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The training strategies under the cost-benefit analysis

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ABSTRACT

This paper solves the problems of inferior training cost control and weak training effect through the establishment of training cost income model. The solution will help enterprises survive and develop by effective training work in the era of knowledge economy. Compared with the previous research, this paper proposes training cost calculation formula, employees and enterprises training income function in different circumstances. What's more, enterprises can verify and correct the model by practical statistics in order to fit their needs.

KEYWORDS

Staff training; Cost-benefit analysis; Training cost control; Training effect; Model of strategy combination.



INTRODUCTION

In the times of knowledge economy, the speed of knowledge renewal is fast, effective training is essential for the survival and development of enterprises. Therefore, domestic and foreign scholars have done a lot of research on enterprise training. Becker once divided training into special and general, different types of cost sharing strategy and system of income distribution were given correspondingly^[1]. Xuc carries on the discussion to the human capital participating in the distribution of residual income model of enterprise problem from the angle of game theory^[2]. Li studies from the perspective of risk investment in staff training, analyzed the training risk classification and the influent factors, and given the strategies about how to prevent the investment risk of staff training^[3]. Through survey data, Yao gives the relationship between the provide training and the characteristics of employee, enterprise, and matching, he also studied the determinate role enterprise training played on the wage level^[4]. These studies mainly research on training strategy from the perspective of qualitative, rarely from a quantitative way. This paper adopts quantitative research methods, establishments cost benefit analysis model, given a calculation method of cost and benefit of training and a set of effective training strategies.

ANALYSIS OF PRESENT SITUATION AND PROBLEMS OF TRAINING

Although there are various training strategies implemented on employees, but because there is no cost effective analysis used, the process of training generated a lot of problems, mainly in the following two aspects:

The lack of effective training cost control

When enterprises design the training strategy, because of lack of systematic work analysis, on the one hand, can't understand the knowledge level of training required to achieve; On the other hand, there is no effective assessment, makes the understanding of employees' knowledge level and learning ability is insufficient, can't through the knowledge gap, thus unable to select employees who required fewer training cost, so can't control training cost effectively^[5].

Training did not achieve the desired effect

Many enterprises take extensive management type of staff training, lack of effective training feedback, thus, unable to ensure the trained knowledge's breadth and depth meet the required level of work, making the training rate of return not up to the expected goal. On the other hand, the unreasonable design of wages, turnover of liquidated damages, the rate of training cost share after training causes the staff work enthusiasm very slow, and even have turnover phenomenon, bring a negative influence to the enterprise profit^{[6][7][8]}.

ANALYSIS OF THE TRAINING COST-BENEFIT THEORY

Suppose that we need n kinds of knowledge to complete the work X , and the knowledge number in needed depth is S_i , if transverse of the function graph represents the knowledge breadth and direct-axis s represents the depth of knowledge, then we have the knowledge distribution work X required (as shown in Figure 1). Suppose that the depth of the knowledge number i the employees Y have is S_i' , enterprises can through effective job analysis and staff assessment to understand the current knowledge distribution about employee Y (as shown in Figure 2).

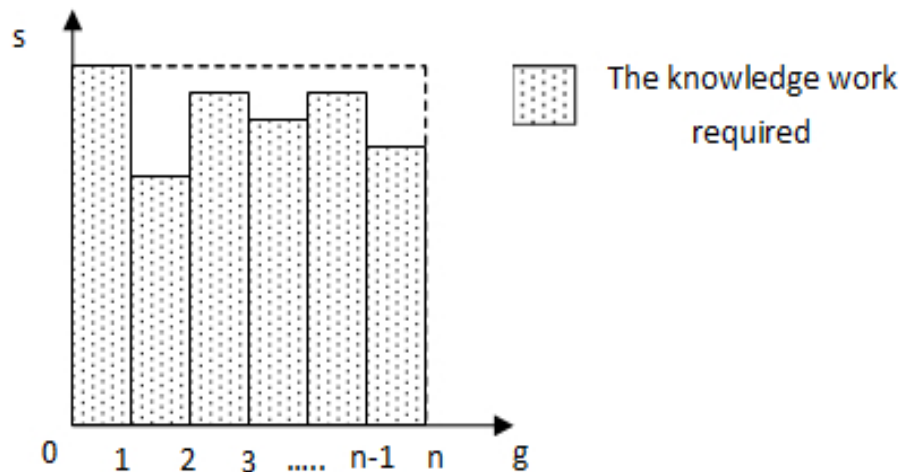


Figure 1 : The knowledge distribution of work X.

