

**Compilation of Tests Constructed at  
Jnana Prabodhini's Institute of Psychology  
(JPIP)**

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## **Introduction**

Prajna Manas Samshodhika i.e. Jnana Prabodhini's Institute of Psychology (JPIP) is a research institute recognized by Pune University and UGC. It is engaged in research, teaching, and extension services for industries, parents, teachers and students. (For more information refer - [www.jppsychology1.com](http://www.jppsychology1.com))

Test construction at JPIP is a natural corollary of the objects of its parent organization Jnana Prabodhini (JP), viz.;

- All round development of abilities in physical, mental, intellectual, spiritual domains and other abilities;
- Bringing out men and women possessing all-round leadership ability in different fields for social cause;
- Developing personality characteristics of gifted pupils;
- Motivating students towards nation building;
- Directing leadership and education for social cause, etc.

To realize these objects, JP needed a separate section of psychology devoted to devising proper tests and procedures for identification and nurture of human potential and counseling. Hence a large number of tests have been devised from time to time since its inception as and when needed.

The purpose of this study is two fold –in the first place, to bring together all tests constructed or adapted in various studies at JPIP and make them available to all researchers for ready reference and also to avoid duplication. It will also create a system for proper documentation in future. Another purpose is to have an overview of present status- where do we stand in this area of psychological measurement? The level of standardization, scope of measurement, and the facility for application are some of the major concerns. If psychological measurement has

remained the major area of research and extension services by JPIP, and if it has put JPIP on national and international scene for the same, it is high time to take a brief but critical review of work done so far, analyze the needs and step forward for implementation.

### **About the Present Study**

The scope of the study covers all kinds of tools constructed or adapted at JPIP for collection of research data. Though the word 'tool' is the most appropriate and more accepted in research, the word 'test' is more commonly used. Other words such as 'instrument', 'measure', and 'scale' are also applicable many times. In the present study the word 'test' is more often used.

Altogether there are 130 entries of tests reported till March 2010. Out of them 26 are batteries containing 186 tests. All these tests together present a large variety. Section I reviews the tests and section II gives essential details of all tests.

All these tests are grouped into five categories viz. **Ability, Achievement, Adjustment, Personality and Miscellaneous**. The classification is more for convenience than for psychometric purpose and is based on test author's decision or experts' judgment. For example, in the group of **Ability Tests**, tests of intelligence (both conventional IQ type and recent multiple and more specific intelligences), tests of creativity, aptitudes, etc. are included while under **Achievement**, skills and competencies also are placed. Tests grouped under **Personality** deal with characteristics of the individual, social-emotional traits, life-satisfaction, quality-of-life, and other variables, mainly from affective domain. **Adjustment** inventories dealing with adjustment behaviour at different places as home, school and work, satisfaction with job and life, stress-management, etc. are put together. The **Miscellaneous** group mainly has Personal Data Sheets devised for different purposes which may fall under more than one categories mentioned earlier. Some very unique instruments as Sleep Profile also are put under this category.

Each test is allotted a general entry number and a code number specifying the group. The entry number is given in review for reference.

While reviewing each section, appropriate comments are made for most tests and for the whole section; and what needs to be done has been pointed out very specifically. The whole review is concluded with more general comments along with directions for the future.

The review is followed by essential information about each test, in a specific format. All this information is computerized and the researcher can search for the desired tests using the appropriate keywords and filters. Guidelines for the search and explanation of format are given at the beginning of section II.

References for tests and other related literature are given at appropriate places in Section II.

## Section I

### Ability

**Introduction:** This section presents a large spectrum of tests for different age levels and multiple abilities. Devising tests for identification of abilities / talents and programmes for nurturing them remain the major priority area of research at JPIP. Since JP's educational activity started with, and has been focusing on, secondary school children, research at JPIP too has been directed accordingly.

In the beginning, due to pressing needs, available tests were being used for selection of students of JP Prashala (JPP). The next step was searching for appropriate standardized tests and adapting them for selection, guidance or research for the specific sample. Urban school children were the concerned population while devising tests for selection. In spite of cultural differences, all children have to go through the same academic programme that decides the nature of tests for selection and educational guidance. However, to maintain culture-fair nature of testing for selection, use of non-verbal tests has been insisted. Initially, already standardized tests such as Raven's SPM, Nafde's NVTI, Bhatia's battery of performance tests were used. There were also numerical and verbal tests. With constant evaluation of these tests as selection tools essential modifications were done. During this period there were two major changes in psychological testing. Psychologists and educationists shifted from IQ test to multiple intelligences and JPIP also undertook the construction of 120 tests measuring 120 factors from SOI model. It was a herculean task requiring a period of approximately 12 years. It was mainly for studying the validity of the model for Indian sample. After successful completion of the project, JPIP started using these tests for search of talents, for selection at JPP and also for getting aptitude profile. The present review mentions in brief about these tests but for more information manuals and research articles will have to be referred.

**About the Tests:** For selection and guidance of school going children, we have the following standardized tests;

Shishu Prajna Kasoti (2 yrs – 5 yrs)

Indian Child Intelligence Test (ICIT) (4 yrs – 12 yrs)

Buddhimapan Kasoti (Grade IV to IX and maturity)

Prajnaman Kasotimala (Grade VII to IX and above)

Shishu Prajna Kasoti (2 yrs – 5 yrs) (100)<sup>1</sup> (Khire & others, 1999) presents simple tasks in a play-like setting. There is no emphasis on speed and children may choose the tasks they like. The test measures eye-hand coordination, perception (and evaluation) of visual, auditory and tactile stimuli, semantic cognition, concept formation and concrete memory. There are two sets of seven tests each (with one common). Performance on five out of seven tasks in any group is scored for calculating MA. The variety of tasks as performance, verbal, non-verbal, open-end and multiple choices makes the whole testing quite interesting.

