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The Role of Psychometrics in Selection of an Institutional Head for a CBSE School – A Study

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Abstract:

The emerging academic policies, coupled with the complex teaching and learning processes and the changing needs and attitudes of students calls for the robust selection process of the institutional head. It is the Principal who directs and influences the staff and students to reach their highest potential and goals. Schools have recognised the importance of the role and started to invest significantly in resources and sophisticated techniques to cherry pick the best leader (Principal). The focus of the consultant was to design a battery of tests to scientifically select the right fit to head a prestigious Central Board School of Gujarat. In the present study, 11 candidates were shortlisted from a pool of 600 candidates. 5 candidates were selected for the final assessment. They were put through a two day selection process that included psychometric assessment – followed by the work sample test and panel interview. The below paper explores the role and effectiveness of psychometric assessment in identifying the most competent candidate with regard to her competency, motivation and match to head the Institution.

Keywords: *Selection, Psychometric assessment, School Principal, Candidate match.*

I. INTRODUCTION

In the millennial era where new academic policies are being implemented, with complex changes in teaching and learning process and shifting student attitudes and personalities, it calls for an influential individual at the position of the Leader (Principal). It is the duty of the head of the school to direct and influence the staff as well as the students towards the attainment of specified goals. This initiates a pressing need for adopting progressive, scientific and contemporary methods that not only substantiate the validity and reliability for the recruitment results but also ensures the selection of an effective leader of the educational institute.

Approximately one-fourth of a school's impact on academic achievement can be attributed to the school leader. According to a study by Robert Marzano et al.(2005)(1), highly effective Principals raise the achievement of a typical student in their schools by between two and seven months of learning in a single school year, while ineffective Principals lower achievement by a similar amount. Principals are vitally important, yet ever rising accountability standards, limited authority over key decisions and mediocre pay make the job more and more demanding and less and less attractive to talented leaders. At a time, when schools need high quality leaders more than ever, the gruelling nature of job makes it a tough sell and hence Principals come and go. (high attrition and burn out)

The selection of Principals has not been a major focus of policy attention by merit, supplanted by centrally administered bureaucratic and hierarchical appointment systems based on seniority which can lead to allocation of incompetent educational heads. This suggests that selection of an institutional leader based on in-house seniority tends to be one of the greatest barriers to hiring excellent Principals that are high potential candidates. The trend of appointing Principals, with succession planning has produced a 'de facto' Principal selection process. In addition, more formal succession planning has itself arisen as an issue because of the perceived lack of quality candidates.

In this era a more active approach towards recruitment ought to be practiced to reduce the risk of poor hiring. Appropriate selection matters because poor recruitment costs time, money and effort – for the organization and all involved. The costs can be direct (for example - advertising, remuneration) or indirect (for example - performance problems, lower team morale, reduced productivity). Combined, they can add up to 2.5 times annual the salary of the role. Hence, a robust, well-considered recruitment process ensures that the approach is better able to select the best person for the role. And to avoid making the two common errors in recruitment namely- type a error -recruiting the wrong person, type b error- missing out recruiting the right person.

When it comes to selecting excellent leaders from the applicant pool, many organisations pursue the conventional process of CV and interview which is primitive and it does not provide a holistic analysis resulting in a non-satisfactory evaluation of the candidate's profile. Interview as an only tool for selection is prone to biases and lacks validity, as the candidates may give socially appropriate responses to the panel so as to impress them. This could even lead to an improper judgement where the selection does not match the job requirement hence leads to high attrition. Blackmore,

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Thomson and Barty (2006)(2) in their study 'Principal Selection Homosociability, the Search for Security and the Production of Normalized Principal Identities' suggests five hazards related to interview as a selection tool (1) the dependence of selection panels on a written application; (2) the dilemma of experience versus potential; (3) the covert rule about the appointment of preferred applicants; (4) the quandary of panel competency; and (5) the evidence of inconsistency of decisions.

Supporting this view point are four separate reviews of research on the Interview as a tool for selection (Mayfield, 1964; Ulrich and Trumbo, 1965; Wagner, 1949; and Wright, 1969)(3) mentioned in 'Social and situational determinants of interview decisions: implications for the employment interview.' N Schmitt (1976) - Wiley Online Library(3), in each of the reviews carried out by dozens of studies, concluded that the 'interview' as a recruitment in many employment situations lacks both reliability and validity.

