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## THE MECHANISM OF IDEOLOGICAL-POLITICAL EDUCATION EXCHANGE AND SHARING PLATFORM IN COLLEGES UNDER THE NEW MEDIA ERA BASED ON INTERNET WEB TECHNOLOGY

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# The Mechanism of Ideological-Political Education Exchange and Sharing Platform in colleges under the New Media Era Based on Internet WEB Technology

Hengbing WANG<sup>1</sup>

## Abstract

The rise and popularization of internet web technology set off a wave of researching the relationship between internet and ideological-political education. As a new teaching method, the ideological-political education exchange and sharing platform in colleges came into being. Through literature analysis, the author expounds the role of knowledge sharing mechanism in the operation of shared platform. Knowledge network construction, environmental mechanism and incentive mechanism have a significant impact on knowledge sharing mechanism. In order to achieve knowledge sharing, improve the user's interactive experience and make the platform work well, the incentive mechanism has become an important factor in mobilizing the enthusiasm of users. We use the Literature analysis method and structural equation modeling to carry out this research. Based on the user contribution function, we build a user behavior model and analyze the data. It verifies that the incentive mechanism can promote the operation of ideological-political education exchange and sharing platform in colleges. The incentive mechanism can significantly improve the probability of user contribution and the overall probability of completion of social media tasks on the shared platform, as well as significantly increase the expected utility level of individual users and the entire platform.

*Keywords:* exchange and sharing platform, knowledge sharing mechanism, incentives mechanism, user behavior model.

## Introduction

Ideological and political education in colleges is that educators exert purposeful, planned and organized influences on educated persons according to certain social and political requirements, ideological concepts and moral norms. They use a variety of environments, mechanisms and vehicles to carry out such practical

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activities as political education, ideological education, moral education and psychological education. Ideological and political education, which takes people's thinking and spiritual world as its objects of work, has entered an age of infinite choice because of the rapid development of new media (including the Internet and mobile phones). "Anyone" who lives in this age can get "any information you want" anywhere and anytime. In recent years, academia has strengthened the research on ideological and political education in colleges. In particular, the rise and popularization of Internet web technology has led to a wave of research on the relationship among the Internet and ideological and political education (Gonzalez-Martinez *et al.*, 2015; Hall & Stahl, 2015). The ideological and political education exchange and sharing platform has become a new mode of communication (Dong, 2017). In the sharing platform, we can share resources and experience.

For college online education, the main body of knowledge sharing includes three categories: teachers (including network counselors), students and managers. According to the nature of knowledge sharing, it can be divided into knowledge providers, knowledge demanders and knowledge coordinators (Cai, Daskalakis, & Weinberg, 2013; Costabile & Spears, 2013). Knowledge providers have accumulated some knowledge, knowledge recipients have strong learning ability and knowledge coordinators evaluate the whole sharing process. According to the nature of knowledge sharing, it can be divided into knowledge providers, knowledge demanders and knowledge coordinators. Knowledge providers have accumulated some knowledge, knowledge recipients have strong learning ability, and knowledge coordinators evaluate the whole sharing process. Some nonregistered users who do not participate in specific subject tasks are also one of the subjects of network knowledge sharing. They can browse or download the unrestricted articles and achievements posted by others on the platform. Knowledge demanders have clear knowledge needs when they encounter problems they can not solve during their study or practice. Non-registered users facilitate the flow of knowledge by browsing or downloading articles and results published by others. However, the development of the platform needs the maintenance and operation in the later stage. It is very important to construct the knowledge sharing mechanism of the shared platform.

## **Literature Review**

Internet information technology has not only created new conditions for college students' ideological and political education but also brought great challenges. This makes the environment for ideological and political work in colleges more complicated. Hu Shuxiang and Xie Yujin pointed out that the era of big data is a new environment that can not be rejected and avoided by network ideological and political education. In the meantime, Wu Hui and Tan Zhenkang think that the development of network communication technology has brought the strong

rise of mobile application (APP). It profoundly affects the thinking and behavior of contemporary college students. The new era has brought new horizons, new methods and new ways for ideological and political education in colleges. However, the sharing platform combines the traditional ideological and moral education with the organic development of the Internet nowadays. It creates a good start for ideological, moral and political education in colleges and universities (Chang & Chu, 2014). Chang Tao, Liao Jianqiao Study found that under the condition of incomplete information, the traditional incentive mechanism and direct incentive mechanism will cause the team knowledge sharing to fall into prisoner's dilemma. Based on principal-agent theory, they put forward the incentive model to share the interests of the team, analyzed the design of the optimal incentive contract and the incentive mechanism of the mechanism to the members' knowledge-sharing efforts (Freud, 2014; Guo & Niu, 2014). Based on game theory, Zhuge Jianping et al constructed an incentive model for knowledge sharing. They analyzed the relationship among the implicit knowledge, the degree of contribution and the way of motivation.

