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## RESEARCH ARTICLE

### AN ECONOMIC ASPECT OF HUMAN CAPITAL FORMATION

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#### ABSTRACT

Education in every sense is one of the fundamental factors of economic development. No country can achieve sustainable economic development without substantial investment in human capital. In fact, Economic development is a complex process in which financial and human capital are combined in sophisticated and productive ways, and that is why certain countries advance in this process much more rapidly than others. So the human capital and physical capital are both required for economic development and that each has a positive external effect on the productivity of the other. No nation could achieve sustainable economic development without substantial investment in human capital. From the point of view of Economics teachers may be considered as suppliers of inputs and employer may be supposed to be suppliers of output in the form of service. Hence employer's objective should be to maximize net return. Here output is quality education provided to the student community and it is not quantifiable, where as costs involved in providing such quality education is quantifiable. Thus net return is measured in terms of extent of quality education provided at the cheapest possible cost. Usual maximization exercise cannot be carried out here, as both of the benefits and cost are not measured in same unit. The most appropriate economic tool that can be exploited to analyse the situation is cost-benefit analysis and therefore the optimal situation requires attainment of greatest possible benefit at cheapest possible cost. Coming to the case of operational part only feasibility open to the employer is to ensure minimal wastage and therefore salary must be dependent on the extent of quality education provided to the student community. process by which quality education can be imparted is to cultivate professionalism in teaching and the most economic way of ensuring cultivation of professionalism is to make gross salary dependent on the performance of a teacher. The object of my article is to discuss the economics of professionalism in this noble profession. Here I have tried to provide some effective measures, which will incorporate professionalism in teaching in most economic way. The term professionalism refers to dedication towards the profession. Therefore professionalism in teaching includes retention of teaching skill, feeling comfortable to teach various papers within the reasonable limit, willingness to expand knowledge and so on. Hence our objective is to identify some factors, which will economically determine the salary of teachers having some factors, which will economically determine the salary of teachers having some professional character. Section-I of this article deals with determination of Basic Pay, Section- II deals with determination of Gross Salary, section -III deals with modification of promotional scheme, Section- IV deals with economics of the scheme prescribed and section- V contains concluding observations.

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#### INTRODUCTION

Education in every sense is one of the fundamental factors of economic development. No country can achieve sustainable economic development without substantial investment in human capital. Education enriches people's understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefits to individuals and society.

Education raises people's productivity and creativity and promotes entrepreneurship and technological advances. In addition it plays a very crucial role in securing economic and social progress. In fact, Economic development is a complex process in which financial and human capital are combined in sophisticated and productive ways, and that is why certain countries advance in this process much more rapidly than others. Few centuries ago, Adam Smith identified, "the acquired abilities of all the inhabitants are a kind of capital," what is now called "human capital," as one of the four types of fixed capital that contribute to production in a national economy.

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Some economists began to wonder if poor countries might be poor because they lacked human capital. They deduced that rich countries devastated in World War II were able to quickly employ massive amounts of new physical capital, while the poorest countries seemed unable to successfully utilize even small amounts. They theorized that a nation's capability to productively use physical capital is a function of its level of human capital and that if human capital does not increase along with physical capital, then economic development cannot proceed. In addition, it is notified that human capital is more likely to be the constraint to development because foreign investors are eager to invest in physical capital, but not in human capital. Economists now accept that investment in education, or human capital, is an important element in the economic development process. Actually, the human capital and physical capital are complementary and education has both direct and indirect effects on national income. So the human capital and physical capital are both required for economic development and that each has a positive external effect on the productivity of the other. No nation could achieve sustainable economic development without substantial investment in human capital.

