The levels of work, the work which is performed like anywhere else, demands for its successful execution a level of individual general and specific ability pattern below which the task will not be accomplished independently by the employee concerned. The idea is that top level ability will produce and should; top grade work with comparable rewards. The human ability aspects of production are to be considered independently as the employee comes with nothing except his ability and training. He is fit to become a part of the whole set up of the production unit. Production does not necessarily mean hand or on the spot personal direct output.

A study of the present type has to be based on the assumption that top level post-graduate study is meant for people who are able to succeed at national and sometimes international level of competitive production. The general semantics which describe the standards of achievement and production are 'proficiency' 'efficiency' 'achievement' etc. No understand that a post-graduate trained person acquires or shows that he has those qualities of the order that will help him achieve job and demands the above level of competence.

It was assumed that a comparison of the performance on the test by a group of 'experts'.
with that of our students shall yield at least tentative measures and level of scores which can be usefully employed in predicting the level at which a post-graduate student can expect to get employed.

There is no available study to show that all post-graduates in higher professionally competitive jobs are equal to jobs. There are chances of some of the currently working professionals to be unfit. In our situation as it exists in the region, a lot of times selection for a number of comparable posts is rather biased. Very few improved methods are used in selections except a short time interview and rating and ranking on the basis of application forms. There are a large number of cases in industry where technical know how is found less advantageous than the ability to 'control' junior staff and colleagues, even though the qualification for the post are specifically described as technical. It is observed that quality of work is not favoured in cases where cheap and barely 'essentially' qualified person is available. Work becomes less important than other special considerations.

The selection of criteria to be used in describing this group of validation sample was thoroughly discussed. It is proposed that a composite criteria may be established to get this stratified sample. It was accepted that "a person who, (1) had a post-graduate degree in the area of his work, (2) had a starting consolidated salary
of at least Rs. 250/- or more (3) and, must have been in the job for two years or more; should be included in this validation group.

A post-graduate degree implies that the person has at least bound himself with a training and an area of work and that he is not likely to change his field of work unless he takes another comparable degree. It is based on the fact that at least academic interests of the person are made permanent by this time.

A starting salary of Rs. 250/- was stipulated for inclusion in this criteria because it is found that most State Government second level jobs are open to post-graduates in various fields of work and the starting salary for these as well as the level of these jobs are the ones at which post-graduate students can fit. Higher salary is given for the same jobs in central government but the qualifications and level of competition is found to be too high for average post-graduate. Salary in this case is assumed to be a good indicator of the level as well as the training required for the job.

The third criteria stipulated for this group is that the person should have been in the job for two years or more. It is understood that the state and semi-government organisations give at least one year as probation after which confirmation on the same post is finalized. It is a period of
settling and showing that the person carries out the duties of the job at a satisfactory level and shows himself capable of meeting the demands of the job. For purposes of comparison it is important that validation sample is represented by as stable a membership as possible so that contamination and fluctuations which effect the study variables are minimised.

SAMPLE, DATA AND METHOD:

This group was to have been composed of people who fulfil the conditions stated for the composite criteria. The student sample covers nine areas of study generally classified as Medical Pharmacy, Engineering, Physical Sciences, Social Science, Languages, Commerce, Law and Education. It was stipulated that each group will have at least twenty persons, so that certain statistical stability will be maintained. Therefore, the study should have had 130 in this pooled group of professionals.

At the start of field work to get the required sample, the author tried to locate professional associations and organizations, the employment exchange, colleges, laboratories and big private manufacturing organisations, banks, Lion's club and the Rotary Club, all situated at Ahmedabad. It was desired that this sample should represent the professional fields into which post-
From the above sources a few interesting facts emerged. (1) Office time could not be taken to test an employee. (2) Top authorities showed little insight towards the aims of study and had indifferent attitudes for this type of work. (3) Only one association could provide a number of their members at the appointed time in a group. Medical, Lawyer, Engineer associations exist but their membership seems to be rather inactive and group testing could not be arranged. It emerges that the professional samples can be contacted individually. Further, that only where people work together in the same or related fields can they be tested in groups. College teachers, school teachers and research workers are easiest to create rapport with. They co-operate most. Individual practitioners and top level earners usually are too busy and generally unable to get into a group for co-operating in this kind of study.