Similar variety can be seen in Indian Child Intelligence Test (ICIT) (4yrs – 12 yrs) (16) (Khire, Bleichrodt, Hoksbergen & others, 1992). The unique feature of this tool is that it is produced through collaboration with Dutch psychologists from Utrecht and Amsterdam. It is very well standardized for cross-cultural comparison in international studies as well as for the use in various parts of the country. At present it is available in six different Indian languages. The battery covers cognitive areas significant for education of children below 12 yrs. It measures visual motor coordination, spatial visualization, transformation (of visual field), semantic cognition, abstract and concrete memory and reasoning. The performance is shown through a profile or deviation IQ. The battery as a whole has been adapted from Revised Amsterdam Kinder Intelligence Test (RAKIT) (Ref. 16). RAKIT contains 12 tests while ICIT has 9 tests. Three verbal tests in RAKIT have not been included in ICIT. However, the factorial invariance has been established. The validity of battery for prediction of scholastic success is also proven. The battery though adapted, has gone through all stages of standardization for initial adaptation for Marathi speaking children. The Tamil adaptation too, has been subjected to all psychometric criteria except factor analysis. Other adaptations for English, Gujarathi, Hindi and Telegu speaking children have been studied on small samples but use original Marathi population norms at present. Updating norms for Marathi speaking population and separate norms for other languages are plans for future.

Buddhimapan Kasoti (Tests of Mental Abilities) (Grade IV to IX and above) (14) (Khire & others, 1976) is an adaptation of Kuhlmann Anderson Intelligence Tests (Ref. 14). This battery also consists of variety of test types and item forms and hence

Footnote 1 : Entry number of test is given for reference

maintains interest in solving the test. It differs from the earlier two (16, 100) in its emphasis on speed; the test time ranges from 1½ mins. to 3½ mins. Ten tests for each grade are

arranged in overlapping sets of increasing difficulty at higher levels. They measure different skills at different levels, such as perceptual speed and accuracy, remembering and following simple instructions, manipulation of symbolic information, concept formation, semantic cognition, problem solving, etc. The performance is indicated through median, PR or standard scores on ten tests. Separate scores for verbal, numerical and figural content may also be used. The battery shows high validity for scholastic achievement / performance.

Prajnaman Kasotimala (Grade VII to IX and above) refers to 120 tests based on SOI model (Guilford, 1967). The construction of these tests has been completed in two projects; the former covered 90 tests from figural, symbolic, and semantic contents while the latter worked on behavioral content. These four contents and five operations or thinking processes (cognition, memory, divergent thinking, convergent thinking and evaluation) yield 20 abilities (e.g. Figural Cognition, Semantic Memory, etc.) (40-59) (JPIP, 1992). Six products for each ability, viz. unit, class, relation, system, transformation and implication, make for six sub-tests of a battery for each ability. Thus, there are 20 batteries, each having six subtests for six products (40-59) (Khire & others, 1992). Separate subtest norms in standard scores are available enabling grouping of tests as per the purpose. The base of SOI model enables to measure large variety of thinking skills and/or design new tasks, if essential. Many tests are relevant for higher age. Some of these tests are in use for both lower and higher levels. The application of this model and these tests for measuring aptitudes is reported under I-AM (15). Selected tests for 10<sup>th</sup> grade yielding different profiles for occupational fields make this battery. A few tests are useful also for adults. Construction of 120 tests has been a landmark study by JPIP which attracted international recognition. It was appreciated by Dr. J. P. Guilford himself (Guilford, 1977 personal communication), who was in contact with the project through personal correspondence during the process of test construction.

All the twenty batteries are reported here separately and the brief summary of two project reports is given in Annexure I. The Behavioral Content tests are paper-pencil tests and the effect of verbal information cannot be always avoided. So for social intelligence, other forms of test also can be used. Some such formats can be seen in a few tests mentioned ahead (124, 65, 70, 71, 69).

Situational Test of Leadership Qualities (124) (Nirpharake, 1974) is the only field test developed at JPIP. It was designed and used for selection for entrance to 5<sup>th</sup> grade at JPP,

after initial screening with tests of intelligence and scholastic achievement. The test is comprised of four parts; three are group tasks for appointed and emergent leadership and one part is for assessing physical fitness. The test is not standardized; the score depends on observers' ratings on selected social traits for which inter-raters' agreement is established.

Observational Checklist for Supervisors (105) (Ballal & others, 2003) assesses social and emotional ability as manifested in different situations – group as well as individual. It is a custom-made test having inter-raters' agreement; the observations are spread over 3-4 sessions each of 15-30 mins. The situations are more open-ended; they need and also facilitate social-emotional behavior; but they are not 'test situations' designed for measuring those abilities.

Interview Schedule (71) (Rajhans, 1992) has been designed for assessing social ability through well directed questions as seen at home, school and with peer group. It was used for research on behavioral intelligence and was validated with improvement in social intelligence after training, as seen on other tests.

Behavioral Intelligence Specifications (122) (Khire, 2003) is a self-rating 10 point scale for behavioral intelligence as conceptualized by SOI model. It is frequently used in Youth Development Workshops.