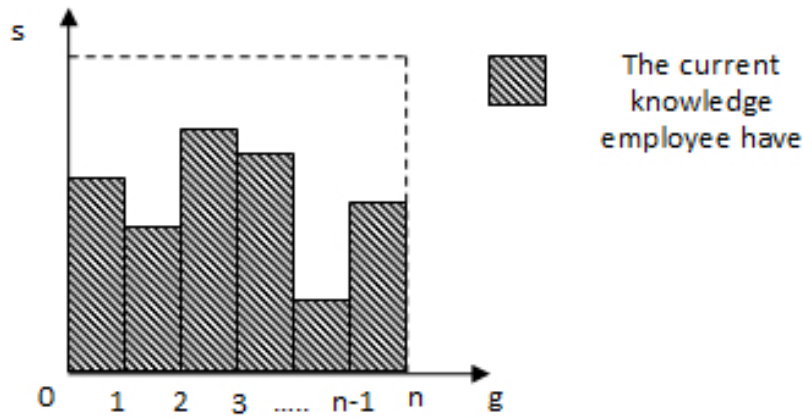


Figure 2 : The current knowledge distribution of employee Y.

Compare the knowledge distribution of work X needed (Figure 1) to the current knowledge distribution of employee Y (Figure 2), we learned that all kinds of knowledge gap when complete work X (as shown in Figure 3).

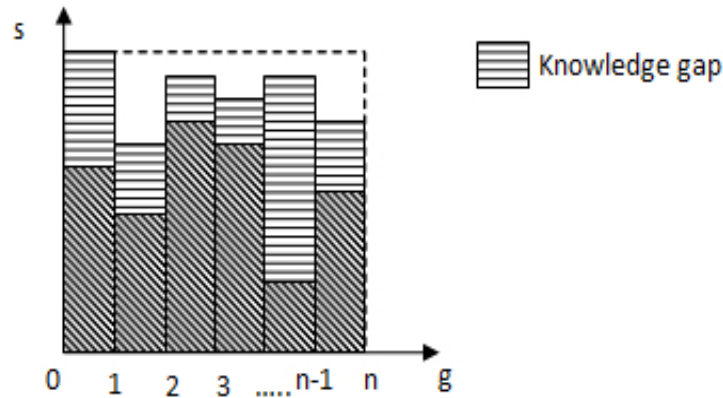


Figure 3 : Knowledge gap.

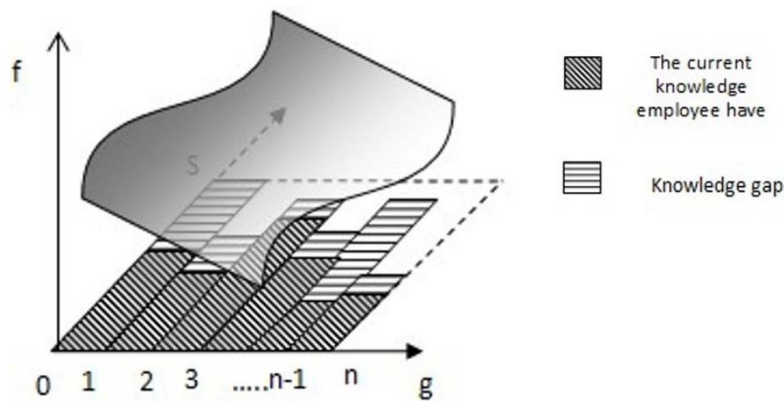


Figure 4 : Direct cost density function of knowledge.