## **Research Purposes**

Ideological and political education is a compulsory public basic course for colleges and universities in our country. It is also the main channel and main front for ideological and political education for undergraduates, which guides college students in establishing correct world outlook, outlook on life and values. In recent years, the rapid development and popularization of network technology have brought new opportunities for the teaching of ideological and political theory in colleges, but they also face new challenges. The wide spread of distance education has impacted the traditional teaching system. The development of information technology has provided new teaching methods. The speed of knowledge dissemination has been accelerated and the teaching requirements of teachers have been raised (Chang et al., 2015; De Bono, 2015). Nowadays resource sharing has become the norm. This shows that ideological and political education exchange and sharing platform model is in urgent need of development (Cummins et al., 2016). In the web era, we should actively apply the new network technology innovation and development to study the mechanism of ideological and political education sharing platform. We should theoretically and practically study the platform operation mechanism and platform user behavior so as to promote the all-round development of ideological and political education in colleges.

#### **Research Methods**

Through collecting, sorting and summarizing existing relevant documents, defining the research object and summarizing the research results provide reference for the current research. Literature analysis method infiltrates the entire research process of this article. Through the literature analysis, the research theme is clear and the theme is the foundation of research on incentive mechanism and model construction (Ao, 2013; Athey *et al.*, 2013).

Structural equation modeling is a statistical data analysis tool, which is formed by comprehensively using multiple regression analysis, path analysis and confirmatory factor analysis. It can be used to explain the relationship between one or more variables and one or more dependent variables (Baldwin, 2015). The basic idea is: based on existing theories and knowledge, a model of the correlation between a set of variables is formed through inference and hypothesis and then the model is verified by data. If the model fits well, the model can be accepted or the model needs to be modified to better fit the data. In this paper, the structural equation modeling method is used to study the causal relationship between user behavior and platform effect.



Figure 1. Structural Equation Modeling

Web is a generic term for a new class of Internet applications. As a new technical application, it has a very broad and profound meaning. It represents a new management style, a new resource organization model, a new concept of application. Today's Web enhances the interaction between websites and users. The content of the website is provided by the users and the users are also involved in the function construction of the website. This achieves a two-way communication between the website and the users (Azrieli, Chambers, & Healy, 2018). Everyone

can become their "origin of the web" through the web. They create their own topics and discuss their own ideas.



Figure 2. the Working Principle of Web Technology

In the Internet era, the traditional ideological and political education in colleges has been impacted with the rapid development of web technology. The diversity of students' thinking and the diversification of information acquisition channels make the effectiveness of ideological and political education in colleges and universities continue to decline (An, 2017; Zhang & Peng, 2017). There are three major challenges: First, the contents of ideological and political education in colleges how to adapt to the Internet age. Second, how to strengthen the authority of ideological and political education in colleges. Third, how to let the essence of ideological and political education in colleges into the hearts of educated people. Web technologies include online video chatting technology, E-mail technology, whiteboard technology and more. Education exchange and sharing platform can use these technologies for knowledge sharing. The development of ideological and political education sharing platform in colleges conforms to the needs of the development of the times.

This article analyzes the basis for building a sharing platform for ideological and political education in colleges and discusses the construction mechanism within the platform. In order to optimize the ideological and political teaching in colleges, this paper aims to study how to use the Internet WEB technology to better run the new media college ideological and political education sharing platform (Seeland *et al.*, 2016). And the article explores the construction mechanism within the platform and the importance of the incentive mechanism to the platform development.

## Construction of Knowledge Sharing Mechanism in Ideological and Political Education Sharing Platform

Through the study of Chinese and foreign documents, we know that the mechanism of knowledge sharing is the foundation of the operation of ideological and political education sharing platform. Factors such as knowledge network construction, environmental mechanism and incentive mechanism have a great impact on knowledge sharing mechanism. Knowledge sharing mechanism refers to the process or method of realizing the goal of knowledge sharing. Education knowledge sharing system requires technical, knowledge and network support (Marquezan *et al.*, 2013). At the same time we also need to focus on building a good network of people, and ultimately the sharing of knowledge.