Perfect Prediction - Validity

Smith, Gregg & Andrews - 1987
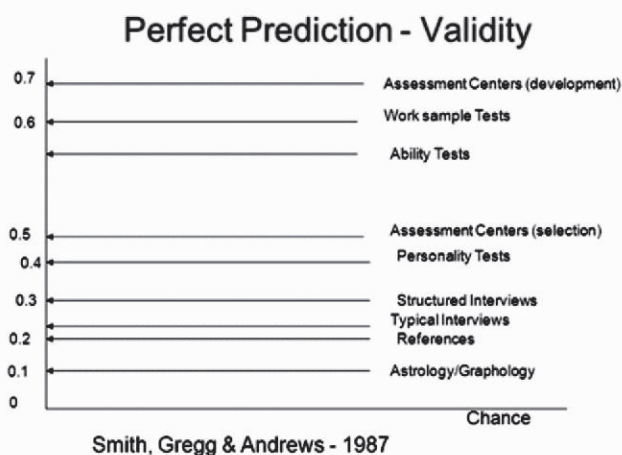
Therefore the question is - what are the most scientific tools to ensure the highest quality of selection? Smith, Gregg & Andres (1987)(4) studied the predictive validity of different tools used in selection. The below table provides a quantitative analysis of the validity of each tool.

Hence indicating the usefulness of multiple assessment tools as the safest way to select personnel.

Many organisations hire recruiting firms (an external body) who generate programs that are customised to suit specific organisational needs or requirements. One of the initial steps during the screening includes submission of CV and a pre assessment that includes analyzing the candidate's profile. This process provides a fundamental understanding of the candidate to the recruiter.

Since the conception of psychology, psychological tests have also been experimented by businesses and organizations. As Stone and Ruch (1979) and Beach (1980)(5) point out, causes of job failure stem more often from personality and related job adjustment problems rather than from ability problems. Thus personality tests like psychometric tests and projective tests are employed during the selection process of a candidate who would be considered as an ideal fit for the job.

Psychometric tests are employed to determine the personality type, aptitude, numerical and reasoning ability, emotional quotient of the individual and provide best information about whether a candidate is the best person for the job. It is made of a series of questions or statements and subjects must say if and how much they describe their behaviour by using a category rating. It provides a more objective evaluation of the candidate.Therefore, we need a set of different tools, which involve testing different faculties and behaviours of candidates. Any one tool cannot get all data. Each tool is effective for a specific set of relevant attributes.

This view is supported by one of the research papers "Use of Psychometric Test in Recruitment" by Paul .S (2013)(6), the research suggests that the emerging new trend in the field of recruitment is the use of Psychometric tests. The use of psychometric test has enabled the recruiters to select only the best candidates, the ones who prove to be an asset to the institution and these tests have also proven to be cost effective.

In psychology, a projective test is a personality test designed to let a person respond to ambiguous stimuli, presumably revealing hidden emotions and internal conflicts projected by the person into the test. The results of projective tests like Thematic Apperception Test or draw a person test gives a deeper understanding of the candidate's conflicts, motivations and attitudes.

S. A. Carless, (2009)(7), published a research paper on "Psychological testing for selection purposes: a guide to evidence-based practice for human resource professionals", concluded that combining psychological assessment with interview provides effective results in the selection process.The new recruitment models and methods that are being employed are extensive in nature and thus provide a detailed profile of the candidates that helps bridge the gap of job expectations and ideal personnel.

There are more than 1.4 million distinguished educational institutes in India with around 230 million students studying in them who are to be lead by profound heads. This research emphasises on the implementation of a more progressive and comprehensive recruitment techniques during the selection of a personnel that can undertake complex leadership responsibilities and requirements effectively. It also focuses on the issue faced by educational institutes who invest huge amounts of money in the Principals they recruit and if they are not able to perform as expected or are not able to adjust to the school culture or leave the school in a short period due to various reasons, the institute stands to lose on the investment it has made. Such scenarios can be prevented through exercising thorough recruitment procedures.

II. OBJECTIVE

The main objective of the exercise was to bring in rigour and objectivity in the selection procedure. A set of ten competencies were identified as critical to the role of a Principal and discussed with the consultant. The consultant's role was to get a deeper insight into the candidate vis-à-vis their behavioural attributes, qualities, beliefs and complexes. Kindly refer the below given table for the list of competencies with definition.

Table: Behavioural Competencies for Principal's Role

1. Reasoning Ability:
   - Measures the type of interest one has ranging from being a concrete and practical, hands-on thinker to being a conceptual or abstract thinker. It also measures one's ability of grasp and learn new information.