The author had one more difficulty which arose as a result of his appointment at Jaipur. Most field work had to be finished within December 1961 and March 1962. In these three months, with the above conditions, it was found very difficult to cover all the stipulated number in this sample. One more difficulty observed about Commerce, Languages groups was that professionals who fulfilled
the criteria were scarce. There were only teachers available and they were strictly not all the type of sample needed. The teachers group informed that one aspect of the criteria, viz. starting salary of Rs.250/- could not be applicable in their case because their pay scale allowed a consolidated salary of Rs.207/- after confirmation.

The net available sample in this group is 104 with the following breakdown: Soc. Sc. 18, Physical Sc. 22, Pharmacy 13, Medicine 2, Law 6, Commerce 4, Engineering 11, Education 25 and Languages 3. The total sample of the student group is 715. The criteria group sample, therefore, works out to be approximately 14.54% of the student group in the final study. The shortage for many professional groups forces the author to mix this group in a consolidated pool group. Methodological inadequacy produced by such a process can not be denied. It can only be said here that the total group is fairly representative of the population of professionals in most cases.

Age range within the group as reported by the respondents is 475. Youngest is 240 months and oldest 715 months. Instead of using years and months, I have worked out months. It enables the nearest month to the coming birthday to be considered. In this sample we have a wide distribution with regard to age. The group has 13 female and 91 male members.
It has already been pointed out that the test was to be used in group situations. For this sample the 'group' had to be accepted when there were three or more respondents to take the test together. For student samples it was five or more. The time, place and seating arrangements were done in most of the cases by the respondents themselves. The test groups ranged from 3 persons to 11 in one group. Never, less than three in a group were tested. It can be reasonably accepted that this sample did as best as others even though they were tested in different places and conditions.

Usual descriptive statistics has been used for this group for the analysis of data. Some of the professionals areas are inadequately covered, most notable in this respect being Medical, Business or Commerce and Language groups. The size of the constituent groups has forced the author to combine and pool the whole group together.

A total sample of 104, though made up of nine different types of training may yield more reliable results than groups of 4 to 25 taken individually from each area. It will be possible to show that the measures which distinguish student samples from each other and the comparison of their scores with the scores of this group will provide relatively stable measures of comparisons. This sample will act to show the desirable variables, the significant variables which are functionally related
with the ability to work at the levels of professional work.

Mean, S.D. and Product moment correlations have been worked out for this group for the variables under study. The levels of significance for these has been worked out. Age, sex distributions are worked out and generally the treatment of data has been done to show the similarities and differences between this group and student groups. Raw scores have been used throughout this part of the study. It was evident from the preliminary study that conversion to standard scores based on weights assigned to various tests on factorial loadings derived from American samples are not usable in our case. So, all later analysis has been done on test data and not for aptitudes. It will be shown that this group scores are very near the American sample scores and therefore probably the conversion can be done after all. Averages of correlations has been found by converting the obtained r's into Fisher's $Z$ and then averaging them to average $Z$ and converting it back to $r$.

Differences in the background of training has made it difficult to use more stable statistics. The biserial correlation or the tetrachoric correlation co-efficients to find predictive or concurrent validity can not be used, because the subgroups have had very different category examinations at various levels of their training.
The examination scoring systems have been changing and even now are not the same for all courses and study areas.

RESULTS:

1. The distribution of scores of this sample on Test 1 shows the following outstanding quantitative and other results. The $N$ is 43 and $S.D.$ 9.3. The $S.E.$ is .93 (See appendix- Table 4). The nature of distribution shows this test to be one, on which this sample seems to distribute itself most in normal fashion.

   Distribution of product moment correlations shows that the test has generally positive correlations with other tests of the battery and examination marks. Range of $r$ for other tests and examination marks is from 0.037 with 'pay' to 0.577 with Test 2. Average of these $r$'s is 0.322. All correlations of the test with the H.S., Int., Grad., P.G., and Pay are below this average. Among these, highest $r$ is with Grad. of 0.251 and lowest with pay of 0.037. The trend is shown by the gradual increase of $r$ from High School to Inter, to Grad; from 0.112 to 0.224 to 0.251 after which it drops to 0.152 for P.G. and comes down to 0.037 for pay. The test scores are convertible into clerical perception aptitude scores.

