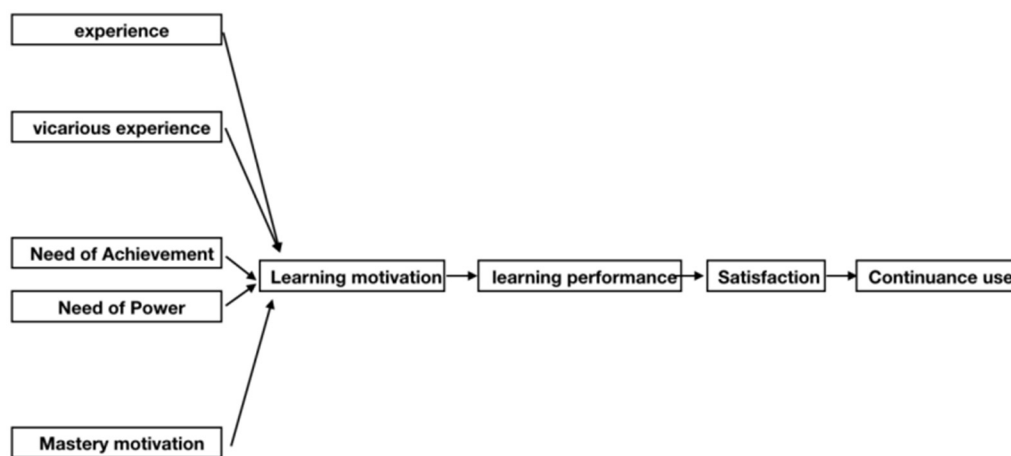


Figure 1. research model

Based on the <King of glory>, a targeted sampling method was applied in this study to distribute a questionnaire from the "King of glory" Weibo fans' topic activities. In the form of players with willingness to take participation in the survey actively clicking on the questionnaire link and answering, a total of 519 valid questionnaires were recovered. The online questionnaire is compiled by Chinese "Questionnaire star", which is a survey tool capable to automatically generate scales and links on the web page. It allows for convenience in the collection of samples from the Chinese market. The survey software allows only a single reply for each IP address, which is conducive to preventing repeated replies. The demographic information of the respondents is presented in Table 1. Our respondents were comprised of 254 women (49%) and 264 men (51%). More than half of the participants aged between 21 and 30.

The survey was conducted using five 5-point Likert scale, a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The experience and vicarious experience scales are premised on Bandura's self-efficacy question as altered [64]. Reference [65] shows basis of Need of Achievement and Need of Power. Reference [66] is the basis of Mastery motivation. Reference [67, 68] is the basis of Learning Motivation. This question

item is considered appropriate to determine the motivation for learning characters in the game (for example: I enjoy using the character in the game, so I want to understand more about using character). Refer to attachment 1 for details.

Table 1. Result of frequency analysis for demographic variables

Demographic	Variables	Frequency	%
Gender	Male	264	51.0
	Female	254	49.0
Age	10-20 years old	84	16.2
	21-30 years old	275	53.1
	31-40 years old	116	22.4
	41-50 years old	36	6.9
	Over 51 years old	7	1.4
	Education	Under high school	56
	High school	268	51.7
	Undergraduate	128	24.7
	Postgraduate	20	3.9
	Above postgraduate	46	8.9
Occupation	Student	140	27.0
	Company employee	214	41.3
	Company management	68	13.1
	Business operator	88	17.0
	Others	8	1.5
	Game Player Rank	bronze	33
	Sliver	69	13.3
	Gold	127	24.5
	Platinum	123	23.7
	Diamond	69	13.3
	Starshine	49	9.5
	King	28	5.4
	King of Glory	20	3.9
Channels to improve game operations	Watching game live	109	21.0
	Search related character	145	28.0
	Competitive game	86	16.6
	Teaching in game	111	21.4
	Personal training ground	52	10.0
	Others	15	2.9

4. Results

4.1 Reliability and validity

Explanatory factor analysis was conducted to validate the scale. In order to ensure that the characteristics of the data are suited to factor analysis, Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were performed.

