

The Impact of Participating in Human Resource Development Activities on Individuals' Job Level and Income

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This paper addresses the question as to whether individuals benefit from participating in HRD activities. In particular, the question is addressed whether participating in these activities lead to a higher job level and/or higher income. The results, obtained through means of a linear regression analysis and based on a sample of 1957 respondents, show that participating in HRD activities has a significant but modest impact on individuals' job level. In fact, HRD activities are the secondly most explaining group of variables with regard to the variance in job level. Subsequently, participation in HRD activities has also a significant, but very small impact on individuals' income. Other variables included in the analysis, such as gender, level of initial qualification, work experience, and job level explain far more of the variance in income.

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Education in our modern society seems to be more and more a prerequisite to obtain attractive jobs with high incomes. It is said that a successful career is a result of initial education (Becker, 1975; Boon, 1993; Meesters, 1992; Peschar & Wesselingh, 1995; Oosterbeek, 1992; Thijssen, 1995; Tuijnman, 1993). Especially from the educational level great benefits can be expected further in one's career. The long tradition of research into the relationship between educational level and income confirms this repeatedly.

Basis for this notion lies in the Human Capital theory developed by Becker (1975). In this theory students are thought to be investors, making a choice between spending time on income-generating activities and spending time on educational activities. In line with micro-economic thought, it is assumed that the income received as a result of time spent in education is the benefit the student strives to maximize in order to maximize his utility. The main focus of studies using this framework has been to determine the actual returns of education to the individual.

In the Netherlands an important contribution is delivered by Glebbeek (1993), who has developed and studied a model for estimating effects of initial education on career development. He has found that education has a direct influence on income (.35), and an indirect influence via jobs persons held in the past (.71), jobs they hold later in their career (.45), and management functions they hold (.32). The magnitude of this indirect influence on income is .15. Peschar & Wesselingh (1995) conclude that this means that persons with the same jobs have different incomes according to the differences in their educational history. They state that this is according to the human capital theory that states that more education always pays.

The most recent development in this field is summarized by McMahan (1997). In this review he states that researchers over the last years have attempted to arrive at a comprehensive estimate of the current total returns to education as objective as possible, that is, to estimate these returns without overestimation or underestimation. As a result, economists have more than ever been able to detect the true effect of education on earnings. Moreover, these results show that some of the returns to education may have been seriously underestimated in the past.

But what can be said of the returns of HRD activities? Do they also pay off? We know that because of many economic, social and technological developments production and services processes change rapidly and that work becomes more and more complex (Barham & Rassam, 1989; Bergenhenegouwen et al., 1995; Bomers, 1990; Diedrich, 1988; Dixon, 1992; Tjepkema, 1995; Tuijnman & Van der Kamp, 1995). Over time the value of initial qualifications decreases and the individual's employability can only be guaranteed by additional HRD activities. So there is a need to permanently invest in HRD activities after individuals have entered the labor market.

Mincer (1979, 1989) has built on this idea by stating that individuals, after they have finished their initial education and have entered the labor market, guarantee their employability by continuously investing in HRD activities. Moreover, his theory predicts that these activities increase their human capital, which in turn leads to a higher income on the labor market. This notion is supported by several studies investigating the effects of

participating in corporate training. For instance, a study conducted by Groot (1994) in the Netherlands showed that participants of corporate training earn 11% more than non-participating members of the work force. Similar results were found in studies conducted by Barron, Black & Loewenstein (1989), Holzer (1988) and Mincer (1989). However, other results can be found in studies conducted by Boon (1993) and Tuijnman (1989). These studies found that HRD activities had no impact at all.

This paper builds on the notion developed by Mincer by exploring the effect of HRD activities on the income of higher educated professionals. In this paper HRD activities are considered as any post-initial training activities that are aimed at improving the personal employability or at developing oneself personally. More operationally, HRD activities are defined as all types of training activities that range from short but thorough management or communication training activities, follow-up language courses or software training modules, more specialistic corporate training development programs, to extensive, formalized post academic studies or Masters of Science programmes. All respondents were explicitly asked to refer to these types of HRD activities only.

