Models and applications in psychological selection and evaluation

M. Anitei a,*, E. Buzea b

a University of Bucharest, Kogălniceanu 36-46 street, Bucharest, 050107, Romania

Abstract

Validating instruments is a complex procedure and it needs time and involvement from psychologists' part. From the point of view of executing the operations specific to the workplace, tasks and activities in order to obtain the wished / desired performances, the human operator will have to be rigorously psychologically evaluated. The evaluation is based on verifying those aptitudes, habituations and capacities necessary for a good development of the workplace activities. Hence, the paper highlights the role validating procedures play using the criteria (tasks, activities, operations and actions) and the methodology of validation.

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1. Introduction

This paper emphasizes the importance of work analysis in designing both the job descriptions and also of choosing the tests for psychological assessment of individuals according to the aptitudes, habituations and competences of the human operators but also with the operations, tasks and activities that he or she will develop within the workplace.

Therefore, abilities, skills, competences, feelings and interests, irrespective of how specific for an individual, they represent internal psychological realities which are covered and inaccessible through the instruments of direct knowledge (Pitariu & Chraif, 2009; Pitariu, Radu & Chraif, 2009). Allport, Vernon & Lindzey (1970) emphasizes that at the personality level, the same behavioural act can be determined in different individuals, of different psychological properties. In general, psychological measurement

* Mihai Anitei. Tel.: +40721232207
E-mail address: anitei_mihai@yahoo.com
concerns the problem of individual differences with direct reference to the features, particularities and psychological dimensions.

Psychological measurement, as appears in the psychodiagnostic report, represents estimations at the level of nominal, ordinal, interval scales (Pitariu & Chraif, 2009). Ratio scales are not used in psychological measurement for the theory of answering to one item or of state theory and latent features which received in the last years a considerable extension (Pitariu, 2007).

An important aspect connected to the use of tests and testing procedures for psychological evaluation refers to the intrinsic quality of these, of the indebtedness of respecting the norms and standards, as well as the statutory law (Aniței, Chraif, Schuhfried, & Sommer, 2011; Aniței, Schuhfried, & Chraif, 2011).

Concerning the psychological evaluation procedures, a few essential aspects must be taken into account: 1) requests about the test description (any psychological examination must be prepared. The base of designing a system for psychological selection was the main point of many research studies completed in the laboratory of Work and Transportation Psychology, University of Bucharest describing in detail the methodology of creating and validating a battery for psychological evaluation (Aniței, Chraif, Schuhfried, & Sommer, 2011; Aniței, Chraif, Vlăsceanu & Ciolacu, 2011; Schuhfried, Aniței & Chraif, 2010; Aniței, Schuhfried, Chraif, Vlasceanu, & Boriceanu, 2009).

Therefore, figure 1 shows an adaptation of the general traditional paradigm which is the base for the development of a research that aims at designing a recruitment and personnel selection system.

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Fig. 1. A strategy of developing a design for a personnel selection system (adapted after Smith and Robertson, 1993. Source: Pitariu, Radu & Chraif, (2009).
An analysis for personnel requests is always necessary before beginning personnel selection studies because it assumes the analysis of some statistics concerning the existent personnel such as hiring specialized personnel, professional performances of the existent personnel, the analysis of the individual jobs or of families, etc.

Starting from the fact that, in general, personnel selection aims at two objectives: choosing and the decision of hiring the personnel for an organization and the decision of changing the workplace or the job, within the organization, it is important to remember that one of the strengths of personnel selection like the fact that the notion of usefulness is more important than the one of candidate matching with the job’s characteristics. Usefulness refers to general results for the evaluation of the selection action as opposed to the objectives and the organization resources and the employees’ success in the context of the organizational environment (Roe, 1998; Schmidt and Hunter, 1998; Hunter and Hunter, 1984).