Teaching is said to be a noble profession and at the present moment it is a lucrative job too. On the other hand teaching community has become an object of criticism. There are several reasons of such criticism. Before 70's teachers were respected by everyone. Now a days they are accused of lacking their devotion and honesty to the profession, irregular attendance, unwillingness to take scheduled classes. Some of them are reluctant to extend co-operation with their students. They are not sincere in evaluating answer scripts. They are more keen in giving tuition and money making. In order to make teachers more professional rather than commercial UGC has adopted some reform measures by linking promotion to mandatory participation in orientation programme and refresher courses or doing Ph.D. dissertation. Majority of the teaching community could not welcome them and tried to find faults with them. I also raised the question whether they will actually make us professional. Given the fact that the employer cannot perfectly monitor the actions of the teachers their salary should be determined objectively. Dr. Tarun Kabiraj in his article entitled "An Incentive Based Salary of A Teacher" (2003) has identified some variables like proportion of total working days in a year a teacher was present, proportion of classes a teacher had taken out of the scheduled number of classes, teacher's teaching capability reflected in the results of the board or university examination, students evaluation of a teacher, evaluation by the nearest boss and research activities carried out by a teacher to determine the gross salary of a teacher. All these are in tune with the UGC guidelines and one can easily find faults with these variables. The performance of a teacher is such a thing that the proportion of total working days in a year he was present is necessary but not sufficient to produce quality output in terms of effective teaching. Same is the case for proportion of classes taken by a teacher in a year. Taking classes is necessary but not sufficient to impart effective education to the students. Hence performance and thereby salary of a teacher should not be determined by the consideration of proportion of total working days in a year a teacher was present and / or proportion of classes taken in a year. Coming to the case of teaching capability and related efforts we note that results of board or university examination does not reflect the extent of

teaching capability of a teacher whenever students take tuition from their private tutors. Results actually become then the fruits of combined efforts devoted by teachers serving in institute as well as by private tutors. So results, at least in what way Dr. Kabiraj has suggested, should not be taken into account while we are going to determine salary of a teacher. As regards evaluation made by students theoretically nothing can be opposed. But problem lies with the implementation part. If students of an institute come to know that a teacher's salary is dependent on their evaluation there is every possibility that a teacher becomes a victim of politics. Therefore students' evaluation should be made impartial and free from corruption. It is next to impossibility. Here teacher must be compensated by evaluation made by other sets of students. Similar is the case for evaluation by nearest boss. It is also not free from personal and/or political association. A Teacher's salary should not depend on liking or disliking of the boss. The object of my article is to discuss the economics of professionalism in this noble profession. Here I have tried to provide some effective measures, which will incorporate professionalism in teaching in most economic way. The term professionalism refers to dedication towards the profession. Therefore professionalism in teaching includes retention of teaching skill, feeling comfortable to teach various papers within the reasonable limit, willingness to expand knowledge and so on. Hence our objective is to identify some factors, which will economically determine the salary of teachers having some factors, which will economically determine the salary of teachers having some professional character. Section-I of this article deals with determination of Basic Pay, Section-II deals with determination of Gross Salary, section-III deals with modification of promotional scheme, Section-IV deals with economics of the scheme prescribed and section-V contains concluding observations.

### Section-I: Determination of Basic Pay:

There should of course be some desired minimum qualification for a particular position in the job. This minimum qualification would vary depending on the particular position in the job and it will determine the basic pay of the concerned teacher. As in between two revisions of pay scale there occurs inflation and Dearness Allowance is given at a uniform rate throughout a specific period of time following a galloping pattern, this basic pay should be revised depending on the rate of inflation. In order to compensate a teacher properly in the face of inflation basic pay should be revised by taking into account the Cost of Living Index (CLI). Let us consider that depending on the both absolute and relative importance of the job a basic pay  $\alpha_0$  has been fixed per month. After certain time period  $t$ , if it is found that the CLI has become  $(1+h)\%$  then there should be  $h\%$  increase in the basic pay  $\alpha_0$ . Thus the required basic pay would be:  $\alpha_t = \alpha_0(1+h/100)$ .

### Section-II: Determination of Gross Salary:

The basic pay prescribed in section I should be the Gross Salary at the Starting year  $t$ . After getting this Gross Salary at the starting year there arises the question of annual increment. The amount of increment should be based on a teacher's satisfactory performance. Now there are several factors that will capture a teacher's satisfactory performance. Let us discuss them one by one.

Retention of teaching skill: Before giving increment it should be checked whether he has retained his teaching skill. For this he is to be engaged for some time in other two institutions of distinctly different standard. If we classify the educational Institutions into three categories viz reputed institution, average institution and below average institution, including his original institution he will have to teach students of three institutions and be consequently evaluated by three distinct set of students. It is a fact that evaluation made by students of a reputed institute will provide a better indication of his teaching skill. Hence scores obtained in three distinct cases should be given varying weights. Giving  $\gamma_1$  weight to score obtained from a reputed institution,  $\gamma_2$  weight to score from an average institution and  $\gamma_3$  weight to score from below average institution, given that  $\gamma_1 + \gamma_2 + \gamma_3 = 1$  and expressing weighted average of three scores as percentage of total marks awarded in an evaluation we will get a measure of degree of retention of his teaching skill. Let us call this percentage to be  $X_1$ . Higher the value of  $X_1$  higher would be the degree of retention of teaching skill.