Suppose that C_D is the direct costs of the training to employee Y. Direct costs density function of knowledge learning is determined by the g and s , the expression is $c_D = f(g, s)$, as shown in Figure 4. Integral the direct costs density function via the knowledge distribution interval of work X and the current knowledge distribution interval of employee Y. And the difference is the direct cost of training which makes employee Y up to the required knowledge of work X, the expression is

$$C_D = \int_0^1 dg \int_{s_1}^{s_1'} f(g, s) ds + \int_1^2 dg \int_{s_2}^{s_2'} f(g, s) ds + \dots + \int_{n-1}^n dg \int_{s_n}^{s_n'} f(g, s) ds$$

(Notes: when $s_i \leq s'_i$, $\int_0^1 dg \int_{s_i}^{s'_i} f(G, S) ds = 0$)

Set the proportion of direct costs of individual is k . We can get that the individual direct cost is $C_D \times k$, while the enterprise pay for $C_D \times (1 - k)$.

Making C_I express the enterprising indirect costs, and C'_I express the individual indirect costs (personal effort and time, etc.).

Setting y indicates the applied level of knowledge of employee Y after training, r indicates the rate of return after training, r' indicates the rate of return before training, and the rate r is a function of g, s and y , the expression is $r = r(g, s, y)$.

Setting w_a indicates the wage rate of employee Y before training, w_b indicates the wage rate after training, said w_c indicates the market wage rate at the level of knowledge employee Y got after training. Said T indicates the work hours of employee y after training, J indicates penalty the employee need to pay due to dismissal after training.

The relationship between the costs and benefits after training would take into account when enterprises and Individuals do training decisions, for employees and enterprises, there are several situations will facing:

Case 1: when the wage rates of employee Y after training below the market wage rate ($w_b < w_c$), if

$$\int_0^T (w_c - w_b) dt > J \tag{1}$$

set up, because the market wage rate is greater than the wage rate after training, employee Y can use the profit which come from the using of knowledge level after training to compensate the cost during training and the penalty the employee need to pay due to dismissal after training, so the employee Y will choose to leave after training, thus, the expression of employee's benefit is $\int_0^T (w_c - w_a) dt - J - C_D \cdot k - C'_I$, enterprising income is $J - [C_D \cdot (1 - k) + C_I]$.

Case 2: when the wage rates of employee Y after training below the market wage rate ($w_b < w_c$), if

$$\begin{cases} \int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I > 0 \\ \int_0^T (w_c - w_b) dt < J \end{cases} \tag{2}$$

set up, in this case, though the market wage rate is greater than the wage rate after training, employee Y can use the profit which come from the using of knowledge level after training to compensate the cost during training but can't compensate the penalty the employee need to pay due to dismissal after training, so the employee Y will not choose to leave after training, thus, the expression of employee's benefit is $\int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I$, enterprising income is

$$\int_0^T [r - (w_b - w_a)] dt - C_D \cdot (1 - k) - C_I$$

Case 3: when the wage rates of employee Y after training below the market wage rate ($w_b < w_c$), if

$$\begin{cases} \int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I < 0 \\ \int_0^T (w_c - w_b) dt < J \end{cases} \tag{3}$$

Set up, in this case, employee Y can't use the profit which come from the using of knowledge level after training to compensate the cost during training and the penalty the employee need to pay due to dismissal after training, so the employee Y doesn't choose training, or we can say he is negative to training. Thus, the expression of employee's benefit is $\int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I$. Enterprising income is $\int_0^T [r - (w_b - w_a)] dt - C_D \cdot (1 - k) - C_I$.

Case 4: when the wage rates of employee Y after training are higher than the market wage rate ($w_b > w_c$), if

$$\int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I < 0 \quad (4)$$

set up, in this case, employee Y can't use the profit which come from the using of knowledge level after training to compensate the cost during training and the wage rates of employee Y after training are higher than the market wage rate, so the employee Y doesn't choose training and dismissal, at this time, the expression of employee's benefit is $\int_0^T w_a dt$, enterprising income is $\int_0^T r' dt$.