2. Test 2 is arithmetical computations
involving simple addition, subtraction, multiplication and division of numbers from one to more digits. The M for this sample on the test is 24.45 and S.D. is 4.5 S.E.m. is .44. Correlations range from .56 to -.056. Average of these correlations is .293.

Correlations of the test with P.Q., Grad., Int., H.S. and Test 4 are lower than this average. Correlation with 'Pay' is negative that seems negligible. Trend of the increase of correlations shows that there is appreciable change between H.S. and Int. with H.S. the r is .07, with Int., Grad. and P.Q. it is .213 .207, .222 respectively.

3. Test 3 has factors of 'G' and spatial three dimensional perception. The M for this test is 12.8, S.D. of 4.92 and S.E.m is .48. Range of correlations is from .163 to .547. Average of these correlations is .3507. There are very much lower correlations recorded with H.S. and 'Pay'. The other correlations with tests and examination marks are very near to this average. It seems that the test performance shows, on the whole a general low commonality with performance in various tests and examinations. Further it is apparent on the inspection of these correlations that most of these are significant at various levels of confidence for this sample. Probably the G factor loading may be the decisive factor to explain these correlations. The inspection of the distribution curve shows that the scores of this group shows a positively skewed distribution.
4. Test 4 is an English Vocabulary test with some loading of G. One of the earlier contention was that general ability was the outstanding factor in the learning process at the college level which will account for the differences in scores of the students, to show that higher general ability is more related with the expansion and development of special abilities. This sample M on the test is 17.3, S.D. is 6.12 and S.E.M is .6. The average of correlations is .38. They range from .262 to .53. It is important to note that this test shows correlations in most cases, which are significantly high enough to merit further comment. Amongst the tests and examination marks, this test shows the highest positive correlation with 'Pay'. Certainly, it will have to be discussed in detail. The following test 2, 5, 6, 7 and marks in High School show correlations lower than the average with this test. It should be noted that even these are significant for this sample, i.e. these correlations are to be treated to have statistical significance at .05 level or higher.

5. Test 5 is matching the figures and tools, with loadings on two dimensional perception. It is likely to be used for finding the difference and its level, among students who are expected to develop the two dimensional mechanical tools and machines perception as part of their study. The M is 24.75 with S.D. of 4.39 and S.E.M of .43. The correlations
range between .021 and .562. The average of the correlations is .317. Lower than average correlations are obtained for tests 6, H.S., Int., F.G., and Pay scores. Other higher correlations are obtained between tests which were expected.

6. Test 6 is again a test loaded with numerical ability and arithmetical reasoning; convertible into G factor loading. The sample has a M score of 12.39, S.D. is 3.03 and S.E.M. is .3. The range of correlations is between .05 and .564 and the average is .23. Lower than average correlations are obtained between the scores on this test and of Test 4, 5, 7, Grad, F.G. and Pay. It may be brought about to show that certain degree of numerical reasoning is part of any work of the status which has been stipulated here as the criteria. It may be shown that this aspect of general ability is more common to most samples, i.e. the American, the criteria group as well as the student groups. The inspection of distribution shows that it is a slightly negatively skewed distribution. The range of scores of this sample shows that it is fairly random sample.

7. Test seven is loaded with the factor of two dimensional space perception usually common in tasks where finer discrimination is needed as seen in watch making, jewellery, or in the operations in Physiology, Zoology etc. M of the sample is 22.49 with S.D. of 5.52 and S.E.M. of .54. The
correlations range between .066 and .552 with an average correlation of .319. Lower than average correlations are found between this test and Test 6, H.S., Int., and Pay. Higher correlations between the tests of the battery do show the expected trend for an unsophisticated sample like the present one.

It is possible that the sample as a rule makes little use of this type of ability in training as well as in actual work. It will be shown that this discrimination is not an asset with such samples in America also, except in case of some specialized work areas.