Profile of Non-verbal Sensitivity (PONS) (69) (Rajhans, 1992) is adapted from standardized test by Rosenthal & others (1979). It measures interpersonal sensitivity through understanding of non-verbal cues such as facial expressions, gestures, tone, etc. The concept is similar to SOI but mode of presentation is computerized audio-video stimuli and not static figures. This can be used both for adolescents and adults.

Tests of Decision Making (72) (Kulkarni, 1987) ask for understanding of problems and making decisions in day-to-day life situations at home, school and entertainment. It is well-standardized and has two parallel forms. Pupil Judgment Test (87) (Khire, 1970) also deals with problem perception and problem solving, in situations related to peer behavior but is a teacher-made test.

Like social intelligence, creativity was the new area attracting psychologists and educationists. Tests of divergent thinking in (SOI model) Prajnaman Kasotimala (42, 47, 52, 57) can be used as indicators of creativity. There are also other tests mentioned below, which are designed (or adapted) as tests of creativity.

A battery of Creativity Tests (88) (Khire, 1970) contains seven subtests, verbal and non-verbal, based on Guilford's SOI and two adapted from Wallach-Kogan (1965). They are standardized. They measure fluency, flexibility and originality, and give an aggregate score using norms in standard scores. Inter-scorer reliability and factorial validity have been established. Gammat Jammata - Chitra Sangat and Gammat Jammata - Shabdasangata (132) are two forms adapted from Torrance Tests of Creative Thinking (TTCT) for doctoral research (Nirpharake, 1977). They measure fluency, flexibility, originality and elaboration. Original scoring guide for TTCT has been followed also for adapted version. A battery of Scientific Creativity Tests (SCT) (66) (Gujrathi, 1992) is for 9<sup>th</sup> grade; it measures fluency, flexibility and originality through 12 items with scientific content. All these three batteries of tests of creativity, though have been standardized, are rarely used after the doctoral research through which they were constructed/adapted. The expertise and time required for scoring seem to be the main reasons.

Emotional Intelligence is another recent area that has attracted researchers. Exploring Emotional Ability (106) (Lavalekar & others, 2006) measures self-awareness, self control, motivation, empathy and social skill. It is based on Golman's model of emotional intelligence and is standardized for adults. It consists of varied item types that avoid desirability in responding.

Another test, viz. Incomplete Sentence Blank (119) (Joshi, 2003) for assessing Emotional Maturity, is a teacher-made test for children and adolescents. Responses on five-point items are scored to get a single indicator of emotional maturity.

Behavioral Indicators of Developmental Potential (12) (Khire & others, 2003) is founded on naturalistic model conceptualizing giftedness as a potential for advance development (Khire, 2000). The observational checklist has been designed to reveal distinguishing characteristics and levels of giftedness, but is also applicable to non-gifted. It assesses sensitivity, response,

adaptation, growth, creation, creativity and elimination in social-emotional area. Supervisors observe the behavior over a long period, through structured and open activities during 2 or 3 workshops or camps of 5 days each.

Multiple Intelligences (65) (Watve, 2008) is a self-report inventory, exploring interests in different areas indicating multiple intelligence as per Gardner's MI theory viz. logico-mathematical, verbal, spatial, bodily-kinesthetic, musical, inter-personal, intra-personal, and naturalistic. Though a few psychometric properties have been studied the inventory is yet to be standardized.

Mark the Pictures (64) (Watve, 2006) has been prepared to assess speed of perception, and attention/concentration and listening. It can be used for children and adults from rural and urban area. This is also a teacher-made test, not yet standardized.

Scales for Assessing Learning Disability (68) (Paranjape, 2003) are not tests or scales in usual forms. These are observational and interview schedules, to be responded to by parents, teachers and also children. They also require (untimed) class-room observations over a period of 15 to 20 days. They have grade norms, and high content and concurrent validity established against school performance.

There are two scales in the area of spiritual ability. My Knowledge About Meditation (26) (Vinod & Khire, 1992) asks for narration of experience and elaboration of information. The responses are to be analyzed qualitatively. While Practicing Yoga (103) (Bhagwat, 2003) taps inward looking and self awareness as evaluated by candidates themselves mostly objectively.

The Physical Fitness (Record Sheet) (104) (Devalekar & others, 2003) is included in this review so as to recognise such tests for physical ability, though they are conventional simple tests.

A Battery of Intelligence and Aptitude Measurement (I-AM) is the only fully computerized test battery (15) (Khire & others, 1999). It contains tests of both-abilities and orientations. Seventeen tests from Prajnaman Kasotimala have been included in the battery; they yield scores for eight abilities, viz. Cognitive Ability, Reasoning Ability, Figural Memory, Spatial Ability, Verbal Ability, Social Ability, Numerical Ability and Numerical Memory. Six

orientations are Knowledge Orientation, Practical Orientation, Artistic Orientation, Social Orientation, Power Orientation and Faith Orientation. Separate norms, and criterion cut-off points referring to higher education samples have been established. New statistical concepts as 'intra-individual variation' and profile matching have been introduced for psychologist's study of individuals' score. The battery is fully computerized for stimuli, response, scoring and interpretation, and the testee can read and listen to instructions. It is also in the printed form; separate norms are established for computer and written version and are periodically updated. Adaptations in other languages are in process. Presently Marathi, Hindi, Gujrathi, Malyalam, Tamil, Telugu versions in printed form, and Marathi, Tamil, Telugu also in computer mode are in use. The battery is widely used for career guidance and has received recognition at national level as being 'first of its kind in the country' (Raina, 2000 personal communication).