Figure 3. Knowledge Network Construction

#### Mechanism and Environmental Mechanism

Knowledge construction should be based on the understanding of knowledge and then design a reasonable framework (Lam, 2014; Hosp, 2015; Taichman et al., 2016). First of all, we must understand the development trend of ideological and moral education in colleges and understand how knowledge plays a role. Knowledge network construction is not limited to the construction of explicit knowledge, tacit knowledge construction is also very important. Only by resolving the relationship between these two aspects can the knowledge network construct be regarded as a complete scientific system. The construction of knowledge network in knowledge sharing mechanism needs an open knowledge base system to support it. It is not limited to the tangible database system. The tacit knowledge in the user's mind is also used as the "virtual knowledge base" in the platform. The knowledge base in the exchange and sharing platform mainly includes the courseware and lectures used by the teachers, excellent class videos and important subject resources (Kearns et al., 2014). However, tacit knowledge, which is hard to be expressed by words or images on the shared platform, can be realized only if the learner proactively presents the individual's experience and knowledge to other users.

Knowledge sharing on the virtual platform includes not only the knowledge sharing among individuals but also the sharing of knowledge between colleges and universities. Therefore, it is necessary to create a good environment (Chai, 2017; Lin, 2017). The perfect platform can provide convenient space for users to communicate and interact with each other, which can increase the enthusiasm of knowledge sharing between users. The efficiency and accuracy of knowledge retrieval also affect the enthusiasm of users to participate in knowledge sharing. High-quality platform environment can provide users with convenient navigation and improve the efficiency of knowledge sharing.

#### The Cultivation of Self - efficacy and the Construction of Trust Mechanism

Self-efficacy is a potential factor that influences whether or not to make a knowledge-sharing decision. Self-efficacy will make users have some expectations of their own behavior. Knowledge sharing happens only if you feel that you can fulfill your expectations. For this reason, incentive mechanisms have become an important factor in achieving successful knowledge sharing (Aboody, Levi, & Weiss, 2018; Herman & Swiss, 2014; O'Hara *et al.*, 2015; Yongqiong, 2015). When users think that they can get certain rewards or benefits from knowledge sharing, they will form a positive sharing attitude. Therefore, in order to construct an optimized knowledge sharing platform, it is necessary to enhance the sense of self-efficacy of community members and to guide members to actively participate in knowledge sharing.



Figure 4. Self-efficacy Structure Chart

In the communication platform of ideological and moral education in colleges, trust is the precondition of knowledge sharing. The interaction between platform users relies heavily on mutual trust and a good trust environment is very important to the healthy development of the platform. We want users to be proactive in participating in knowledge sharing activities. Mutual trust between users is a prerequisite for strengthening knowledge sharing.

#### Incentives Mechanism

Incentives play a very important role in the education sharing platform and every participant needs motivation from peers or teachers. We introduce the concept of incentive to the platform mainly to mobilize members' enthusiasm and creativity. We introduce the concept of incentive to the platform mainly to mobilize members' enthusiasm and creativity. In order to achieve the goal of knowledge sharing, incentives need to be included in a timely manner. This forms a learning community where cooperation and teamwork become especially important (Kennedy, Fairbrother, & Zhao, 2013). In the process of knowledge exchange between learners, the exchange direction of members is likely to deviate from the theme. The result will be different from the expected goal and the enthusiasm of sharing knowledge is not high. In this case, the incentive mechanism is needed to coordinate to complete the established platform task.

In the incentive mechanism of knowledge sharing, the external incentive factors can have some impact on short-term behavior but cannot change the internal incentive system. What we need is an individual's intrinsic motivation and certain needs (Shun-qiua, Jian-wena, & Zhang, 2013). Some scholars think that an incentive mechanism is needed to change people's behaviors and encourage knowledge sharing in the knowledge-sharing activities (Paterson et al., 2015). Such as clear and specific learning tasks, the rational allocation of tasks, the established goal. The platform uses goals to motivate users to actively share knowledge. The platform praises users with better tasks and gives them material incentives and spiritual rewards. An effective evaluation mechanism is needed to set up so that users can have more objective evaluations on individuals or teams. So we can improve the follow-up work. In the education sharing platform, there are some users enjoy the resource pool formed by other user contributions. They do not contribute anything, or contribute only a small amount. The sharing of benefits contributed by users, the cost alone and the complete voluntary contribution of users are the main reasons for such behavior. In order to avoid the "free riding" problem of most users and enhance the utility of the entire sharing platform, we must explore practical and effective incentive mechanisms to influence these selfish end users and stimulate their interest in contributing content.