8. Percentage of marks in High School is the next variable under study. The M is 56.15 with S.D. of 11.15 and S.E.m equals 1.03. Correlations range between .07 and .621 with an average correlation of .368. Lower than average correlations are achieved between this test and Tests 1, 2, 3, 5, 6, 7, P.G. and Pay. The distribution is fairly normal.

9. Intermediate examination percentage of marks under study show a similar trend as indicated by High School marks. The M is 46.3, S.D. 8.35 and S.E.m is .87. Correlations range between .179 and .621 with an average correlation of .351. Lower than average correlations are found to exist between this variable and Tests 1, 2, 5, P.G.

It is interesting to note that lowest M of percentage of marks are achieved by this sample at this
examination. Other final examinations show higher K for percentage of marks. It will be discussed later that probably this fall is due to the 'storm and stress' of puberty and adolescence which causes a general fall in achievement. The inspection of distribution of marks shows that the scores are not normally distributed. There is marked positive skewness.

10. Graduate examination percentage of marks are reasonably normally distributed. The K is 50.5, S.D. 8.0 and the S.E.K is .78. The correlations range between .137 and .6 with an average of .374. Below the average correlations are noted between this variable and Tests 1, 2, 3, 5, 6 and Pay. The fact that this examination shows favourable relationship with several tests and marks shows that the standards during the years for this examination have undergone lesser change. Reasonably significant correlations have emerged to show that at this level, the general level of respondent aptitudes in various specialisations become fairly equated.

11. P.G. examination percentage of marks have a K of 53.6, S.D. of 6.2 and S.E.K is .61. Range of correlations is between .05 and .6 with an average of .282. Below the average correlations are attained for tests 1, 2, 5, 6 and Pay. The distribution is negatively skewed as if the examination for this sample was relatively easier than other examination.
It should be noted that it is the highest $M$ of 53.6 after 53.5, that is achieved by the sample during their training career.

12. $M$ of Pay for the group is is 38.75 with an S.D. of 67.9 and S.E.M is 6.67. This variable is added to this group as part of the composite criteria because it is considered that aptitudinal energy is the source of earnings and their levels. The range of correlations between Pay and other variables is -.056 to .408 with an average .132. Below than average correlations are found between Pay and tests 1, 2, 5, 7. It should be noted that some other correlations are too low. On the other hand the trend is unmistakable. All the tests having a loading of the factor C correlate with Pay higher than the average. Tests 1, 2, 5, 7 are special ability tests. The sample represented here in pooled form tends to contaminate the variance of special ability tests. If we had a larger sample representing each special training and job group, it could be shown that these tests also have higher correlations.

13. Analysis of data in terms of age groups shows some interesting trends. Table 4 shows the Mean, S.D.s. and S.E.ms. for the three age groups into which the sample has been divided. The youngest group 240 to 330 months has higher $M$ scores for Tests 1, 2, 3, 4, 5, 7 H.S., Int., Grad. It shows
that it has the lowest \( M \) scores compared to the elder groups on test 6 and Pay. Further, it has the next higher \( M \) score for P.G. Also the \( N \) of this sample is only 25.

S.D.s for this group are larger than other age groups for tests 1, 2, 3, 4, 5, 6, H.S., Int. The S.D.s are larger for tests 1, 2, 3, 4, 5, 6, Inter, Grad, P.G. and Pay, as compared to the other two age groups.

14. The age group 331 to 402 months' shows next higher \( M \) scores for tests 1, 2, 3, 4, 5, 6, 7, H.S., Int., Grad. It has lowest S.D.s as recorded as compared to other age groups on Graduate and P.G. The \( N \) of this sample is 47.

15. The oldest group 403 to 715 months has \( M \) scores lowest as compared to other groups on tests 1, 2, 3, 4, 5, 7, H.S., Int. Grad., P.G. Test 6 and Pay variables show for this group highest \( M \) scores compared with other groups. S.D.s are next larger for tests 1, 2, 3, 4, 5, H.S., Grad., and largest for Pay, smallest for tests 6, Inter and P.G. \( N \) is 32. S.D.s follow the same trend as the S.D.s.