Bringing into discussion the convergent and discriminative validation as well as a study for convergent validation previously done, it can be observed that other types of scales can be applied and with their help the criterion is appreciated such as: measurement scales of observed behavior (BOS), scales of appreciation in qualitative steps. The advantage of the convergent validation method is that of offering an operational methodology for measuring the construct validation. Through a single correlation matrix it is possible to examine both the convergent validity and the discriminative one simultaneously (Pitariu & Chraif, 2009b). The multiple feature matrix multiple method is considered as an extremely rigorous method for measuring the construct validity. However, an advantage for this method is that each feature needs to be measured through several methods, it is about creating a crossed design or through multiple replies with multiple methods. The psychological tests which enter in the structure of an evaluation battery must be correspondingly validated and standardized for the population they are going to be used on.

An important approach in psychological selection methodology highlights the design of a selection procedure: the problem issue of professional performance prediction. Hence, this approach comes to highlight on a practical applied level, too, through an example, the importance of prediction in the psychological evaluation of the individual. As professional selection has as an objective to take from a population the best candidates who due to their aptitudes will do their best in a certain specialized job, a fundamental role in personnel selection is represented by the fact that different professions need the individualization of some aptitudes or different aptitudinal configurations and that these are measurable (Schuhfried, Sommer, Anitei & Chraif, 2010).

Through work analysis critical aspects of profession will be identified, those which are the most important in obtaining high qualitative professional performances. Next, the methodology of using the instrument F-JAS (Fleishman, 1975; Fleishman and Reilly, 1995) can be applied for selecting the aptitudes involved in that certain job.

The next activity for the psychologist, also specific to the first stage, consists in identifying the aptitude and competences profiles which are involved in his/her work, in the activities considered to be critical. The major phase and also the most important in the work of the psychologist consists in selecting from the existent psychological tests those who he/she considers would best estimate the aptitudes, habituations and competences which are specific to that certain job. Therefore, after all these stages are established (can be described) a model of criterion validation and the stages of this validation procedure can be described based on an example of designing a test battery for personnel selection taking into consideration the job description and the job specification (Pitariu & Chraif, 2009a, Pitariu, Radu & Chraif, 2009).
2. Conclusions and proposals

The selection and psychological evaluation for employment and periodic psychological evaluation (Pitariu, Radu & Chraif, 2009) are crucial steps in selecting future employees but also in periodically investigating their potential, skills and work habits. Psychological tools used in organizations should be validated before being used in the selection process and applied psychological assessment of personnel. The tools validation is a sophisticate procedure that takes time and involvement from psychologists. Through validation studies, it is emphasized the fundamental role that these validation procedures play, using the criteria (tasks, activities, operations and actions) and the validation methodology; also it is experimental performed in a first step, and also practical on subjects that are in a real exam situation without knowing that they are part of an investigation.

The aspects and particularities which concern the visual stimuli and their visual processing as well as the superior mechanisms which take place (perception, representation, memory and thinking) often have a strong impact on some characteristics of their workplace and some personal features of the human operator in executing the professional activity, of efficiently realizing activities and of achieving high performances in tasks at the workplace (Pitariu & Chraif, 2009c).

The benefits of the validation studies for personnel selection and psychological evaluation can be grouped in the following categories:

- **methodological benefits**: designing and validating psychological driving tests batteries for experimental aims designed from instruments and psychophysiological machines and designing and validating a battery used within the European Union for psychological evaluation in order to obtain the driving license which is also introduced in the European statutory law;
- **theoretical benefits**: designing experimental models for criteria validation for different areas of activity based on modern tests and instruments which are based on studies and researches from the most advanced domains of neuroscience and psychophysiology (chapter 1).
- **benefits concerning on how to apply the results**: obtaining data concerning the psychometric reactivity to visual stimuli, rigorously measuring visual perception and especially emphasizing stereoscopy to certain people. Underlying and highlighting the fact that within the workplace, employers must be periodically evaluated with the tests, instruments and machines which evaluate aptitudes, habituations and certain deficiencies. A superficial evaluation can lead to reduction of workplace performance reduction in achieving tasks but also in the impossibility of executing work activities.

This kind of information can be used by practitioner psychologists in order to plan actions such as: intervention actions like introducing cognitive-aptitudinal training for future employees or human operators who are in the production process; organizational psychodiagnostic actions; actions of executing job analysis in order to plan work analysis actions; actions of personnel periodical evaluation and much more.

References