**Comfort ability to reallocation of papers:** As a teacher one should be capable of teaching various papers within his reasonable limit and in no way he should express his inability or discomfort while he is entrusted to deal with a different paper. Such inability or discomfort is clearly against the character of a dedicated teacher. Hence before giving increment a teacher's comfort ability towards re-allocation of paper is to be checked as higher degree of comfort ability will indicate his higher degree of satisfactory performance. This comfort ability is to be tested by assigning two different papers to him while he is being engaged in other two institutions and with this assignment the variable  $X_1$  can be converted into  $\hat{X}_1$

**Willingness to expand knowledge:** So far as teaching is concerned willingness to expand knowledge is very much essential and it is reflected through carrying out research work, publication or papers or articles, attending seminar, guiding research work and so on. At present UGC guidelines have incorporated all of them by linking them with promotion to higher scale. Moreover guiding research works would make a University teacher eligible to be promoted to higher scale. Undoubtedly all these are supposed to lead to have expansion of knowledge. But what is actually happening in majority of the cases is that quality of research work has drastically come down. Research has lost its true spirit and it has happened due to the existing norms or guidelines of UGC. By this kind of argument I don't want to mean that no quality research work is coming out. Being the victim of the situation one is compelled to follow such escape route. Therefore in my opinion carrying out research work and guiding research work should be associated with the salary of a teacher in a stringent fashion. Here a research work in his own field of specialization should be encouraged. A quality research should be that work which has its contribution either to the practical field of application or to the academicians by shaking their thoughts and ideas. If promotion is held up due to lack of a Ph.D. degree, obviously a vicious racket would surely develop. Hence research work should provide little financial benefit so that those who are keen on carrying out research work get encouraged and quality of work can be ensured. If it is taken for granted that completion of a good quality research requires at least five

years, number of years of service rendered divided by five would give us the optimal number of research work to be carried out. Now number of research work actually completed divided by the optimum number of research work to be done would give us the index of a teacher's performance in the field of research work and that is actually captured by five times number of research work completed divided by number of years of service. Let us call it to be  $\hat{X}_2$ . Analogous reasoning can also be applied in case of publication of papers or articles and taking that publication of at least two articles or papers in a year is optimal we can define  $\hat{X}_3$  as ratio of number of articles or papers published to twice the number of years of service and this would capture a teacher's performance in the field of publication of articles or papers. As guiding more than two research scholars at a time results in qualitative degradation of research work let us assume that guiding two research scholars at a time is optimal. Hence two and half times number of research works guided divided by number or years or service would give us an index of a guide's performance in the field of guiding research work. Let us take this index to be  $\hat{X}_4$ . At present to be promoted to a higher scale a teacher must face a screening Committee that will evaluate his performance on the basis of, among a number of criteria, number of seminar papers presented. Taking that at least two seminar papers must be presented in an academic year we can define  $\hat{X}_5$  as number of seminar papers presented divided by twice the number of years of service. Now the formal model which may be utilized to determine a teacher's gross salary at  $(t+r)$ th period of time is as follows:

$$S_{t+r} = \alpha_t [1 + \beta_1 \hat{X}_1^{t+r} + \beta_2 \hat{X}_2^{t+r} + \beta_3 \hat{X}_3^{t+r} + \beta_4 \hat{X}_4^{t+r} + \beta_5 \hat{X}_5^{t+r}]$$

Where  $\beta$  coefficients are the relative importance or weights of the associated factors in determining gross salary. As our objective is to make gross salary dependent on satisfactory performance weights should be given accordingly. Maximum weight is to be given to evaluation made by students and diminishing weights should be attached to research work, publication of papers or articles, guiding research work, attending seminar respectively. Hence  $\beta_1 > \beta_2 > \beta_3 > \beta_4 > \beta_5$  and the reason of attaching maximum weight to evaluation made by students is that students are the best judge of a teacher's performance. Regarding weights more than fifty percent weight is to be given to evaluation made by students and research work carried out by a teacher as they constitute the most effective components of measuring rod of satisfactory performance of a teacher. Further it is to be kept in mind that the sum of weights must be equal to unity.