The relationship between HRD activities and income is difficult to study, as there are many variables related to the distribution of income. Work experience is one important example (Cohn & Geske, 1990), in particular since it can act as a substitute for training and education. Moreover, research has shown that there are gender differences and differences between workers in different economic sectors: *ceteris paribus* women end up in less managerial positions and earn less too, while workers in the profit sector earn more than workers in the non-profit sector (Meesters, 1992). Given these other factors affecting income, the general research question we try to answer is:

Do Human Resource Development activities affect future job level and income of higher educated professionals?

Subquestions are:

- *Is there any relationship between Human Resource Development activities on the one side and job level and income of higher educated professionals on the other side?*
- *How strong is this relationship?*
- *How can this relationship be seen in comparison to the effect of other variables such as gender, initial education, work experience, job level and labor market?*

Methodology

Conceptual Framework

Based on the literature described above the following exploratory model was developed to study the research question at hand:

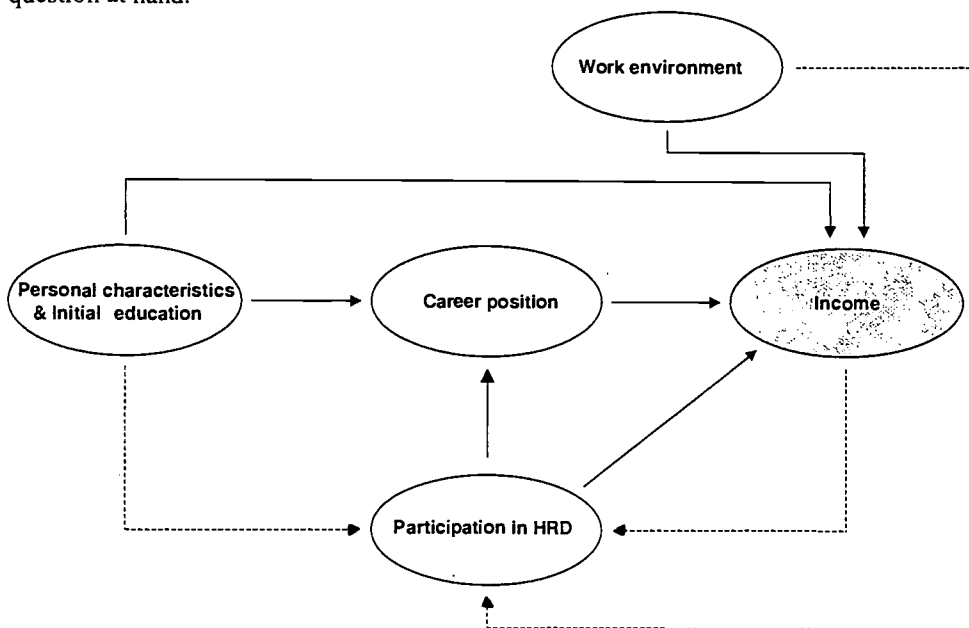


Figure 1

Exploratory model of the relationship between participating in HRD activities on the one side and job level and income of higher educated professionals on the other side

Firstly, this model proposes that personal characteristics (such as gender, work experience and career expectations) and initial education (especially educational level but also field) affect individuals' career position, income and participation in HRD activities. Secondly, it proposes that participation in HRD activities affect individuals' career position and their income directly. Thirdly, it assumes that participation in HRD activities affects income indirectly by promoting their career position. Finally, the model takes into account that income and participation in HRD activities are a function of environmental factors such as the economic sector of the organization and the size of the organization.

As can be seen, the exploratory model has been limited slightly. Only the relationships marked with solid arrows have been tested in the model mentioned above. The relationships with dashed arrows have been left out of consideration.