16. Grouping on the basis of sex and their analysis has not been done because out of a total of 104 only 13 are female. It is visualized that there will be significant results to corroborate studies done on the measurement aspects of aptitudes in sexes.
DISCUSSION:

1. Stipulated number in groups has not been reached. In the education group Rs.250/- can not be started pay but most earn this sum through private tuitions. This has led to pool the total sample. This pooling has resulted in the lowering of $\mu$ wider dispersion.

2. Most $H$ scores of this group do not seem to be different than the pooled group of student samples. This fact has its advantages and drawn backs related to the study. It can be shown for example that the student pooled group and this sample comes from the same population. It makes it easier to show that the establishment of stable norms is possible so that they are usable for both the student and working population.

3. On the other hand one obvious disadvantage is that study area aptitude profiles as visualized to be established comparable to the profile of 'expert' group may not be established. They may have to be established solely based upon the student group difference on the test and examination scores. The establishing of relevant cut off scores will have to be done in terms of the pooled expert group scores and not for individual expert areas. The estimate that in this sample also there may be a certain percentage of misplacements will have to be carefully explored. It is possible that the 'professional
level profile may have to be established with stricter criteria in mind. It is possible that this group will act as an expert group if the cut off scores are set at 1.00 below the M score of each test and examination.

4. It may be recommended to other research students that they would be better advised to try and locate this type of stratified samples for the purposes of data collection first. Individual approach is more effective in getting the required data.

5. It can be said that probably there is no difference whatsoever in the test performance as a result of the size of the groups tested and if there are; variations in groups sizes tend to cancel them out. The size of this total group as related to the student's group also does not seem to have any significance in the study.

6. General observations of Test 1 data has shown several features of this group. M score is 43 which is just a little higher than the 50th ile of the American population. S.D. is 9.8. The trend of correlations shows that probably there is a set of aptitudes which goes together for this group. It can be said that numerical reasoning, clerical and allied habit of 'matching' together with numerical computational work, goes to make an essential trio.

If we can relate the clerical aptitude with various levels of study it can be pointed out
here that the aptitude seems to develop after high school and reaches the peak within the four years upto graduation. Variety of post-graduate training and later professional work is reflected in lowered correlations with the test. It should be noted that all correlations higher than .195 are significant at .05 and .245 at .01 level for this sample. Education after H.D. and upto graduation helps in the exercise and facilitation of clerical aptitude.

7. Data for test 2 shows that arithmetical computation and numerical reasoning go together as represented by a r of .56 between this test and Test 6. There is a trend in this sample for computational, mechanical matching and clerical perception to go together. Probably the better tests do not represent independent factorial make up from each other for this sample.

The scores show some correspondence with later achievement examination marks. It seems to suggest that there is no commonality between computational work and the work for which the sample earns its pay. It seems that a large number of this sample does not probably have to do this type of work. There is shortage of top level people in this sample who are known to deal with numbers e.g. bank executives, commerce accountancy, income tax executives and financial advisers. Probably this may account for the reverse in the general trend of correlations.
Also it is known that most physical science sample, and engineering sample does little work related with computation. Most of them do more verbal work loaded with English vocabulary and use of English language. Higher level jobs do not demand this factor except in cases where supervision and constant vigilance has to be exercised in keeping numerical records accurate.

3. Test 3 is the three dimensional space perception test. It is expected that there will be higher correlations between this and test 5 and 7 which are .448 and .547 respectively, the tests for two dimensional perception and mechanical matching. Tests 3 and 4 have a r of .51 for this sample. General ability in this sample as represented by this correlation has more in common than as represented by test 6 i.e., numerical reasoning. A correlation of .236 with test 6 compared with the above suggests the above point. It should be noted that the loadings of G in all these three tests differ from each other and low correlation may only be due to low loading on test 6.