#### **Data Sources**

#### The Output Function and the Cost Function of User Contribution

This paper draws on the concept of knowledge production function proposed by Griliches, assuming that the contribution output of users is a linear function of contribution effort. This paper uses the "time contribution" and "content contribution" to measure the user's contribution to the level of effort, ignoring the impact of random factors. The output function of a single user can be expressed as:

$$Y(G,T,\theta) = aG + bT + \theta Y(G,T,\theta) = aG + bT + \theta$$
(1)

 $Y(G, T, \theta)Y(G, T, \theta)$  is the output contributed by the user; G is the content contribution effort value of the user; T is the user contribution time effort value; a is the output coefficient contributed by the content.  $a \ge 0$  means that the contribution of output increases with the level of content contribution. The greater the level of contribution is to the contribution, the greater the contribution to the output level. **b** is the output coefficient of time contribution  $b \ge 0$ ;  $\theta$  is the random influencing factor.  $\theta \sim N(0, \mu)E(\theta) = 0D(\theta) = \mu_0$ 

In this paper, we use the cost function form mostly used in define domestic and foreign research to the cost functions of contribution user content and time contribution respectively as: CAG2

$$C_1(G) = \frac{C_1(G)}{2}$$

$$C_2(T) = \frac{c_2 T^2}{2}$$
(2)

,  $C_2(T)$  are the content contribution and the time contribution cost;  $c_1$  are the content contribution cost coefficient and the time contribution cost coefficient of the user, The larger the value of  $c_1$  the greater the cost of the same contribution, the less willing the user is to contribute (Bonk, 2009).

The cost function  $C_2(T)$  have the following properties:  $C_1(G) \ge 0$ ,  $C_2(T) \ge 0$ ,  $C_1'(G) = c_1(G) \ge 0, C_2'(T) = c_2(T) \ge 0C_2'(T) = c_2(T) \ge 0$ ,  $C_1''(G) = c_1 \ge 0$ ,  $C_2''(G) = c_1 \ge 0$ ,  $C_2''(G) = c_2 \ge 0$ ; This shows that the costs that need to be paid are increasing as the level of content contribution and time contribution increases. The higher the level of contribution, the higher the cost will be.

#### User Behavior Model under Motivation Conditions

The platform has a public social media task **T**, which may be done by **n** users. The revenue **R** after completing the mission (contribution) is shared by all users of the platform, but the cost incurred  $c_i$  is borne solely by the users who complete the task. Under the circumstance of adding platform incentive, we can regard the utility  $u'_i u'_i$  of individual user as co-revenue **R** and  $c_i$  as user independent cost. The probability of choosing to complete the task is  $\gamma_i$ , the probability of at least one other user completing the task is  $\gamma_{t/i}$  as well as the platform's motivation **s** for the user. We construct the following user-expected utility maximization model under incentive conditions:

$$\operatorname{argmaxEu}_{i}^{\prime} = g(c_{i}, R, \gamma_{i}, \gamma_{\underline{t}}, s) \operatorname{argmaxEu}_{i}^{\prime} = g(c_{i}, R, \gamma_{i}, \gamma_{\underline{t}}, s) \tag{3}$$

Providing incentives to users will bring additional costs to the platform, so the overall utility function of the platform under the incentive conditions is:

$$\mathbf{u}_{\mathbf{p}}' = \pi \cdot \mathbf{\gamma}' - \sum_{i=1}^{n} \mathbf{\gamma}_{i}' \cdot \mathbf{c}_{\mathbf{g}} \mathbf{u}_{\mathbf{p}}' = \pi \cdot \mathbf{\gamma}' - \sum_{i=1}^{n} \mathbf{\gamma}_{i}' \cdot \mathbf{c}_{\mathbf{g}}$$
(4)

 $\gamma'$  is the completion rate of the overall task of the platform after adding the incentive;  $\pi$  is the revenue that the platform can obtain after the social media task is completed;  $\gamma'_i$  is the probability that a single user I chooses the "done" strategy under incentive conditions;  $c_{g}$  is the cost of the platform to provide incentives for users. Incentive costs is:

$$c_{g} = s^{\frac{1}{2}}$$
(5)

The above equation shows that the utility  $\mathbf{u}'_{\mathbf{p}}$  under the incentive condition depends on the probability  $\boldsymbol{\gamma}$ , the reward  $\pi$  that the platform can obtain after the task is completed and the cost  $\sum_{i=1}^{n} \boldsymbol{\gamma}'_{i} \cdot \mathbf{c}_{\mathbf{s}_{0}}$ .