Musical Talent: Pitch Acuity Test (130) (Shirwadkar, 1983) is a kind of laboratory test measuring psychophysical capacity for musical talent. The audio stimuli are computerized and presented in frequency pairs and the response is to be written. The validity is established on the sample consisting of well known musicians. The uniqueness of the test lies in high quality technology and equally high validity.

Psychoprofile (129) (Watve and Gadre, 2006) is a kit of different psychological instruments, produced by psychologists who often face the problem of choosing appropriate tools for guidance to adolescent students. The kit contains various tests measuring abilities, personality, habits and interests. These tests are reported elsewhere. For more details refer to the record of Psychoprofile (129).

**To sum up** – Thus, there are tests of multiple abilities, for different age levels from childhood to adulthood. Like Prajnaman Kasotimala founded on SOI model, there are other test batteries having subtests with verbal, non-verbal and behavioral contents. The test types also are of all possible kinds – open-end or force choice, paper pencil or performance, objective problem solving or open-end situational tasks; the stimuli are static in printed form or in-motion and in audio-video form. The mode of presentation is usual paper-pencil test or fully computerized. There are class-room tests, lab tests and field tests. The scores are interpreted in Mental Age, Deviation Quotient, Percentiles and Standard Scores, in the form of Median or Average of the aggregate score or as a Profile. All these tests taken together

present mostly representative and complete picture of ability-testing for students of psychological testing.

**What is needed:** Though there are many tests, for specific use, appropriate compilation of different tests in the form of a battery (as in I-AM and Psychoprofile) is urgently needed. We need to standardize and/or re-norm these batteries. Tests that can be extended to lower or higher age level have to be identified. Many tests make use of factor-pure and puzzle-like items. This item form does not attract adults. More complex situation tests can be useful for adults and for higher maturity individuals. With the advent of computer and electronic media, new strategies may be employed. At the same time the subjective methods employed in observational checklists can be more standardized and extended for preparing similar tests. Urban and rural samples have been used for Prajnaman Kasotimala, for norms as well as item selection. But most of the other tests are based on urban samples. Test with contents relevant for rural and tribal population have not been produced. Tests of creativity, social intelligence, and emotional intelligence for different age levels may be produced for which available tests also can be used with modifications.

Considering the priorities/aims of JP and JPIP, what we need urgently are separate tests for gifted pupils and tests for leadership qualities. Such tests may deviate from conventional concepts and techniques in measurement.

## **Achievement**

Tests of achievement, skill, efficiency, competency, etc. are put under this category.

Most of the tests in this group are non-standardized, though constructed very well, objectively, after ascertaining content validity and have been administered to sufficiently large samples for the problem under study. Perhaps limited purpose of the research and limited relevance of the content over a longer period might be the reasons for not standardizing these tests. It is more true for language tests. However, since they assess basic skills or achievement levels, they are quite useful as 'model tests' for research and training.

Since JPIP has been engaged in research and training in reading for a long time since 1972, there are many tests of reading skill. The projects and programs in reading got flooded over by so many reading exercises that original tests and exercises got lost in them. They are not, and need not be, noted separately. Illustrative tests of Reading Skills are noted here (78, 79, 80, 81, 82, 83). They measure perception, levels of comprehension, reading speed, vocabulary and reading habits. They are similar to exercises used for training in reading. Many exercises can be alternatively used as tests. There are literally more than hundred such exercises. Some exercises and tests can be readily noted in the book – Wachan Kaushalya : Kruti, Gati and Pragati (year 1995). All these tests and exercises as well as language achievement tests provide samples of item forms and test contents for research in reading and learning. Many of these test-cum-exercises are in use since 1972 and have been relevant till this date.

Language Achievement Test (77) (Godbole, 1988), Word Perception Test (85) (Tamhankar, 1967) and Word Perception : Accuracy of Marathi Writing (126) are three more tests, that can be taken together with Reading tests or exercises as mentioned above, for assessing Reading Skill and language achievement through reading. Word Perception (accuracy of) is for assessing proficiency in correct writing of Marathi (126). Another test of Word Perception (85) requires skill in word and letter manipulation and facility in language usage. Language Achievement Tests (77) (Godbole, 1988) and Scholastic Achievement Test (SAT) (2) (Pandit & Jagtap, 2004) measure achievement of 7<sup>th</sup> std. students; the latter is based on wider sample and also contains test for arithmetic and mental ability. There is only one independent test (125) (JPIP, 1972) for achievement in arithmetic.

Remaining tests (11, 37, 38, 61, 67) are for adults and are not ‘achievement’ tests in conventional sense of the term. They measure ‘skills’, mostly relevant to social situations such as Speaking Skills (11), Work Efficiency (37, 38), Skill in Parenting (67) and in Social Situation (62). The last one Myself (in a group) (61) (Patwardhan, 2001) is a standardized questionnaire measuring 11 competencies, namely, Decision Making, Initiative, Communication, Reliability, Confidence, Self sufficiency, Emotional Balance, Involvement, Internal Relations, Motivating others and planning.

**What is needed** – Though there are number of Reading tests, they are not well classified as per the difficulty level. Selected tests of Reading Skills can be grouped as a battery according to the need. Like Reading Skills tests, there should be a battery of tests analyzing Arithmetic Skills. There should be sequential tests of graded difficulty measuring learning readiness or educational progress at different levels. With changes in the mode of learning through electronic media, the achievement and skills tests will have to be modified. The relevance of basic skills as perception, interpretation, reorganization, evaluation or appreciation etc. in reading may not change; but the way the information is available will make the difference. For assessing language achievement, tests of listening skills also can be developed and can be more relevant in certain situations.