**Section-III: Promotion:** In case of promotion to higher scale at present we are following discriminating approach based on the entry point. A post Graduate teacher serving in school is subject to one kind of promotional scheme and a college teacher is subject to a different promotional scheme. In case of colleges and universities we have discrimination too. While in colleges there is no provision of joining a post of higher scale, it is possible in case of university and the norm for such recruitment is sometimes quite relaxable. Here comes the question of discrimination, Some may argue in favour of such discrimination but my evil spirit can't help being critical on

them. I therefore suggest some modifications in promotional scheme and the suggested modifications should be based on the following principles:

- Tiers of scale should be uniform in very level of teaching if minimum qualification remains the same at the entry point to avoid discrimination.
- Double benefit such as promotional benefit and incremental benefit for a research work (either M. Phil or Ph.D.) should be replaced by single benefit and that should be given in the form of higher gross salary following the rule suggested in section - I as double benefit implies attaching much more importance than that what ought to be.
- There should not be any provision of exceptional case like recruitment or promotion of a candidate with extra ordinary merit as such provision may be misused in some cases. Genuine extra ordinary merit must be rewarded in the form of higher gross salary as has been suggested earlier.
- Basic pay of every higher scale should be adjusted by following the rule suggested in section-I to capture the impact of inflation properly.

#### **Section IV; Economics of the scheme prescribed:**

From the point of view of Economics teachers may be considered as suppliers of inputs and employer may be supposed to be suppliers of output in the form of service. Hence employer's objective should be to maximize net return. Here output is quality education provided to the student community and it is not quantifiable, whereas costs involved in providing such quality education is quantifiable. Thus net return is measured in terms of extent of quality education provided at the cheapest possible cost. Usual maximization exercise cannot be carried out here, as both of the benefits and cost are not measured in same unit. The most appropriate economic tool that can be exploited to analyse the situation is cost-benefit analysis and therefore the optimal situation requires attainment of greatest possible benefit at cheapest possible cost. Coming to the case of operational part only feasibility open to the employer is to ensure minimal wastage and therefore salary must be dependent on the extent of quality education provided to the student community. process by which quality education can be imparted is to cultivate professionalism in teaching and the most economic way of ensuring cultivation of professionalism is to make gross salary dependent on the performance of a teacher.

Regarding the estimation of a teacher's performance one should take into account the factors or indices described in section-1. Coming to the case of modifications in promotional scheme we find that such modifications would result in considerable economy in the expenses to be incurred but not at the cost of quality of education. Quality education would be guaranteed with minimum expense incurred by the employer. Here lies the economics of Professionalism in teaching. In fact it is an output based royalty scheme. As per existing Practice the gross salary includes house rent allowance, medical allowance etc and in our model those allowances may be incorporated in the form of lump sum amount into our basic pay. So far as existing practice is concerned Dearness Allowance is given to compensate teachers in the face of inflation. As time-to-time revision of D.A. percentage follows galloping pattern the present system fails to compensate

teachers properly and therefore instead of D.A. basic is proposed to be adjusted in accordance with the CLI.

#### **Section-V:**

#### **Concluding observations:**

Given the above scheme teachers who devote lot of time in teaching and research will be gainers in terms of higher gross salary. On the other hand they who spend a lot of time in other practices like politics, giving private tuition etc will be looser in terms of lower gross salary. Thus they who are performing their duties properly and sincerely will be rewarded and thereby the wastage of money will be checked. The prescribed scheme has its advantage of simplicity and it is easily operative. Only difficulty lies in engaging teachers in other institutions. But whenever we will be habituated, such practice would not seem to be inconvenient at all. In this model the number of days a teacher attended his original institution and number of classes he has taken out of his total allotment have become redundant as their importance will be captured by the teacher's score obtained from the evaluation made by the students. If we follow this model we may get maximum returns by incurring minimum possible cost. I do not claim that I am suggesting a full-proof mechanism. No system is full-proof I just want to provide a mechanism by which dedication to profession would be rewarded in a meaningful way. Those who are dedicated towards the profession may be hurt in mind. But there are some who think that they can not be controlled just through money and they bother little about monetary benefit. These people can no way be motivated to perform better. But following the scheme prescribed in section-II wastage of money can be checked. On the other hand through simultaneous working of rewards and punishment real sincerity will be valued. Another advantage of the scheme is to save the teaching community from awful criticisms. At least the scheme may allow the teaching community to regain their respect and social prestige.

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