The user contribution incentive mechanism is essentially the platform designer to give the individual user additional incentive s to complete the social media task with the system cost  $c_s$  so as to maximize the utility  $Eu_p'$  of the whole system by designing the optimal incentive mechanism.

#### Game Analysis

The following article further uses a game matrix framework to describe the user's strategy selection under incentive conditions. The game problem of multiple users under the incentive condition is: the game between the current user II and other users on the platform.



Table 1. User i's Utility under Different Strategies with Incentive Conditions

As shown in the table, user I still faces two possible policy choices, with or without completing the task. If the user chooses to complete the task, no matter whether other users also choose to complete the task, the user can not only get the common income **R** but also get the platform's incentive **s**.Of course, the user

also need to pay the cost  $c_i$ . When the user chooses not to complete the task, if at least one of the other users chooses to finish, the user can still get the benefit **RR** without paying the cost, but can not get the platform's incentive. However, if other users also choose not to complete the task when I is not complete, then all users will not get any benefits and incentives.

Under the incentive conditions, the hybrid strategy equilibrium conditions are as follows:

$$\gamma'_{t/i}(R - c_i + s) + (1 - \gamma'_{t/i})(R - c_i + s) = \gamma'_{t/i} \cdot R + (1 - \gamma'_{t/i}) \cdot 0$$
(7)

 $\gamma'_{t/i}$  is the probability that a task is "completed" by at least one of the remaining n-1 households except for user I under motivation conditions.

In the same way as in the absence of excitation, we use the above equation to

solve it: 
$$\gamma'_{t/i} = \frac{R-c_i+s}{R}$$

Then, the probability of the task being "done" by no one else is:

$$\gamma'_{t/i} = 1 - \gamma'_{t/i} = \frac{c_i - s}{R} \gamma'_{t/i} = 1 - \gamma'_{t/i} = \frac{c_i - s}{R}$$
(8)

Under the incentive mechanism, the probability of an individual user completing a task is:

$$\gamma'_{i} = 1 - n - 1 \sqrt{\prod_{i=1}^{n} \frac{c_{i} - s}{R}} \cdot \frac{R}{c_{i} - s} \gamma'_{i} = 1 - n - 1 \sqrt{\prod_{i=1}^{n} \frac{c_{i} - s}{R}} \cdot \frac{R}{c_{i} - s}$$
(9)  
Further simplifying the homogeneity of the user the probability of homogeneous

Further simplifying the homogeneity of the user, the probability of homogenous user I selecting "done" strategy is:

$$\gamma'_{i} = 1 - \left(\frac{c-s}{R}\right)^{\frac{1}{n-1}} \gamma'_{i} = 1 - \left(\frac{c-s}{R}\right)^{\frac{1}{n-1}}$$
(10)  
Under the incentive mechanism, the overall tack completion probability is:

Under the incentive mechanism, the overall task completion probability is:

$$\gamma'_{i} = 1 - n - 1 \sqrt{\prod_{i=1}^{n} \frac{c_{i} - s}{R}} \gamma'_{i} = 1 - n - 1 \sqrt{\prod_{i=1}^{n} \frac{c_{i} - s}{R}}$$
(11)

In the case of homogeneous users, the overall task completion probability of the platform is:

$$\gamma_i' = 1 - \left(\frac{c-s}{R}\right)^{\frac{n}{n-1}} \tag{12}$$

#### **Data Analysis**

## Verification and Analysis of User Behavior Model under Motivation Condition

In order to simplify the analysis, this article assumes that users are homogeneous; the cost of completing a task is the same without affecting the conclusions of the study. Considering there are n selfish users on the network. They have the ability to complete the task T.Assuming the cost of completing the task is c = 8, the common income that the task completes is R = 10. The platform can obtain the reward  $\pi = 8$  after completing the task. The incentive level of the platform to the task user is  $s \in [0,8]$ , the number of users is  $n \in [0,100]$ 

The Comparison of Individual User Task Completion Rate under Different Motivation Condition

Under the condition of no incentive, the task completion rate of individual user

i is  $\gamma_i = 1 - \left(\frac{c}{R}\right)^{\frac{4}{n-1}}$ . Under the incentive condition, the task completion rate of

individual user I is  $\gamma'_i = 1 - \left(\frac{c-s}{R}\right)^{\frac{1}{n-1}}$ . In the presence or absence of incentives, we compare individual users' task completion rates.