2. Emotional well-being and sensitivity:
   - Measures the level of emotional maturity, consistency and stability one expresses.
   - Measures the level of emotional dependency needs versus self-reliance one expresses.

3. Self-esteem and self-worth:
   - Measures the degree of self-confidence, security and self-control one exhibits in a group.
   - Measures how cheerful, active, spontaneous and expressive one is. The degree of freedom and self-control one values.

4. Openness to Change:
   - Measures the ability to take risks, experiment and examine new things with curiosity and an open mind.

5. Social Skills:
   - Measures the level of sociability, extroversion and fun, one has participating in group activities and tasks.
   - Measures the level of social skills, emotional expression and belongingness to a group.

6. Planning and Organizing:
   - Measures the level of self-control one has (consistency) in an environment that has rules, and discipline. It indicates the self-image and self-respect one expresses.
   - Measures the degree of planning, organizing and social conformity of an individual.

7. Stress Management:
   - Measures the match between the level of aspiration and performance – (initiative). It indicates physical-mental balance and stability.
   - Measures the degree of conventionality and absorption within the self as well as the sensitivity one shows towards others.

8. Integrity and Consciousness:
   - Measures the internal consistency of set standard rules and conformance.
   - Ability to stick to the values, culture and norms of society but just not by conformity but inner belief and values.

9. Communication Skills: (Written and Spoken)
   - Measures the ability to comprehend and articulate language in a socially appropriate manner that is understood by majority of people.
   - Ability to express one's ideas, thoughts, feelings, and actions through the appropriate use of language.

10. Leadership Skills:
    - Measures the person's ability to plan, lead and mentor talent.
    - Ability to communicate, listen and perform by leading with example.

The study had two key objectives namely: -

1. To ensure minimum errors in selecting the right candidate (not missing on the right candidate, and selecting the wrong candidate).

2. To scientifically select the most suitable candidate for the job and cultural fit of the role of a Principal using multiple assessments tools.
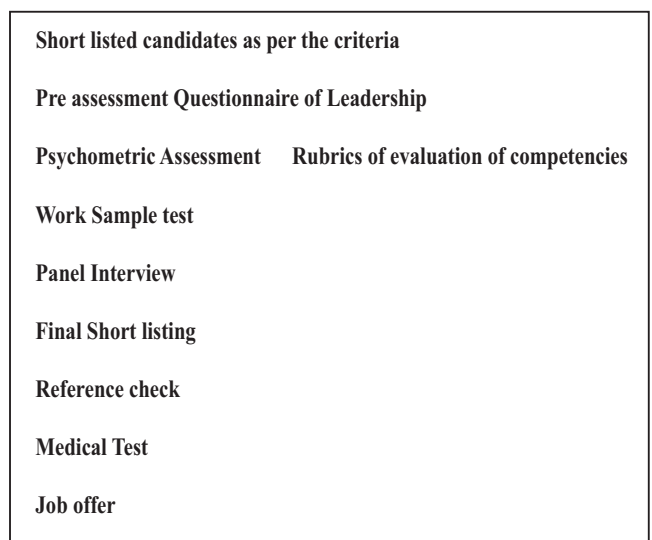
School authorities had had two disappointing experiences of retaining Principals in the past. They depended on the Panel Interviews as a sole form of selection. The approach did not bear fruits. Considering the cost of recruitment, the authorities realised that they could not afford to repeat the past mistakes. In order to bring order and rigour into the process, the management invited the consultant to join the selection team.

III. DESIGN AND METHODOLOGY

Recruitment Process consisted of an All India Advertisement– with a minimum criteria of 15 years' of work experience, candidates could be between 40-55 age, should have a masters as basic qualification and worked as Principal in CBSE schools for at least 5 years. It attracted a pool of 600 applicants. However they did not fit the basic criteria (as mentioned above).They were funnelled down to 11 candidates keeping a clear demarcation of the minimum requirements. All 11 candidates were invited and 5 accepted the invitation and participated in the selection process. The focus of this study paper is to highlight the significant contribution of psychometric assessment in the selection process.

The larger part of recruitment was to fill in the Principal's post by attracting candidates to be part of the process. The below given flow chart depicts the selection process.