Though skills or competencies of adults are being evaluated by JPIP frequently as a part of service to industries, these are contracted jobs requiring confidentiality. Hence the psychometric tools and procedures developed cannot be reported.

## **Adjustment**

The main focus in psychometric research at JPIP was on identifying the potential, tapping the talents and selecting superior children. Selecting the talented and nurturing their potential for the social cause was the priority area in JP's formal and non-formal educational programs. Though highly capable individuals do have adjustment problems and may show behavioral disorders, research and practice at JPIP did not have clinical orientation. Occasionally, projective tools like TAT (and Rorschach) were purchased but were rarely used. Most of the individual testing (except for selection) and guidance was initially done for children referred by psychiatrists for 'IQ' testing to determine intelligence level, and psychologists did not interfere with the case by further probing into adjustment problems.

Later on, with the expansion of this service a regular guidance cell got established. Children with unsatisfactory academic progress and behavioral problems were referred by teachers. Parents also started approaching on their own. A few times, adjustment problems of adults such as family discord, marital dissatisfaction, addiction, love-affairs were also handled. It required psychologist's insight, cultural-philosophical mentorship and social worker's missionary zeal. Where educational guidance was required more, available intelligence tests

were found sufficient for the purpose; and guidance for adjustment problems was handled more through discussion and interview and use of personality inventories, if needed. Hence, standardization of adjustment inventories was hardly initiated by JPIP. However, to study the adjustment behavior of high ability children and youth, and to help them for better adjustment, a few adjustment inventories and self management questionnaires were adapted or devised from currently well-known standardized or non-standardized tests and revised as and when essential. For young children, these were initiated more for research, for youth and adults more for training.

There are only four tests for children and adolescents (6, 7, 75, 102). The Home Adjustment Inventory–Tumchya Kutumbavishayi Thodese and School Inventory – Shaleya Jeevan Prashnawali (Khire, 1971) were both originally adapted and abridged from Bell’s inventories for doctoral research. The School Adjustment Inventory is under further revision. Both these adapted versions are standardized and in continuous use, either for research or teaching students of psychology. They have been found useful for quick screening of the group to identify whether children requiring individual attention pose any problem and need further exploration. Group adjustment inventories like these are never to be used for ‘targeting’ any individual without deeper probe. The Adjustment and Personality Inventory (75) (Godbole, 1988) is also a tool prepared for doctoral research. It is unique in its way to assess overall adjustment level in different areas – home, school, peer group etc. – and related personality or behavioral traits in a single instrument; but it is non-standardized, more from a teachers’ approach. This test is also included in ‘Personality’.

Know Your Nature (102) is an anxiety scale originally adapted from Sinha’s scale for doctoral research (Patil, 1997) and then abridged for other research and personality development programs. The abridged version is well-standardized and innovatively revised (Gokhale & Mhaskar, 2009) for counseling purpose. The record sheet readily reveals problem behavior which is useful for counseling.

Two scales measuring Marital Satisfaction (107, 108) have been produced for research on Marital Satisfaction and Emotional Intelligence (Lavalekar, Kulkarni & Jagtap, 2006) and are well standardized. They are verbal and somewhat more loaded with semantic analytical thinking and hence, can be used more comfortably with educated adults. However, even less

educated adults also can be assessed with individual help in solving the test. The key areas measured are - 1) sexual relationship 2) emotional bonding 3) sharing thoughts and opinions 4) sharing household responsibility 5) views towards child rearing 6) time devoted to each other 7) economic stability 8) personality of spouse 9) motivating each other 10) relations with in-laws 11) growing in and with the relation 12) religious beliefs and 13) general marital satisfaction. These tests are original products of JPIP.

While helping the college-going youth and adults, for managing their stresses, the need for assessing their stress level and analyzing the stress-areas resulted in producing relevant instruments. The four tests of this type together cover necessary areas of assessment, such as understanding intensity and kind of stress (17), effect of role perception (24), self-management style (27) (Vinod & Khire, 1992) and coping behavior (121) (Ballal & others, 2003). These are not standardized tools and are of the custom-made / teacher-made category. They have been used as training instruments in stress-management workshops and have been noted for relevance.

### **What is needed?**

In brief, three out of four tests for children, two out of seven tests for adults are standardized. At this stage, it is suggested to undertake standardization of My Stress Profile (17); other tests may be used as they are for specific purposes. But they should be in use. Minor research projects may be undertaken to establish their reliabilities and validities. With fast changing culture in cities like Pune, in large parts of urban and even rural areas, the concepts and indicators of school and home adjustment behavior are changing very fast. Hence, new tests should be designed. Different areas of adjustment as home, school, peer group, same and opposite sex, and health, should be distinctly covered. Though 'gifted and talented' receive our attention for cognitive domain, their adjustment problems have not been studied and no tool is standardized for the same. It should be seriously attended.

### **Immediate steps should be undertaken for**

- Revision of home and school inventories;
- Devising a test for adjustment problems of gifted and talented including areas : peer group, sex, health;

- Standardizing Stress Profile and/or other test.

## **Personality**

This group of tests covers a wide range / array of measures of affective domain. There are tests of personality traits (e.g. 9, 13), types (e.g. 25, 29), style (e.g. 29, 95), habits (e.g. 99, 91), motivation (e.g. 1, 3, 84), values (e.g. 5, 15, 86), quality of / satisfaction in life (e.g. 35, 36, 107, 108), self concept at behavioral (e.g. 28, 62) and deeper level (e.g. 22) etc. There are a few other miscellaneous tests. Though most of the tests are self-report inventories, there are also all other types as observational checklists or others-report inventories (e.g. 120), open ended questionnaire (e.g. 8, 10) and projective tests with verbal or non-verbal stimuli (8, 84). Very often there is need-based adaptation of already standardized tests for doctoral research or departmental projects. However, there are some tests produced at JPIP and founded on Western or Indian theories.