*Figure 5.* The Comparison of Individual User Task Completion Rate under Different Motivation Condition

Figure shows the individual user task completion rate comparison at the optimal excitation level  $S^* = 4.2$  (red) and in the absence of excitation S = 0 (blue) ( $c = 8, R = 10, \pi = 8, n \in [0, 100]$ ). As can be seen from the figure, the completion rate of individual user tasks are reduced with the increase in the number of users, with or without incentives [35, 36]. However, given the optimal incentive of individual users  $S^* = 4.2$ , the individual user task completion rate has been increased.

## Comparing the Overall Completion Rate of the Platform Tasks under Different Motivation Condition

Under the condition of no excitation, the completion rate of platform task T

is  $\gamma = 1 - \left(\frac{c}{R}\right)^{\frac{n}{n-1}}$ . Under the motivated condition, the completion rate of the

platform **T** is  $\gamma' = 1 - \left(\frac{c-s}{R}\right)^{\frac{n}{n-1}}$ . With or without excitation, we compare the overall completion rate of the platform tasks.



*Figure 6.* The Comparison of the Overall Completion Rate of the Platform Tasks under Different Motivation Condition

Figure shows the individual user task completion rate comparison at the optimal excitation level  $S^* = 4.2S^* = 4.2$  (red) and in the absence of excitation S = 0 (blue) ( $c = 8, R = 10, \pi = 8, n \in [0,100]$ ). As can be seen from the figure, the overall completion rate of the platform tasks are reduced with the increase in the number of users, with or without incentives (Thilakanathan *et al.*, 2014). However, given the optimal incentive of individual users  $S^* = 4.2$ , the overall task completion rate of the platform has been improved.

## The Comparison of Platform Expected Utility under Different Motivation Condition

Under the condition of no incentive, the platform can not get the incentive cost nor the high task completion rate and the expected return. However, under the condition of motivation, the platform needs to pay incentive cost while getting a higher task completion rate. Under the condition of no excitation s = 0, the platform expected

utility is  $EU_p = \gamma \cdot \pi$ , Under the motivated condition  $S^* = 4.2$ , the platform expected



utility is  $EU_p = \pi \cdot \gamma' - \sum_{i=1}^{n} \gamma'_i \cdot c_s = \pi \cdot \left[1 - \frac{c-s}{R}\right]^{\frac{n}{n-1}} - n \cdot \left[1 - \frac{c-s}{R}\right]^{\frac{n}{n-1}} \cdot S^{\frac{1}{2}}$ . With or without excitation, we compare the platform expected utility.

*Figure 7. The* Comparison of Platform Expected Utility under Different Motivation Condition

Figure shows the individual user task completion rate comparison at the optimal excitation level  $S^* = 4.2$  (red) and in the absence of excitation S = 0 (blue) ( $c = 8, R = 10, \pi = 8, n \in [0,100]$ ). As can be seen from the figure, the expected utility of the platform is reduced with the increase in the number of users, with or without incentives. However, it is clear that the expected utility of the platform is increased by about 1.5 units given the optimal incentive of individual users  $S^* = 3.18089$ . Incentive mechanism proposed in this paper not only can improve the overall completion rate of platform tasks to enhance the platform's own effectiveness, but also can improve the probability of individual users to complete the task and the expected utility of the task.

## Discussion

This paper establishes a user contribution behavior model of ideological and political education exchange and sharing platform in colleges and universities. Based on the framework of game theory, this paper studies the interaction among users and platform. By setting up the output function and cost function of user contribution, the incentive mechanism of user contribution is put forward. According to the user's time contribution to the platform and content contribution level, the platform gives the user a certain incentive compensation and induces user contributions. Finally, this paper verifies the effectiveness of user contribution incentive mechanism through simulation model.