Operationalization

To test the exploratory model a questionnaire has been developed. The resulting questionnaire comprises 59 questions in the following categories: 1. General questions, 2. Highest initial education, 3. Start on the labor market, 4. Career history, 5. Present situation, 6. Career intentions, 7. Additional training history, 8. Most important additional training program, and 9. Plans for further participation in training.

These categories all reflect relevant issues in the literature concerning individuals' career development and are directly related to the variables in the exploratory model. More specifically, the following variables are selected:

Personal characteristics

- Gender (0=female, 1=male);
- Social background (0=parents without any vocational college or university degree, 1=parents with a vocational college certificate or university degree);

- Number of years of work experience (#);
- Received a higher qualification of a regular educational institution (0=no, 1=yes);
- Career ambition (5 items).

Initial education

- Level of initial education (0=vocational college; 1=university);
- Field of initial education (0=with very good prospects on labor market, 1=with less good prospects on labor market);
- Perceived quality of initial education (11 items).

Participation in HRD

- Total time (in working weeks) spent on short training programs per year (#);
- Total time (in working weeks) spent on long training programs per year (#);
- Nature of most important training program (0=specialization/updating, 1=retraining);
- Individual's goal of most important training program (0=personal development, 1=career development);
- Total time (in working weeks) spent on most important training program (#);
- Certification of most important training program (0=no, 1=yes);
- Perceived career effect of most important training program (8 items);
- Perceived personal value of most important training program (7 items).

Career position

- Job level (5 categories).

Work environment

- Economic sector of the organization (0= profit, 1=non-profit).
- Size of the organization (number of employees);
- Organizational training facilities (0=no, 1=yes).

Income

- Gross earnings per annum (corrected for size of the job i.e. the number of hours an individual works per week; 20 categories).

The meaning of most variables is clear, except (may be) the variables perceived quality of the initial education, perceived personal value and career effect of the most important training program, and a person's career ambition. The first variable measures the contribution of the initial education to finding a job. Therefore, participants in the survey were asked to indicate whether or not their initial education contributed to aspects such as finding a job easily, finding a job with high salary, finding a job with good career prospects etc. The second and third variable measure the contribution of the most important additional training program to a person's personal c.q. career development. In case of the contribution of the most important training program to someone's personal development the participants were asked to express this contribution in terms of whether it has supported their personal development and has raised one's work motivation, the extent to which the program has contributed to a better social functioning, or has resulted in an increased number of social contacts. In the same way participants were asked to express the career developmental effect of the most important training program in terms of an increased employability, the extent to which this training program has supported one's own career development or has resulted in promotion within the organization, the extent to which the program has contributed to a better position on the labor market, whether it has resulted in a higher salary, or has led to a management function within the organization. The fourth variable, career ambition, refers to the extent to which a person is explicitly motivated extrinsically and in making a career, instead of being more intrinsically motivated and interested in personal development. To measure this participants were asked to indicate the extent to which they attached and still attach great importance to highly economical working conditions such as having or finding a professional job, primary and secondary working conditions, career perspectives and promotion possibilities, or HRD facilities. The variable income (gross earnings per annum corrected for the size of the job) is measured in twenty blocks of 10.000 Dutch guilders (this equals with blocks of 4,538 Euro) each.

A linear regression analysis was conducted to test the proposed model. Additionally, in order to obtain a better view of the exact relationship between the variables also a path analysis will be conducted to test the model. The results of this last analysis are not presented here, but are to be discussed at the AHRD conference.

Data collection

The data on which the study is based comes from a study that is conducted for a national weekly magazine (with a readership of over 250,000 persons) with a large number of advertisements for jobs for higher educated employees. This study started in 1995 with a base-line measurement. It was repeated with a slightly changed questionnaire in 1996, which one in turn was further improved and repeated in 1998 (De Jong, Witziers, & Mulder, 1999). And the fourth measurement will be conducted in the end of the year 2000. The results presented in this paper are from the data that were collected in 1998.