We can say that three dimensional space perception and training after high school years have some elements of commonality as reflected in continued higher correlations. The test has significant relationship with those examination marks as compared with other tests, specially those of special abilities which do not have a loading of G in them. Book reading,
note writing, numerical and computational work are not experienced which can help in the development of this type of ability. I think professional work in India is differently oriented than specialized professional work in America. We have more human relations management as part of professional work than actual work with hands, tools and other physical environment, as compared to American structure of specialization jobs. The positively skewed distribution of scores shows that this sample finds the test difficult. A larger percent of the sample is formed by social science and education groups.

9. Test 4 is English vocabulary synonyms, antonym tests. This is one of the tests which has very high relationships between this and other examinations. Also, the M Score is distinctly different as compared with the student group samples. It is a function of higher general ability and not special verbal aptitude which can account for higher scores on the test. The sample distinguishes itself by having about 3 raw score points higher than the student group. It suggests that a professional sample is probably selected mainly on the basis of English word fluency, reasoning and proper use. Further it should be pointed out that learning and use of English words is one of the important operational factors in the current professional work. They have to be fluent in English to succeed in their work here as far as inter communication with colleagues is concerned.
It is expected that very low positive correlations will exist between this test and other tests of battery except those which have a loading of factor 0. Correlation with test 6 is .23 which is significant at .05 level. The trend of correlations between this test and examinations is the clearest. Correlations of .37, .453, .53, .33 and .408 are achieved for H.S., Int., Grad. P.U. and 'Ray', respectively. There is no doubt that this sample always had the use of English vocabulary as a common factor with work which results in obtaining marks at these examinations. The fact that the test scores correlate highest with 'Ray' as compared to other examination and test scores is significant. It seems that fluency with English vocabulary and levels of pay have quite a bit of common. There is no doubt that earning of 'pay' and use of English vocabulary go together to a degree higher than achieved by any of the examinations or tests. There can be so many social, political and other implications of the fact that a thorough discussion will lead to too many points not directly related to the study. V factor is the most significant, outstanding and important factor, expressive of differences between this sample and others. It shall be shown later that it counts the most.

10. Test 5 is tools and machines figure matching test. It differentiates generally the samples who work as technicians and skilled
mechanical trade personnel from others. The test has loading of two dimensional space perceptions. High positive correlations are expected between this and test 3 and 7. It seems that a commonality exists at a general and superficial level for this sample in this respect. It is possible that this sample has clerks and skilled mechanics working with them whom they have to supervise to do which they frequently have to use the three abilities which are highly correlated with each other in this sample. It is also possible that the sample has had these special abilities of higher than average order. The sample shows that on the whole scores for these tests are quite high and the standard deviations also large.

There is a suggestion that space perception is one of the strong points of this sample. The scores on test 7 show reverse trend. Because both the tests scores are combined to derive the two dimensional perception score, it can be seen that test 7 and this combined together will give a truer picture of this aptitude in this sample than test 5 above.

14. Test 6 has loadings of factors of numerical reasoning and G. Numerical ability is the most universally used activity by literate samples, both in examination and every day work.
Presence of correlation of average degree with test 3 and those which are very near this average, i.e. with test 4, 5 and Pay make a profile of reasonable, aptitudes and scores. It seems that partial or total specialization at the graduate and P.G. level affects the correlations between these tests. The fact that there is significant correlation between 'Pay' and test 6 is notable. It may be seen that test 4, test 6 are closely related with 'Pay'. On the other hand, specialized work at the graduate and Post-graduate level may not be loaded with this factor, specially in areas where more book study and qualitative factual information is to be memorized to succeed in the examination. Generally, language, education, law groups have lower M scores while as Physical Science, Medical Engineering groups have appreciably higher M scores amongst student samples. It may be apparent by the size of the S.D. that in this respect this group is very compact. The same is tentatively pointed out by the leptokurtic nature of distribution.

12. Test 7 is multiple matching of figures. It is finer discrimination and is made more difficult by giving a large number of figures from which the same looking have to be selected as correct answer. The test is designed to discriminate between skilled jobs of mechanical nature. Generally, watch-making, gold-smithy and medical surgery pharmaceutical work are related with this type of factor.
Increasing correlations from H.S. to Int. to Graduate and then a slight decline at the P.G. level, indicate that at various levels and certainly for some special courses, the test can be used for the purposes of prediction and diagnosis with some level of confidence. Pharmacy, medicine, engineering seem to be the areas wherein it may have predictive value. On the other hand it can be used for purposes of measuring the liability aspect for individual students in these courses as well as other courses.