Flow chart of the Selection Process

Short listed candidates as per the criteria

Pre assessment Questionnaire of Leadership

Psychometric Assessment   Rubrics of evaluation of competencies

Work Sample test

Panel Interview

Final Short listing

Reference check

Medical Test

Job offer

The 10 competencies were identified and a battery of psychometric tests were identified to measure the behavioural competencies of each candidate. Kindly refer to the below given table. It provides details about the attributes and the specific tests that measured the competencies. The acceptable bands were the red flags and stars were identified based on the test findings.

Tests Measuring Competencies

Table:

Attributes Ratings: Candidate's Name

Both qualitative and quantitative formats were used to collect and interpret data. The broad areas are as below:

Qualitative data										Quantitative data		
Level of Attributes	Battery of Tests									Remarks		
	DAM			TAT			16PF			Red Flag(s) ⚑		Star ☆
	1	2	3	1	2	3	1	2	3			
Reasoning Ability	-	-	-	-	-	-						
Emotional well-being and sensitivity												
Self-esteem and self-worth												
Openness to Change	-	-	-									
Social Skills	-	-	-									
Planning and Organizing	-	-	-									
Stress Management	-	-	-	-	-	-						
Integrity and Consciousness	-	-	-	-	-							
Communication Skills: (Written and Spoken)	-	-	-									
Leadership Skills	-	-	-	-	-	-						
	Levels: Require effort (Inadequately developed) Adequately developed (Averagely developed) Demonstrates strength (Highly developed)									Red flag(s): ⚑ Indicates inconsistency and low integrity. Star: ☆ Indicates the candidates uniqueness and consistently over the battery of tests.		
• Background information • Bio data • Work experience • Credentials – results of person's roles, academics and professional. • Awards / accolades										• Pre Assessment Leadership Questionnaire Format • Selection tools – (personality, intelligenc projective) • Rubrics for evaluation (setting minimum criteria) • Red flags and Stars		

The science of Psychometrics:

'A psychometric test is an instrument designed to produce a quantitative assessment of some psychological attribute(s)'. Psychometrics deals with the scientific measurement of individual differences (personality and intelligence). It attempts to measure the psychological qualities of individuals and use that knowledge to make predictions about behaviour.

Description of Assessment Tools:-

A battery of tests - Projective techniques, Personality Questionnaire and Cognitive Test were administered on day one.

Brief about each Test:

a)Leadership Development Format (LDF) as pre assessment tool.

Leadership Development Questionnaire was sent over mail to all candidates for the purpose of building a rapport and preparing the candidates for the two day assessments.

It consisted of a detailed account of various areas of professional life. The key areas that are covered are as below:-

major accomplishments, positions enjoyed most, reason for leaving, areas of improvement, senior and junior's feedback, account of stressful experiences, future plan, pros and cons of the position the person is considering, personal SWOT, one thing one would like to change, the area / the quality one has developed in the last few years.

The Leadership Development Format gave deep insights into the candidates' personal and professional life. It was a very useful tool to start with. It opened up the candidate and provided valuable information that could be matched with the other tools. However its validity and reliability remains untested.

b) Draw A Person Test:

The Draw-a-Person test (DAP, DAP test, or Goodenough–Harris Draw-a-Person test), (1926)(8)(9), is a psychological projective personality or cognitive test used to evaluate children, adolescents & adults for a variety of purposes.

The subject is asked to draw a picture of a person. No further instructions are given and the pictures are analyzed on a number of dimensions. Aspects such as the size of the head, placement of the arms, and even things such as if teeth were drawn or not are thought to reveal a range of personality traits (Murstein, 1965)(10). The personality traits measured were - aggression, sexual tendencies, relationships, introversion and extroversion, level of stress, social relatedness, self-esteem and conflicts. (Machover, 1949)(11).

Advantages:

• Easy to administer (only about 20-30 minutes plus 10 minutes of inquiry)
• Helps people who have anxieties taking tests (no strict format)
• Can assess people with communication problems
• Relatively culture free
• Allow for self-administration and easy projection as the test has no structure.

c) The Sixteen Personality Factor Questionnaire (16PF), is a self-report personality test developed over several decades of empirical research by Raymond B. Cattell, Maurice Tatsuoka and Herbert Eber (1920)(12). The 16PF provides a measure of normal personality and can also be used by psychologists, for career planning, identifying developmental areas as well as to help with prognosis and therapy planning. It provides with a normal-range measurement of anxiety, adjustment, emotional stability and behavioral problems. It is well used in areas of career, occupational selection and selection of candidate.