The results show that the incentive mechanism can significantly improve the probability of user contribution and the overall probability of completion of social media tasks on the shared platform, as well as significantly increase the expected utility level of individual users and the entire platform. Incentive mechanism based on principal-agent theory can reduce user's contribution cost by encouraging users' contribution behavior, thus encourage users to increase contribution probability and indirectly guarantee the stability of the development of sharing platform.

## Conclusion

Today's web technology not only provides good technical support for the shared platform but also accelerates the promotion and application of the platform information. We need to build a bridge between education and network so as to optimize the development of the shared platform. The operating mechanism of the platform is the most important, the platform needs to not only create a good platform environment but also optimize the user's interactive experience. In the ideological and political education exchange and sharing platform, the content created by users is shared by all. While creating content and making contributions to the platform, users spend time and effort. These are the costs that users may consume when making a contribution. Then, if the user perceives a gain such as recognition is less, the user's contribution will be reduced. Therefore, sharing platform need to establish an effective incentive mechanism to encourage users to contribute. This is the guarantee of long-term development. Incentives not only promote users to provide more accurate content evaluation to enhance the activity of the platform, but also users will become more and more sticky to the platform and more actively participate in the platform through more accurate content recommendation. Thus, the incentive mechanism proposed in this paper can promote the virtuous circle of sharing platform. We recommend that the sharing platform recommend the content recommendation mechanism of the website to users when they enter the website. For example, the platform can calculate contributions by publishing original content, creating posts, forwarding content,

replying to comments, etc and then rewards users. This platform will attract more users to participate in the contribution of information. It will enable members to get more useful information and improve user contribution.

As for the social media platform users' participation in the evaluation incentive mechanism, future research should focus on how to motivate users who do not have any evaluation records to participate in the content reviews on the social media platform. In the meantime, in the future, we can further validate and perfect the recommended incentive mechanism in this paper by simulating the user's comment under the proposed incentive mechanism in the future so as to ensure the effectiveness of the incentive method in practical application.

#### References

- Aboody, D., Levi, S., & Weiss, D. (2018). Managerial incentives, options, and coststructure choices. *Review of Accounting Studies*, 23(2), 422-451.
- An, Z.Q. (2017). Study on the Ideological and Political Education in Universities in New Media Era. DEStech Transactions on Computer Science and Engineering, (ICICEE).
- Ao, Z.J.J. (2013). Using and Thinking of Incentives Mechanism in Physical Educational Teaching Management. Sports Forum. 1, 011.
- Athey, B.D., Braxenthaler, M., Haas, M., & Guo, Y. (2013). TranSMART: an open source and community-driven informatics and data sharing platform for clinical and translational research. AMIA Summits on Translational Science Proceedings, 2013, 6.
- Azrieli, Y., Chambers, C. P., & Healy, P. J. (2018). Incentives in experiments: A theoretical analysis. *Journal of Political Economy*, 126(4), 1472-1503.
- Baldwin, A. (2015). Framing Human Rights Education in China. Lehigh University.
- Bonk, C.J. (2009). *The world is open: How web technology is revolutionizing education*. In EdMedia: World Conference on Educational Media and Technology (pp. 3371-3380). Association for the Advancement of Computing in Education (AACE).
- Cai, Y., Daskalakis, C., & Weinberg, S. M. (2013, October). Understanding incentives: Mechanism design becomes algorithm design. In: Foundations of Computer Science (FOCS), 2013 IEEE 54th Annual Symposium on (pp. 618-627). IEEE.
- Chai, K.S. (2017). *Incentives as a Mechanism to Revive Housing Abandonment* (Doctoral dissertation, UTAR).
- Chang, K.N., Brown, S., Perkins, R., Boyle, L., Cofer, W., & Hall, M. (2015). Refinement and Dissemination of a Digital Platform for Sharing Transportation Education Materials (No. 2013-M-UI-0041). Pacific Northwest Transportation Consortium.
- Chang, M.C., & Chu, Y.M. (2014). A case study of a knowledge-sharing web-based platform for energy education. *International Journal of Innovation in the Digital Economy*, 5(1), 60-70.
- Costabile, A., & Spears, B. A. (Eds.). (2013). *The impact of technology on relationships in educational settings*. London: Routledge.
- Cummins, S., Beresford, A.R., Davies, I., & Rice, A. (2016). Supporting Scalable Data Sharing in Online Education. In Proceedings of the Third (2016) ACM Conference on Learning@ Scale (pp. 97-100). ACM.