13. Marks at High School show that within the sample there are persons who had third class as well as distinction marks. Inspection of the distribution shows 13 in the third class or division, 42 in the first class or better and 44 in the second class. It is a negatively skewed distribution, showing that the sample M score is lower than the Mdn. There will be exactly the third class of the sample who will be rejected if the cut off score is kept 1 S.D. below the Mean. The fact that there is some selection based on H.S. marks is evident from the M score of this sample. Usually, in pre-selected samples of students in engineering, medicine the score is likely to be higher than this. Most other samples may show different trends.

Correlations between this examination and others, significant in their order of increasing degree are test 6, P.G., Pay, test 4, Grad., Int. In other words the order of a proposed profile would
be Int., Grad, Test 4, Pay, P.G. and test 6. Considering that the sample may have some degrees of contamination effecting the accuracy of selection, it is possible to find some tests from this battery which can be used for detecting students at High School level also, who can be easily guided to undertake other training than the professional training. It is indicated that poor mathematics and English at High School seem to be the liabilities which seem to effect a proper selection and also seem to indicate that the candidates could be otherwise guided to pursue lower level special training. The fact that H.S. probably is a better predictor of 'Pay' than Grad., P.G. shows that probably it is a better examination of general educability than others. On the other hand it must be seen that the age at which generally this examination is taken, is the period at which most adjustment problems of emotional, personal nature, problems of 'storm and stress' at the beginning of puberty are faced at this time and the Intermediate examinations, which between them show highest correlation.

14. Inter examination M of percentage comes to as low as 43.2. This is the net loss of 7.25 percent points compared to High School marks. Also the size of S.D. decreases. At least two hypotheses can be started to account for the above. Generally puberty, leading to essential but disturbing biological changes effect adjustment level of the sample. It can be said that in this sample puberty effected most
of the sample in the same manner and approximately in the same direction. The number of third class increases from 18 in II.S. to 32 in Int. of second class from 44 to 61 and decreases in first class from 42 to 11. It is obvious as to what is going on.

Inspection of table 4 shows that r between Int. and test 5 is the only one which is not significant at any level of confidence. Other tests and examination show correlations which are significant at .01 level of confidence. It seems that Inter. examination as compared to others has elements which show commonality between the various aptitudes reflected in the test battery and the examination marks. The trend seems to be that a general alround expansion and development starts taking place at the time of this final examination. The examination, it seems, shows an aptitude picture which starts unfolding itself at this time. There are elements of commonality for this sample in the four situations, viz., examination at Inter, Graduate, Pay and the taking of GATB. It will be interesting to further find that the commonality of these experiences has the same quality of heightened tension resulting in the expression of heightened general alround energy reflected in aptitudes test and examination marks.

If D.S. is found to be a good indicator of general educability, Inter examination, is found to be indicator of the expression of general aptitudinal energy under development in emotionally adverse circumstances.
15. There is a rise of approximately 2 points in mean score as compared to H of Inter marks. There is a further narrowing of S.D. This examination is generally considered the last examination after which professional choices have to be made. The level of training is also expected to be reached after which jobs of higher level can be achieved. The distribution shows 10 to be in first class, 67 in second class and 27 in the third class. This trend shows the normalizing tendency in the sample. The large number of cases in second class and third class show that graduate scores distribution is as near to the expected normally as possible in a diversified sample, like the present one.

With the exception of r between test 6, the examination has quite reasonable correlations with the test battery. All of them are significant at .05 and majority of them at .01 level of confidence. It seems as if the stabilizing of the aptitudinal structure seems to take place at this level. It is evident from the fact that at H.S. verbal, Arithmetical reasoning shows highest and significant correlations within the test battery. At Int. level Spatial, verbal, Arithmetical, Clerical and two dimensional perceptual abilities all have significant correlations. At the graduate level, with the exception of Arithmetical reasoning, all the other tests show higher correlations and about the same or
higher degree which are achieved at Inter. level.
It could be said that aptitude structure tends to stabilize during these stages for these level of students. Changes start taking place during and soon after this examination at the graduate level. In this sample, general level of scores on the battery test is higher than many student group. Also these show the effect of pooling which leads to a tendency to normalize despite there being very highly specialized samples within the group. In this sample, at this level indicates only a gross parameter. Subgroup N of the constituent samples differ in level, ability, examination, training etc. and thus do not represent each other. It should be accepted here that this factor tends to effect the data and lower the correlations and the N of the marks at this examination.