Case 5: when the wage rates of employee Y after training are higher than the market wage rate ($w_b > w_c$), if

$$\int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I > 0 \quad (5)$$

was established, in such a case, employee Y can use the profit which come from the using of knowledge after training to compensate the cost during training and the wage rates of employee Y after training are higher than the market wage rate, so the employee Y will choose training and doesn't leaving, at this time, the expression of employee's benefit is $\int_0^T (w_b - w_a) dt - C_D \cdot k - C'_I$, enterprising income is $\int_0^T [r - (w_b - w_a)] dt - C_D \cdot (1 - k) - C'_I$.

Now, we know that whether training will be carried out smoothly, depend on the employee Y and the company's decision, if and only if both the employee Y and company make the choice of training, training can be completed. So the above situation: the first, second and fifth meet the condition. For the first case, although the penalty compensates the training costs (including direct costs and indirect costs of enterprise), but not meet the intention of human capital investment which enterprise want to achieve. For the second case, although staff will continue to work in the company after training, but, due to the wage rates of employee Y after training below the market wage rate, there is a negative impact on knowledge applied level y, which will make the rate of return r much lower. For the case fifth, employees can increase their income through training, on the other hand, through the investment of human capital can make enterprises occupy a favorable position in the fierce market. This strategy achieves the win-win situation between enterprises and employees.

CONCLUSIONS

Through the above analysis, we got the following aspects should draw attention when complete staff training: Firstly, in the aspect of training cost control, above all, enterprise can determine the type and level of knowledge of the training want to up through job analysis, and then through the staff assessment to make sure the type and level of knowledge of the selected object command, thus, we can make a budget to the direct cost of training through the knowledge gap, and then get a selection of staff whose training cost are much fewer. At the last, we can achieve the purpose of cost control. Secondly, in the aspect of improving the training benefits, enterprises can go about the breadth, depth and level of application of the staff knowledge. Through training feedback to ensure that the breadth and depth of knowledge the employees got attained to required level after training. And can through work process reengineering and design incentive mechanism to achieve the level of knowledge application.

Thirdly, to reduce the rate of losing staff after training, enterprise can through rational design of the rate of wage after training, direct cost sharing, and leaving liquidated damages.

In short, there are two factors should be involved when design the corporation's training strategy: personal cost-benefit and the enterprise's cost-benefit. In order to achieve the sustainable development of enterprises and increased incomes, enhanced ability of employee, and a win-win situation between enterprises and their employees.

REFERENCES

- [1] Grays. Becker; Human Capital: A Theoretical Analysis with Special reference to Education, New York: Columbia University Press for the NBER, **44**, 515-526 (1964).
- [2] Xu Guang-Hua, Chen Wan-Ming, Wang Huai-Ming; Research of enterprise's residual income distribution pattern based on the human capital and capital game, Management world, **6**, 149-150 (2006).
- [3] Li Xiang-Ping, HaoKe-Ming; The influence of on-the-job training on the staff income growth and professional development, Beijing university educational review, **1**, 150-160 (2007).
- [4] Yao Xian-Guo, Weng Jie; The study of enterprise's investment to human capital, China industrial economy, **2**, 87-95 (2005).
- [5] Liu Xiang-Li; The analysis of status of enterprise's staff training in our country, China industrial economy, **7**, 63-67

(2000).

- [6] Ricardo Rejas-Muslera, Alfonso Urquiza, Isabel Cepeda; Competency-Based Model through It: An Action Research Project, *Systemic Practice and Action Research*, **25(2)**, 117-135 (2012).
- [7] L. Mark, Lengnick-Hall, A. Cynthia, Lengnick-Hall, Leticia S. Andrade, Brian Drake; Strategic human resource management: The evolution of the field, *Human Resource Management Review*, **19(2)**, 64-85 (2009).
- [8] Herman Aguinis, Kurt Kraiger; Benefits of Training and Development for Individuals and Teams, *Organizations and Society*, *Annual Review of Psychology*, **60**, 451-474 (2009).