Two tests adapted from Western tests are frequently used (9, 13). *Vyaktitva Shodhika* (9) adapted and abridged from Bernreuter's Personality Inventory measures with main personality variables confidence, sociability, self-sufficiency and mental health. It has been largely modified for common screening purpose. Another test *Know Yourself* (13) an adaptation of Cattell's Jr. HSPQ has a full form measuring 14 traits as in the original and an abridged version measuring six traits as C- Emotional Stability, F- Enthusiastic, G- Conscientious, I-Tender-minded, Q4-Tense (Short version). Moderate time requirement, ease in scoring as well as validly have attracted psychologists for their continued use.

Test of Orientation is adapted from Allport Vernon Study of Values (86) (Tamhankar, 1967). It is available in the original form. Yet, the revised version (15) (Khire and others, 1999) has been more in use since its inclusion in the Battery of Intelligence and Aptitude Measurement I-AM for career guidance. It is both in computer and printed form and measures six orientations such as knowledge, practical, social, power, aesthetic and faith (the last one is reserved only for psychologists). The testee immediately gets the printed report with preliminary guidance. The interpretation refers to criterion cut-off points for different occupations based on experts' judgement. These tests, though adapted from western

instruments and though quite old, have been still found to be strong measures with good validity.

Students' Learning Orientation Profile (SLOP) (123) (Pandit & Jagtap, 2004) is adapted from standardized Indian test (Jayalaxmi Indersen (Pestonjee, 1991)) and is useful to know whether learning is oriented more intrinsically with a desire for learning or extrinsically for exam and personality. For children and adolescents there are two observational checklists to be used by parents (99, 120) to gauge their habits (99) and rate change on certain personality characteristics (120) as confidence, responsibility, curiosity, etc. These are teacher-made tests with good content validity.

A good number of tests are available to study social behavior of adolescents (110, 111, 112, 113, 114, 115, 116, 117, 118), all by Dr. Anagha Lavalekar, in her socially oriented research. Social Insight Test (SIT) (111) (Lavalekar, 1994) is an adapted version, but all remaining have been designed and constructed by her for doctoral research or other major/minor research projects. They cover attitude towards social problems (110), knowledge (114) and motivation (112, 113). There are specific purpose scales for communal harmony/disharmony (115, 116, 117).

Two tests of motivation for achievement are useful both for adolescents and adults. Both are open ended and projective. One (118) is limited to needs and aspirations of dropouts while another is more general, measuring n-achievement (adapted from Mclelland) (84) (Tamhankar, 1967). Though latter is well standardized, it needs high level of expertise for interpretation and hence has remained without use. Projective test in sentence completion format (8) measuring positive thinking, but named as Speed of Thinking is relatively less difficult and has been in use.

The inventories for adults encompass large portion of personality variables and are founded on western and also Indian models. Adaptation of Edward's Personality Preference Schedule is available in both full and abridged form (127). It is being revised (128). The revised version is largely modified and is in the process of standardization. Adaptation of California Personality Inventory (CPI) (131) (Watve, 2001) is also available in full form and abridged versions. Both the forms cover nineteen traits such as dominance, capacity for status, self

acceptance, independence, empathy, responsibility, communality, well-being, intellectual efficiency, etc. Three dimensions of externality/internality, norm favoring/norm questioning and realization, and four personality types- alpha, beta, gamma and delta- can be derived from nineteen scores.

Though there are many other personality tests for adults and youth, they are custom-made or for limited group. There is only one test for parents indicating their style (95) (Kulkarni, 2002) whether authoritarian, democratic or permissive. There are four tests (1, 3, 4, 5) (Pandit & Jagtap, 2004) for teachers for exploring their motivational status. The former two are adapted from other Indian tests (Indiresan, J (in Pestonjee, 1997)) and the latter two are produced by the researcher. They are not standardized but descriptive statistics on large samples are available. Two other tests – Quality of Life Scales - Part I (35) (Khire, 2007) and Part II (36) (Bhogal, 2007) have been used for a small sample under Yoga training. Relevant statistics are available for judging psychometric properties of these tests. Employee Satisfaction Questionnaire is standardized (60) (Patwardhan, 2006) and is used frequently.

There are tests designed for training of youth e.g. Creative Personality Checklist (10) (Khire, 1990) to know present status and readiness to change. Tests of preferences or style (19, 20, 21, 25, 29) (Vinod & Khire, 1992) are designed on the basis of theories of hemispheric dominance and androgyny. They have been used for research and training. There are two tests for self-concept – ‘I am often considered as’ refers to outer side as seen by others (28) (Vinod & Khire, 1992) and My Vital Data (22) (Vinod & Khire, 1992) probes into one’s awareness of ‘oneself’ at a deeper level.

Myself in a mirror (62) (Patwardhan, 2001) measures five domains of self-concept such as physical appearance, intellectual capacity, etc. It is teacher-made. Adjustment and Personality Inventory (API) (75) (Godbole, 1988) is teacher-made and covers in brief both the sides of adjustment and personality, since for young children they are to be considered with a holistic approach. This test is also included in ‘Adjustment’.