d) The Thematic Apperception Test (TAT) was developed during the 1930s(13) by the American psychologist Henry A. Murray and lay psychoanalyst Christiana D. Morgan(13) at the Harvard Clinic at Harvard University. It is subjects' responses. The narratives of the subject's responses given to the ambiguous pictures of people, reveal their underlying motives, concerns, and the way they see themselves and their social world. Historically, the test has been among the most widely researched, taught, and used projective technique. It measures need for achievement, need for affiliation, self-poise, complexes, drives and aspirations of the candidate.

e) The Wonderlic Personnel Test (formerly known as the Wonderlic Cognitive Ability Test) was developed by Eldon F. Wonderlic, (1936)(14), is a popular group intelligence test used to assess the aptitude of prospective employees for learning and problem-solving in a range of occupations. It is available in 12 different languages and is often used in college, entry level jobs, and team-making efforts. It consists of 50 multiple choice questions to be answered in 12 minutes. It essentially measures verbal and numerical ability and very useful to map managerial and leadership qualities and attributes.

IV. FINDINGS AND DISCUSSION

All the five candidates were taken through the assessment centre for selection purposes that lasted for 2 days. Rapport was built with the candidates and the 10 critical attributes / competencies were measured using the psychometric assessment and the rubrics as quantified according to predetermined culture. Each competency was described operationally. The table below provides the demographics. The data was quantified and measured the level of competencies of each candidate.

Table 1: Demographic profiles of candidates

Candidate's name	Gender	Age	Current Position	Educ. Qualification	Work Exp. (Yrs)
1.	M	53	Principal	M.A., M.Phil.	30
2.	F	48	Principal	M.A., MBA	26
3.	M	49	Principal	B.Ed., M.A.	27
4.	F	44	Principal	B.Ed., M.Sc.	15
5.	F	48	Principal	B.Ed., M.Com.	24

All the candidates were assessed on the 10 parameters using multiple tools in this order – DAM, 16PF, Wonderlic and lastly the TAT. All the findings were tabulated according to the rubrics indicates the minimum to maximum band. Each test result was interpreted and then each candidate was mapped on the competencies. The below table gives an overview of the competencies along with the strong areas (stars) and difficult areas (red flags). These areas were further analysed and explained. Specific descriptions for each candidate was noted. The findings of all three assessment tools was collated – the findings provided significant qualitative and quantitative analysis thus making selection objective and scientific.

The findings of the Psychometric Assessment are given below:-

Competencies   Candidates

	1		2		3		4		5	
1. Reasoning Ability	3	☆	3	☆	2		3	☆	2	
2. Emotional well-being and sensitivity	2		2		1	⚑	3	☆	2	
3. Self-esteem and self-worth	1	⚑	1	⚑	1	⚑	2		1	⚑
4. Openness to change	2		2		2		2		1	⚑
5. Social skills	1	⚑	2		2		2		2	
6. Planning and Organizing	2		3	☆	3	☆	3	☆	3	☆
7. Stress Management	2		2		2		2		2	
8. Integrity and Consciousness	2		3	☆	3	☆	2	⚑	2	
9. Communication Skills: (Written and Spoken)	1	⚑	2		2		2		2	
10. Leadership Skills	2		2		2		3	☆	2	

Level Key: 1. Require effort (Inadequately developed)   2. Adequately developed (Averagely developed)   3. Demonstrates strength (Highly developed)

Red Flags: ⚑ It indicates inconsistency and low integrity, and

Stars ☆ : It indicates the candidates uniqueness and consistently over the battery of tests.

They were further described in the next table.

The qualitative findings of the candidates is given below:-

	1	2	3	4	5
Red Flag: ⚑	• Detached & disengaged. (withdrawn) • Over cautious & pessimistic	• Over cautious & Self-doubting. • Straight forward & artless in communication.	• Low emotional control. • Detached & unsure of goals. • Overcritical & cynical towards people & the system.	• Could get pushy & careless with rules. • Anxious & insecure within yet socially appropriate.	• Overcautious & closed. • Tends to get easily discouraged.
Star: ☆	• Bright & able to learn concepts quickly.	• Consistent, planned & conscientious.	• Duty bound & conscientious.	• Strong leader.	• Planned & organized. • Valued
Concluding Remarks:	• Lacks vision & appears disengaged from his goals. • Lacks social & people skills	• Leads by example. • Is a slow influencer. • Low on social skills and self-esteem.	• Lacks exploration & curiosity. • Tends to use humour to cover up his anxieties & feelings.	• Probe into factors of consistency and consciousness.	• Lacks vision & confused. • Preoccupied & is likely to be feeling victimized. • Could probe into her life circumstances.