Sample

The questionnaire is published in the magazine on December 10th, 1998. Apart from that 5,000 printed copies were sent by direct mail to a random selection from the readership. The number of respondents was 1,957. From the 5,000 questionnaires that were sent by direct mail, 1050 came back; from the magazine, the remaining 907 were returned. Although the response rate is relatively small, the total number of respondents is large enough to make a valid statement about HRD for higher educated employees, and the relationship between HRD and income.

For the readership mostly consists of higher educated employees with engineering, information technology, economics and financial backgrounds, one must take this into account with respect to the results of this study.

Results

Based on linear regression analysis results (see Table 1) show that the most important factors contributing to job level are level of initial education, number of years of work experience, economic sector of the organization and perceived career effect of the most important training program. More specifically, this implies that higher positions are held by university graduates, workers with more work experience, and workers in the profit sector. With respect to the participation in HRD activities four indicators have a significant relationship with job level. The negative relationship with the nature of the most important training program means that the higher job levels persons hold, the more they appear to participate in HRD activities focussed on specialization/updating instead of retraining. The negative relationship with the individual's goal of the most important training program means that the higher job levels persons hold, the less their HRD activities are focussed on personal development instead of on career development. Furthermore, the negative relationship between the perceived personal value of the most important training program and job level implies that the more this program has been perceived as supporting mostly personal needs, the less it could – and will – contribute to obtain or guarantees higher positions. Vice versa, the positive relationship with the perceived career effect of the most important training program means that workers who experienced substantial career developmental effect of their most important additional training program now indeed hold higher positions. Especially this last variable, the perceived career effect of the most important additional training program, has a relative substantial impact on job level. When all four indicators of HRD activities are considered, results show that they have a modest effect on job level; 5.5% of the variance in job level is explained by these HRD activities.

Table 1

Linear regression analysis on the exploratory model concerning the relationship between HRD activities and job level

Cluster	Model	R ²	Variable	Standardized Regression coefficient	T-value	Sign. level*
Personal characteristics	1	.212	Number of years of work experience	.50	18.70	.000
Initial education	2	.223	Level of initial education	.13	4.89	.000
Work environment	3	.232	Economic sector of the organization	-.09	-3.56	.000
Participation in HRD	4	.287	Nature of most important training program	-.06	-2.50	.013
			Individual's goal of training program	-.11	-4.26	.001
			Perceived personal value of most important training program	-.07	-2.24	.025
			Perceived career effect of most important training program	.24	7.52	.000

* = Significant at the .05-level

R² = 0.29

The results concerning the income variable show that many variables included in the analysis have a significant relationship with income (see Table 2). More specifically, this implies that most of the variables having a clear relationship with the variable job level, also directly affect the variable income in the same way. In other words, controlled for job level, men have a higher income than female workers, university graduates earn more than vocational education graduates, workers in the profit sector earn more than workers in the non-profit sector. Additionally, workers in larger organizations and having more work experience earn more than workers in smaller organizations and workers having less work experience. Finally, two variables concerning the participation in HRD activities have a significant relationship with income. The positive relationship between the perceived career effect of the most important training program and income implies that respondents stating that they perceived some career effect of their most important training program earn more than respondents stating this was less the case. The positive relationship with the total time spent on short training programs taken per year means that the more people yearly participate in short training programs and the more time this all requires in terms of the number of working weeks a person is busy with such programs, the more these people will earn. But the impact of HRD activities is very small. Only 0.6% of the variance in income is explained by these HRD activities. As such, the main conclusion is that participation in HRD activities has an impact on respondents' income, but this impact is modest and must certainly not be exaggerated.