Two inventories based on Indian theories are a unique addition. Sanjeevan Personality Inventory (39) (Sadolikar & Paranjpe, 2007) assesses characteristics and symptoms related to four dominant principles as Prithwi, Jal, Tej and Vayu. Triguna Inventory (63) (Watve, 2005) reveals dominance / weightage of three gunas / qualities viz; Sattva, Raj and Tam in

individual's personality make-up. Both these tests are semi-standardized i.e. their psychometric properties are established on small sample only. Two more tests that make significant addition are Marital Satisfaction Scales (107, 108) (Lavalekar, 2006). Both are standardized; the latter is meant for couples with infertility and the former is more general.

**In brief**, since research and guidance at JPIP have been focused on children and adolescents, the standardized tests are mainly for this group. Adults are involved in training which requires instruments for personality explorations. These tests are indigenously produced with satisfactory validity and careful design but remain custom-made and non-standardized. Realizing the need for standardization of psychological instruments and priority areas including research on adults, the tests developed in recent years are mostly standardized. Though there is a good coverage age-wise and variables significant for majority have been tackled, some crucial areas have not been dealt with.

#### **What is needed?**

*Test development has to be initiated as per priority areas.* There is no test battery for complete assessment of leadership qualities at different age and education level. There is no specialized test for assessing personality of highly talented or gifted, nor do we have measures of personality change as expected after 'Jnana Prabodhini (JP) nurturing programme'. There can be more tests designed as per Indian models and vision of Dr. V.V. Pendse. He visualized the student leader of JP to be 'Responsive, Responsible, Cooperative, Creative and Regenerative'. We don't have any questionnaire assessing these qualities comprehensively.

Characteristics of gifted are studied through tools for majority. There is no personality questionnaire designed for this purpose. Recent changes in the concept of giftedness liberate 'giftedness' from 'IQ test' and establish it on higher planes of affective domain leading to ethical-moral-spiritual development. A study of personality and giftedness from Indian approach might reveal the nature of characteristics associated with giftedness from this view.

#### **The immediate plan for tool development in this area can be -**

- Standardizing teacher made tests, if essential and possible;

- Devising test of leadership qualities;
- Inventories for personality of gifted;
- Tests founded on Indian concepts.

## **Miscellaneous**

This group contains a variety of tools that do not fit into the conventional category. If a tool is defined as an 'instrument to obtain data' useful for investigation, then it deserves inclusion for an overview in this report. They are in the form of observational checklists, personal data sheets, interview schedules for knowing about the past and present of the individual and the environment, perception and evaluation of the processes, or getting some factual data. Most of them are more for explorations as per the purpose of research and designed for elaborate qualitative analysis rather than getting quantitative indicators. They are useful in group guidance and counseling workshops and case-studies.

Personal Data Sheets illustrate different levels and scope of information asked about the individual and environment. Together they present a wide range of variables that can be useful for research. Personal Data Questionnaire (73) (Godbole, 1988) tries to collect as much information as possible about the child under study his socio-economic status, psychosocial environment at home, parent child relationship, peer group relation, perception of performance at school and extra-curricular activities. The qualitative analysis of the information may suffice the purpose of separate inventories of personality, interest, or adjustment. Similar or object-specific information about children may be obtained from parents. Three tools have used this strategy. Questionnaire for Observation by Parents (QOP) (76) (Godbole, 1988) asks parents to observe children's participation in, and effect of, story telling programme through personal interactions and reading of written responses; thus parents get involved in knowing about and evaluating child's learning outside the school activity. There are two more tools for parents' observation. Home Background Inventory (97) (Gadre, 1994) explores how far the home environment is facilitating cognitive and affective development of children. In the data sheet for Activity of Wards (98) (Gadre, 1994), parents have to rate the frequency of specific activity in and outside the school. Thus the responses can be readily quantified. Though these two tools have been developed to study differences (if any) in the homes of gifted and average, they can be used for the majority unselected.

Three more tools for retrospective research on gifted are for adults. Brief Biodata Sheet (89) (Watve, 2001) has been designed to seek information about individual's achievements, professional excellences, strengths and also weaknesses. About Your Family (90) (Watve, 2001) is an exhaustive exploratory data sheet getting information about members in the family. Since details of required information have been already provided, analysis of data into various categories is relatively easy. Peeping into the Past (92) (Watve, 2001) is an interview schedule used in the same study that covers areas as significant persons, family atmosphere, study place atmosphere, curricular/co-curricular/extra-curricular activities, media, specific events and issues.

Three tools reported ahead are for individual's information revealing hemispheric dominance. Personal Data Sheet (ML-WBT) (31) (Vinod & Khire, 1992) searches for handedness (right/left), occupational field, kind of work, liking for work, quality of work environment, enrichment on social dimension, scope for leadership, etc. Vaiyaktik Mahiti Patrak (32) (Vinod & Khire, 1992) is for housewives and women doing small business. It asks for experience of job, marital life, hobbies, likes/dislikes, skills, etc. Variety of hobbies and jobs are already listed in the sheet that helps elaborate search. Personal Data Sheet for Teachers (33) (Vinod & Khire, 1992) asks for experience of teaching, and other activities such as experiments in teaching, delivering special lectures, working as resource person, producing learning material and organizational activities. On the whole, this tool explores efficiency as a teacher and as a leader. A small data sheet, Personal Information (34) (Khire, 2007), prepared for Yoga training and Work Efficiency, asks about members in the family, nature of work, time and mode of commuting/transport, physical complaints (if any), and previous experience in Yoga. It is designed to know minimum essentials about the factors that may affect work efficiency.