As seen from the above two tables, one candidate was outstanding fitted adequately into all the rubrics and ranked first (Candidate 4). Candidate 2nd came close but was low on leadership and self-confidence. The other three scored lower than the required band and hence were screened out. The next day the - Work sample test was administered followed by the panel interviews. Topics were given on the spot and the candidates had to prepare a class based on the topic. Attributes like reasoning ability, communication skills, ability to open and change, leadership, emotional well-being and maturity, planning and organizing were measured in the work sample test. However the other assessment tools are beyond the scope of this study.

It was found that candidates performed in a similar manner in the work sample test and the panel interviews. Although the teams of assessors were different – the findings converged. Candidates showed consistency in performance throughout all assessment measuring. The candidate that scored well in the psychometric tests continued to score high on the work sample and panel interview. Hence finding the perfect match got simpler as the assessment centre progressed.

The findings of all three teams of assessors was collated and the candidate with the highest on all three assessments was chosen to join. The Reference check was considered the final referee in the process. Given the nature of the assessment measures the common Failings In Assessments like – the leniency effect, the halo effect, mirror image, contrast, and projection were minimized.

It minimized the chance of bias or prejudice as the teams of raters were different and had no influence on each other. They were autonomous and the findings were collated once all the three processes were completed.

Thus study raises the hope of setting higher standards in the selection process of hiring Principals. Psychometrics has a significant role in establishing credibility in measuring competencies that can be cross validated in the work sample tests and during the panel interviews.

According to Harvard Business Review roughly 18% of companies currently use personality tests in the hiring process, according to a survey conducted by the Society for Human Resource Management. This number is growing at a rate of 10-15% a year according to many industrial and organizational psychologists, as well as the Association for Test Publishers. When used correctly, cognitive and personality tests can increase the chances that new employees will succeed.

Boyatzis, (1982)(15) in 'The Competent Manager', pointed out that performance effectiveness is related to the conveyance of three components namely individual competency, job demands and the cultural fit. The graphic representation explains the right fit.

Selecting the suitable Principal requires the fit of personal attributes like qualifications, past experience, personal competencies along with job – role clarity and fitment. The cultural fit is the soil on which the tree bears fruit. The success of the Principal would be dependent on her own qualities and competence, the job requirement and how she fits into the culture of the institution.

Hence the right fit is a function of a holistic match. Each candidate was to be evaluated against all the criteria to ensure effective selection. Any condition failing could lead to a mismatch. The tools used to assess all three dimensions requires acute clarity of the components especially the cultural fit. Given the limitations of the cultural barriers, policies and systems, many personnel are not able to perform and adherence to the policies, red tapism and bureaucracy that comes with the role.

V. CONCLUSIONS

Competencies identified were matched to the behavioural attributes to be measured using the battery of tests. Behavioural competencies were matched to role competency to determine the best fit. The rubrics that were the 'constant' throughout the assessment.

The benefits of matching Behavioural competencies to job competencies recruitment and selection are to:

• Facilitate a closer match between a person's skills and interests and the demands of the job.

• Help prevent interviewers and assessors from making 'snap' judgements or from judging characteristics that are irrelevant to the job in question.

• Underpin and structure the full range of assessment techniques – interviews, psychometric and assessments tests, group processes and appraisal ratings.

Selection Effectiveness lies in answering the 3 important questions namely:

Can s/he do the job?　　　　　　:　　　Competence

Will s/he do the job?　　　　　　:　　　Motivation

Will s/he fit in (Team / Organisation)?　:　　Match

Past behaviour is the single best predictor of the future behaviour!

Based on the lessons learnt from the success and challenges of Principal hiring certain improvements can be made in recruitment and selection procedures that lie beyond the scope of the present study. The Principal's role can be made more lucrative and empowering. In future, the below areas can be included as part of larger design such as:

1. Make the job more appealing and manageable.

2. Pay great leaders of what they deserve.

3. Take recruitment seriously and actively.

4. Evaluate candidates against competencies and skills that is research based.

5. Continually evaluate the recruitment process.

6. Have both internal and external candidate to apply and compete.

7. Do not let bureaucracy contaminatethe process of selection.

Excellent Principals shape a vision of academic success for students, set a positive tone and culture building and cultivate leadership in others. More importantly they create high quality of teachers to drive student learning.

Conflict of Interests: None to declare

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