Table 2

Linear regression analysis on the exploratory model concerning the relationship between HRD activities and income

Cluster	Model	R ²	Variable	Standardized Regression coefficient	T-value	Sign. level*
Personal characteristics	1	.358	Gender	-.17	-7.59	.000
			Number of years of work experience	.47	17.96	.000
Initial education	2	.422	Level of initial education	.22	8.73	.000
			Field of initial education	-.06	-2.20	.028
			Perceived quality of initial education	.09	3.77	.001
Career position	3	.522	Job level	.32	12.79	.000
Work environment		.561	Economic sector of the organization	-.19	-8.31	.000
			Size of the organization	.08	3.49	.001
Participation in HRD		.567	Total time spent on short training programs per year	.05	2.09	.037
			Perceived career effect of most important training program	.06	2.72	.007

* = Significant at the .05-level

R² = 0.57

Conclusion

The main conclusion of this paper is that most of the variables included in our model have a significant and positive relationship with job level and income. More specifically, gender, work experience, level of initial education and economic sector but also variables concerning the participation in HRD activities, such as the nature and goal of the most important training program, number of short training programs taken per year, and the perceived career effect of most important training program, have a significant relationship with either job level and/or income. Moreover, the direction of the relationships is in most cases in the expected direction. That is, our results are in line with either theoretical notions and/or results from previous research. So, to go back to our general research question, the answer is positive. Human Resource Development activities do affect future job level and income of higher educated professionals.

Moreover, as far as the dependent variable job level is concerned, the impact of HRD activities is modest. Apart from the personal characteristics respondents benefit most from participation in HRD activities for obtaining a higher position. More specifically, after work experience HRD activities explain most of the variance in job level. However, the impact of HRD activities on the dependent variable income is a different story. It is not that strong as we might expect. It must be noted that variables relating to participating in HRD activities, although some of these variables show a significant relationship, their impact on the dependent variable income is anyhow very modest. Certainly if the impact of HRD activities is seen in comparison to the impact of other variables such as gender, initial education, work experience and economic sector. These other variables explain far more of the variance in income. In other words, participants of HRD activities also benefit from their participation in terms of getting a higher income, but this effect must not be exaggerated. As such, these results are in line with other studies (Barron, Black & Loewenstein, 1989; Groot, 1994; Holzer, 1988; Mincer, 1989). The results of these studies also show that participating in HRD activities does contribute to a higher job level and /or a higher income.

Concerning the question why participating in HRD activities in fact only pays off in terms of individuals' job level and does not automatically result in a higher income, in our view the most important reason for this is straightforward. Participating in HRD activities, in general, is a very logical way to develop one's career, but it is eventually one's actual career position in terms of employability that guarantees a certain income. In fact our model is showing this. The model postulates that participation in HRD activities affect individuals' career position directly, and that the participation in HRD activities mainly affects income indirectly by promoting their career position. The fact that in a few occasions see the participation in HRD activities already results in a higher income, must be attributed to the type of work and the role of HRD activities in such cases in our view. Certain jobs demand much HRD, because tasks are extremely function related and highly specialistic and/or knowledge base is changing rapidly here. So, in these exceptional cases one could say that 'HRD is money'.

How should the results be interpreted practically? The question here is what can be said about the variance in job level and income that is explained by HRD activities. As the results show participating in HRD activities has a significant, but modest impact on individuals' job level and only a very small impact on their income. However, the variances in job level and income explained by HRD activities refer to overall results. So, one should recognize that for the individual's career development and raise in income HRD activities might have a considerable effect, especially when seen in time as it can intensify itself.

Finally, we have to point at the limitations of our study. Our study is limited with respect to the measurement of several variables, including the income variable and the measurement of participation in HRD. These deficiencies can mask the true effect of participating in HRD activities. Furthermore, our exploratory model postulates causality based on the theoretical notions regarding career development, but this has not been proven empirically within this study. To do this you need a longitudinal research design with cohorts. But in the sector of corporate training for higher educated employees research is in most cases confined to a more practical, comparative design like ours.

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