Reliability refers to the reliability and consistency of the findings. In the measurement of the questionnaire, the reliability of the Cronbach's threshold is generally used to include the reliability of the subscales, which could indicate the reliability of the questionnaire used. The reliability Cronbach's α of the questionnaire is $0.985 > 0.9$, which indicates that the reliability structure of the questionnaire is fit for purpose. The KMO value of the validity coefficient of the questionnaire is $0.990 > 0.9$, which suggests that the validity structure of the questionnaire is satisfactory.

Table 2. Convergent validity testing results

Construct	Item	Factor loading	Cronbach's α	KMO
Experience	E1	0.725	0.684	0.651
	E2	0.811		
	E3	0.812		
Vicarious Experience	5	0.851	0.755	0.676
	6	0.770		
Need of achievement	7	0.836	0.873	0.831
	8	0.797		
	9	0.871		
	10	0.868		
Need of power	11	0.866	0.728	0.695
	12	0.875		
	13	0.871		
Mastery motivation	14	0.749	0.772	0.737
	15	0.819		
	16	0.819		
	17	0.832		
Learning motivation	18	0.781	0.899	0.911
	19	0.830		
	20	0.827		
	21	0.805		
	22	0.851		
	23	0.807		
Learning performance	24	0.900	0.874	0.737
	25	0.905		
	26	0.875		
satisfaction	27	0.863	0.850	0.729
	28	0.879		
Continuance use	29	0.890	0.891	0.749
	30	0.910		
	31	0.908		
	32	0.901		
All			0.968	0.985

4.2 Estimations of structural equation and hypotheses' results

AMOS was applied to analyze the structural equation model (SEM). As indicated by our model fit indices, the research model presents a good fit to the data. GFI of .822, PGFI of .704, PNFI of .775, AGFI of .792, NFI of .852, RMSEA of .075. It can be seen that the values of most fitting indexes are in excess of 0.7, and chi square / degree of freedom value = 5.983, which shows a significance level of 0.001, indicating that the fitting effect of the model is satisfactory.

At the significance level of 0.05, the findings provided strong support for all hypotheses, except for H2a (Need of achievement \rightarrow Learning motivation). Experience has a vitally important influence on learning motivation (LM) (PC = .43, $p = ***$). Vicarious experience has only a slight impact on LM (PC = .17, $p = ***$). Need of achievement shows no significant impact on LM (PC = .04,) and Need of power impacts on LM positively (PC = .19, $p = ***$). Mastery motivation has a significant effect on LM (PC=.31, $p=***$), LM has a

positive impact on learning performance(LP)(PC=.87, P=***), LP has a considerable effect on satisfaction(PC=1.01,P=***), and finally, the results demonstrate that satisfaction has a substantial effect on continuous use(PC=1.06,p=***). The path coefficients are listed in Table 3.

Table 3. Path analysis for SEM test

	Estimate	S.E.	C.R.	P
Learning motivation<---experience	0.439	0.112	3.931	***
Learning motivation<---Vicarious experience	0.174	0.018	9.449	***
Learning motivation<---Need of Achievement	0.046	0.202	0.230	0.818
Learning motivation<---Need of Power	0.196	0.019	10.584	***
Learning motivation<---Mastery motivation	0.312	0.104	3.004	0.003
Learning performance<---Learning motivation	0.876	0.068	12.887	***
Satisfaction<---Learning performance	1.019	0.079	12.889	***
Continuance use<---Satisfaction	1.060	0.076	14.012	***
Learning motivation<--Satisfaction	0.247	0.113	2.188	0.029
Continuance use<--learning performance	1.130	0.179	6.297	***

p*<0.05. **p<0.01. ***p<0.001.

5. Discussion and conclusion

5.1 Practical implications

First of all, the proposed model predicted the user's continuance use in an accurate way, and the survey sample of men and women basically reached half of the equilibrium and concentrated for the age bracket between 20 and 40, suggesting that competitive games cease to be exclusive to men. The distribution of each stratum exhibits relative uniformity as well, which leads us to believe that the samples have a very good distribution and popularity. Moreover, the research results obtained from this analysis also show a clearly meaningful reference value. Both personal experience and vicarious experience will have a positive impact on the learning motivation of players. Their voice and need of power in the team have a positive impact on learning motivation as well.