- De Bono, E. (2015). The Mechanism of Mind: Understand how your mind works to maximise memory and creative potential. UK: Random House.
- Dong, W. (2017). 54. Study on the Transformation and Innovation Teaching Mode of University Political Education under Internet Plus Era Background. *Boletin Tecnico*, 55(15), 40.

Freud, S. (2014). On the psychical mechanism of hysterical phenomena. Read Books Ltd.

- Gonzalez-Martinez, J.A., Bote-Lorenzo, M.L., Gomez-Sanchez, E., & Cano-Parra, R. (2015). Cloud computing and education: A state-of-the-art survey. *Computers & Education*, 80, 132-151.
- Guo, X. & Niu, L. (2014). Research on the sharing platform of high-quality resources in cloud computing environment. *BioTechnology: An Indian Journal*, 10(21), 12989-12994.
- Hall, R., & Stahl, B. (2015). Against Commodification: The University, Cognitive Capitalism and Emergent Technologies. Marx and the political economy of the media. Leiden, NL: Brill, pp. 65-97.
- Herman, A., & Swiss, T. (2014). *The world wide web and contemporary cultural theory: magic, metaphor, power*. London: Routledge.
- Hosp, A. K. (2015). U.S. Patent No. 9,092,828. Washington, DC: U.S. Patent and Trademark Office.
- Kearns, M., Pai, M., Roth, A., & Ullman, J. (2014). Mechanism design in large games: Incentives and privacy. In Proceedings of the 5th conference on Innovations in theoretical computer science (pp. 403-410). ACM.
- Kennedy, K. J., Fairbrother, G., & Zhao, Z. (Eds.). (2013). Citizenship education in China: Preparing citizens for the Chinese century. London: Routledge.
- Lam, J. (2014). Enterprise risk management: from incentives to controls. John Wiley & Sons.
- Lin, R.E.N. (2017). Analysis of Multi Optimization Path of Political Education for University Students based on Information Media. Revista de la Facultad de Ingenieria, *32*(12), 441-447.
- Marquezan, C.C., Metzger, A., Pohl, K., Engen, V., Boniface, M., Phillips, S.C., & Zlatev, Z. (2013). Adaptive future internet applications: Opportunities and challenges for adaptive web services technology. In: Adaptive Web Services for Modular and Reusable Software Development: Tactics and Solutions(pp. 333-353). IGI Global.
- O'Hara, T., Tittensor, D., Baker, M., Stocks, K., & Appeltans, W. (2015). A global Deep-Sea biodiversity data-sharing platform. *Deep Sea Life*, 6, 12.
- Paterson, L.M., Flechais, R.S., Murphy, A., Reed, L.J., Abbott, S., Boyapati, V., ... & Faravelli, L. (2015). The Imperial College Cambridge Manchester (ICCAM) platform study: an experimental medicine platform for evaluating new drugs for relapse prevention in addiction. Part A: study description. *Journal of Psychopharmacology*, 29(9), 943-960.
- Seeland, U., Nauman, A. T., Cornelis, A., Ludwig, S., Dunkel, M., Kararigas, G., & Regitz-Zagrosek, V. (2016). eGender - from e-Learning to e-Research: a webbased interactive knowledge-sharing platform for sex-and gender-specific medical education. Biology of Sex Differences, 7(1), 39.
- Shun-qiua, Z., Jian-wena, L.U.O, & Zhang, Q. (2013). Incentives Mechanism Based on Trade Credit in a Supply Chain with Distribution Free Demand. *Soft Science*, *6*, 004.

- Taichman, D. B., Backus, J., Baethge, C., Bauchner, H., De Leeuw, P.W., Drazen, J.M & James, A. (2016). Sharing clinical trial data - a proposal from the International Committee of Medical Journal Editors, *The New England Journal of Medicine*, 164(7), 505-506.
- Thilakanathan, D., Chen, S., Nepal, S., Calvo, R., & Alem, L. (2014). A platform for secure monitoring and sharing of generic health data in the Cloud. *Future Generation Computer Systems*, 35, 102-113.
- Yongqiong, Q.I.U. (2015). The Application of Mutual Education Mode of College Students in the Teaching of Ideological and Moral Cultivation and Legal Basi. *Higher Education of Social Science*, 9(1), 30-35.
- Zhang, B., & Peng, P. (2017). Research on the Development of Education Resources for the Internet Plus Universities in the National Health Field. *Eurasia Journal of Mathematics Science and Technology Education*, 13(8), 5085-5093.