Two instruments deal with learning/training processes. Students' Perception of Training (SPT) (70) (Rajhans, 1992) has been used to judge students' perception of the training programme conducted to enhance behavioral intelligence. Appropriateness of the material, students' liking for it and usefulness of the program are to be judged by the students. Another questionnaire, 'Teachers and Story Telling' (74) (Godbole, 1988) asks teachers about story telling activity in the school, teachers' involvement and proficiency in story telling as a pedagogic method.

Three instruments are very uncommon. One is 'My Sleep Profile' (23) (Vinod & Khire, 1992) which is a very exhaustive questionnaire that indicates quality of sleep at different stages. It is more useful in the study of stress management, effect of Yoga training, or in more clinical research. Swapna Sahajeevanache (Premarital Expectation Scale) (109) (Lavalekar, Kulkarni & Jagtap, 2007) is useful for premarital counseling. It stimulates candidates to think for personality of the spouse, time to be devoted, emotional bonding, relationship with in-laws, religious beliefs, financial status, sexuality and acceptance for life style issues.

School Environment Questionnaire (SEQ) (96) (Gadre, 1994) explores the quality of the school environment on various parameters congenial for students' development in different domains as physical, intellectual, social-emotional and moral. The school principal or supervisor and other experienced teachers have to report about activities through open-end and forced choice questions. The ratings yield a final score indicating the extent to which the school environment is enriching students' experience.

On the whole, most of the tools in this section are very exhaustive and comprehensive in nature. They refer to the individual's behavior, the process of learning/training, the process of development and the environment. Though none is a standardized tool and many of them are custom-made or limited to the objective of research/training, they provide a rich pool of raw material.

### **What is needed?**

A review of Personal Data Sheet type tools suggests a possibility to derive some standard formats for minimum data required in almost all research. It will enable to have a common pool of data through standard common programming for data analysis. It is very much essential for institutional research. Validation studies of certain tools as My Sleep Profile (23), Personal Data Sheet (ML-WBT) (31), About Your Family (90), School Environment Questionnaire (SEQ) (96), Home Background Inventory (97) and Swapna Sahajeevanache (Premarital Expectation Scale) may be undertaken. They have wider application.

The most essential and immediate step should be standardizing Personal Data Sheets and making its use mandatory for all research.

## **Tests at JPIP – Summary Comments**

Since testing and test construction at JPIP started with ‘intelligence testing’ and construction of SOI tests is known as a ‘bench-mark’ in the field, it is worthwhile to highlight the contribution comparing to the status in the field.

The available Indian tests and the way they are used have put Indian testing in trouble. Critical reviews of intelligence tests have clearly pointed out the drawbacks in the whole system of intelligence testing and specifically in the country (Srivastava and Misra, 1996; Passi, 1997). JPIP’s attempts are a step forward to meet the needs in various respects. The test contents, forms, procedures, abilities measured, age range covered, psychometric properties, are some of the issues. JPIP’s tests suggest some solution.

Acceptance of ‘multifaceted ability’ poses a challenge for constructing proper tools and applying the concept for identification and guidance. Hence attempts have been made to cover wider range of diverse abilities as in SOI, ICIT and Shishuprajna. JPIP’s contribution of tests for all 120 factors of SOI, and application of relevant tests for career guidance and computerization of testing show the appropriate solutions.

For better validity of identification, use of different measures such as teacher nominations, peer nomination, scholastic achievement, biographical information, situational tests, developmental norms have been stressed (NIPCCD, 1984). JPIP has attempted all these types. Moreover JPIP’s tests show how it is possible to cover different abilities even by paper pencil tests.

Next issue is the methods used in the construction of tools. Some methods used by JPIP have theoretical significance and practical implication. Measure of intra-individual variation and coefficient of balance between different abilities should be explored further not only for identification of high ability but also for counseling.

Psychological testing in our country demands more impersonal controls on the procedure as well as more user-friendly techniques. Computerized test battery like I-AM is a kind of best solution. If computerization is not possible, we can use some other innovative methods e.g.

the response sheet of ICIT is self-scored, while that of Know Your Nature provides a guide to counselor. Though there are many tests, many more are essential to fulfill the needs of JP, such as tests for leadership and creativity and also to meet the challenges of the present times.

Since psychology as a science has been established in modern times, it is bound to have the impact of western models. It is more so for a discipline like psychometry that deals with measurement. Recent developments in understanding nature of human ability and use of psychological tests for selection, training and counseling have been reflected in the kind of tests constructed and adapted at JPIP. It is more as in Ability Tests. For personality assessment, there are a few tests founded on ancient Indian thinking. However, there should be more efforts in this direction.

Finally, it is suggested that students of psychology should be regularly exposed to various kinds of test at JPIP. It will be a rare experience to them and significant contribution to the field.

Some steps essential to improve the situation are as follows-

- Provision for adequate training for administering and using psychological tests;
- Standardization of various types of observational checklists and qualitative assessments;
- Revising the methods used in test construction. The technology should not over-ride the purpose or what is to be measured.
- Emphasis on inter individual differences should be reduced to understand more about the qualities of individual and intra-individual differences

Our commitment may be put in the words of late Dr. V.V. Pendse, the founder director of JP “Prajna Manas Samshodhika i.e. JPIP is a planned step, a determined step to meet the challenge and make original contribution to psychological research in a systematic, consolidated, organized way by taking up ‘broad themes of research problem’ that break new grounds and require long-term planning, the problems that are vital for national reawakening and reconstruction (JP, 1980, p179)”.