Firstly, the research results confirm that H1a, experience, has a positive impact on learning motivation. Successful experience has an enormous effect on learning motivation in a positive way. This result provides further evidence for the original theory which believes successful experience in the game will also boost confidence and play a positive role in further learning. In the <king of glory>, when players enter the game, they will usually receive guidance from the system teaching to carry out the whole game, which is often simple and easy to complete. Additionally, in the previous actual battles, novice players have a greater chance of winning, which allows for the quick accumulation of successful experience and the building of confidence. H2b vicarious experience will have a positive impact on players' learning motivation. In the current Chinese market, various social media or video platforms, such as Weibo, wechat and Bilibilibili, will present plenty of role operation videos in relation to the glory of the king. These videos are frequently recorded and edited by players with proficiency in character control. In the video, you can see the manipulation of numerous images of characters, along with the continuous killing of enemies and winning. There are few of the players recording the video to offer explanation of how to execute the trick and strategy of killing enemies in a row. It is easy for the viewers to derive a feeling that they can do it as well. The interest in learning game knowledge is reinforced, which leads to continuance use. In the meantime, watching a competitive game can also be treated as an alternative means of acquiring experience. The operation of competitive players and the collaboration between teams are excellent. The learning of new tactics is conducive to achieving success in the game, while there are other enjoyments taken from watching the game. Therefore, many players prefer such a way to improve their

learning of roles. From the description information of the survey sample, it can be seen that the longest choice for players is to learn from the game teaching and watch the live game.

The results of H2a study are different than previous studies. In Herzberg's research, achievements provide encouragement to employees in the workplace. In this study, the need for achievement fails to show significant impact on learning motivation. The reason why it doesn't work is that, on the one hand, there are many reward tasks in the game and they all have a hierarchical system. Therefore, the reward for getting promotion in the game is not as attractive to players as the other four factors. A majority of the players' focus has shifted to the process of experiencing the game, that is, their own experience, the vicarious experience they watch, the need for power to lead others and the mastery motivation of their own promotion process. H2b need of power has a positive impact on learning motivation as well. As the leader of the game team, it is necessary for the players to have refined game operation technology and achieve excellent performance, so as to persuade other team members to have belief in their own strategy or abide by their own command.

H3 mastery goal makes a positive impact on learning motivation. In the game, the process of making players' skill mature is mainly divided into two circumstances. Firstly, players can conduct role skill exercises in the game's practice ground, where players can make adjustment to the attributes of the characters at will (such as: shorten the cooldown time of skills, obtain unlimited gold coins to purchase the equipment to improve the hero's ability, etc.), as a result of which the angle can be continuously and repeatedly carried out. In the meantime, Color skills are recycled and can be applied to end the practice at any time. The repeated practice in the training ground makes players perceive the improvement made to skill proficiency. Secondly, over the course of winning the game, the players will further consolidate and even create their own set of game character operation skills. There are a wide variety of characters in the game of <King of glory>, which suggests that players can also promote the operation of learning new characters on the basis of successful experience.

As revealed by the results of H4, learning motivation has a positive impact on learning performance, which means, the easier learning motivation is purposed to improve learning performance. In previous studies, there are many researchers demonstrating that learning performance has a positive impact on learning motivation (Choi, k.h.2013, Su, c.h.2019, park, Schmidt, scheu, & deshon, 2007). In the research environment of this study, it is also indicated that learning motivation can play a positive role in learning performance. It can also be further shown that the two interact.

H5 confirm that learning performance have media effect on the relationship between learning motivation and satisfaction. Because learning motivation has no effect on the satisfaction. Therefore, it shows that the learning motivation needs the reflection of learning performance to produce satisfaction, so it shows that it is an important thing to give feedback to players in time.

H6 shows that performance also has a positive effect on continuance intention, so satisfaction has no medium effect. So learning performance can also directly cause the player's continuance use intention.

Comparatively, <King of glory> is a mature game that attracts a large number of users in China. For competitive games that also need to be developed, it is considered that the game system can be made adjustable through the learning motivation of these players to improve the continuation of use. It can be seen from this study that there are an increasing number of players attaching much importance to the process of playing games and learning and mastering new skills. In our view, this provides us with a huge inspiration. That is to say, the process is what game players focus on. The construction and management of the game community is very important for the development of the game, just as the research results show that mastery motivation and vicarious experience have a positive impact on learning motivation. From the survey information, most people get the relevant information from watching game live or searching the associated role video. In the process of player learning, the operation of the game community will have a great impact on the continuance use intention of the player.

As I mentioned earlier, <King of glory> is a representative of MOBA, who wins mainly through teamwork and personal skills. On this basis, it is also important to use the equipment of virtual characters. In the same type of games, the research results are also applicable to the same type of MOBA games. In other game types, there are certain requirements for player operability, such as First-Person Shooter Game. In Role playing game (RPG), it is also applicable in the aspect of player's weapon allocation and upgrading. In many RPG Games, it is realized in the form of advanced weapon synthesis with a special character's attribute and collected material. Therefore, in such aspect, it can also cause the player's learning motivation. The introduction of strategy to players can be applied in many games.

5.2 Limitations and future research

In this study, there are some awkward reasons for the translation of questions into Chinese at the time of investigation. In order to assist the participants in understanding the questions, we further explained the game environment after raising the questions, which is inevitable to have some slight impact on the results. In addition, the King of Glory has also entered overseas markets in recent years, such as South Korea. If the comparison with overseas players can be added, it is believed that the research will be of more significance. Meanwhile, it will also provide some enlightenment for its development in overseas markets. However, as the author is still a student and the fundings made in the investigation are limited, it is hoped that there will be a better opportunity to conduct further research in the future. In the study of games, players will enter the state of game learning at the start of this game. In this paper, we have not been able to conduct further study on the game learning motivation of players. There are some drawbacks in this part, so that further research needs to be conducted in the future to address them. Secondly, it is possible to broaden the scope of research on player perception and place the focus on the impact of game character operation videos on players regarding video platforms. If the player has the intention to use the game for a long time, the game operation video will have influence on whether the purchase of items in the game. It is believed that making purchase of game items is also one of the factors that can reinforce the intention to use the game. Therefore, through such research, we can gain a better understanding of the continuous use by players.

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Attachment1

Construct	Measure	Reference
experience	I have mostly been successful in playing king of Glory on a regular basis.	Warner, L. M , 2014
	Even if it turned out challenging at times, I have managed to remain active. For example, characters are difficult to operate, etc.	
	It was never difficult for me to play game on a regular basis.	
vicarious experience	I model myself on people who are more active than I am. (I also want to operate well like them)	Warner, L. M , 2014
	I feel more confident in being physically active if I can model myself on somebody else. (Imitate the operation methods of powerful people, I will be more confident to win)	
	I feel motivated to be active if I see people my age being active. (all played very well, I also want to play well)	
Need of Achievement	I do my best work when my game tasks are fairly difficult.	Steers, R. M., & Braunstein, D. N. (1976)
	I try very hard to improve on my past performance at game.	

	I take moderate risks (Risking my life to save teammate's life etc.) and stick my neck out to get ahead at game.	
	I try to perform better than other players at King of Glory.	
Need of Power	I seek an active role in the leadership of a group.	Steers, R. M., & Braunstein, D. N. (1976).
	I find myself organizing and directing the activities of others.	
	I strive to be "In command" when I am working in a group.	
Mastery motivation	I prefer figure out things by myself.	Harter, S. (1981).
	I prefer make my own plans.	
	I prefer figure out mistakes by myself.	
Learning Motivation	The beginning of the MOBA game attracts me.	Keller, J.M. (1987) Pintrich, P.R. (1992)
	For me, the most satisfying thing in the game is trying my best to understand the use of character.	
	I am really interested in the content of the game.	
	When I learn through using the game, I am confident that I can understand how to use the character .	
	I enjoy using the character in the game, so I want to understand more about using character.	
	If I can, I want to get better grades than most of the players in this game/character.	
learning performance	I think I did very well at this game.	Harackiewicz, J. M., & Elliot, A. J. (1993).
	I was able to develop my skills on this game.	
	I am satisfied with my performance on this game.	
satisfaction	I am satisfied with the overall feedback from the King of Glory.	Seiders et al. (2005)
	playing at King of Glory is a delightful experience.	
	I am completely satisfied with the King of Glory playing experience.	
Continuance use	I will frequently use this game in the future.	Bhattacharjee (2001a, b)
	I intend to continue using game rather than discontinue its use.	
	I will use game on a regular basis in the future.	