16. At the P.G. level there is further improvement in the achievement. The variability keeps becoming smaller as the examination levels go higher. The fact can be accounted for by accepting that the members of this sample started with greatest variability in their formative stages and gradually turned towards more homogenous level and quality of learning as a result of which at the end of training they were quite near to each other as far as the level and achievement at P.G. level is concerned. The meaning of percentage at Post-
graduate examination of these level of students is nearly not very different except in the most glaring cases of individual achievement of both lowered and heightened attainment. In this sample, it seems that most people are representative of the population who are selected on more than only the post-graduate examination marks. There are only 5 third class, 83 second class and 16 scores in first class. There is more homogeneous and heightened achievement at this level for this sample.

Correlations between P.G. and clerical perception Arithmetical reasoning and Pay are not significant at any of the stipulated levels of confidence. It can be noted that for the purposes of prediction in this sample some of the tests of the battery have even higher correlations than examination, with this examination. A combination of two dimensional, three dimensional and verbal reasoning tests seem to predict as well or better than the H.S. and Inter examination percentage of marks. Also it is to be seen that some element of special aptitudes at this level of study seems to enter in the performance of this sample. Post-diction is possible but may be not so conclusive. On the other hand it can not be denied that a pattern of special abilities and the general ability is achieved which differentiates this group from student groups.
17. 'Pay' in this sample is the variable which distinguishes this sample from the student samples. The Mean of 'Pay' in terms of rupees and Naya Paisa is 318.75 and the S.D. is 67.9. Exactly 21 i.e. 25% of the sample had to be included in the interval of 'above Rs. 400'. The range in this interval is very large. It extends between 410 and 1300. This may show that probably the M of Pay is a little lower than what could be obtained if these cases were to be included in their respective intervals by increasing the number of intervals. On the other hand, inspection of the raw data suggests that within this group of 400 a majority of cases do not go beyond 500. It can be pointed out that from the achieved mean, within three standard deviations it would cover upto 520 and very little material difference shall be observed. There are no more than five cases which go beyond the 520 marks. These cases are included to show the range. These cases are of senior professors or technicians who have advanced in pay because of age and professional seniority.

There are 24 cases here of teachers whose usual government approved grade starts at Rs.207. Most of these earn upto Rs.250.00 through additional private tuitions. This fact of lowered salary start for teaching profession after a B.Ed. degree came to the notice of the author when the test administration had been completed with one of the
teacher group. To get some representation in the
group, this subgroup was therefore included.

Test 4, Inter, High School, Graduate
have correlations significant at .01 level of
confidence, Test 6 at .05 level.

All special abilities which are significant
for successful work at the clerical and skilled
and semi-skilled levels of work, have correlations
bordering 0 in this sample. Could it be due to the
fact that this mixed group tends to lower the
scores on special ability tests.

On the other hand correlations of .145
.408, .208 with test 3, 4, 6, the tests which have
loadings of factor 'G' or general ability suggests
that 'Pay' is more in common with general ability
than many special abilities. The fact that highest
correlation is achieved between 'Pay' and the scores
on vocabulary test scores is significant. It seems
that the ability to use English language goes together
with earning pay providing the marks at various
examinations have been better than second class.
The profile of significant factors which go together
with 'Pay' in their order of increased significance
is Arithmetical computation and reasoning, Graduate
marks, H.S., Inter and English vocabulary convertible
into verbal ability. The fact that marks at F.C. are
not significantly correlated with 'Pay' show that it
is not this examination but a relative picture of
examination marks at all earlier levels which carries weight in getting to earn pay. English vocabulary is always to be considered as an important factor in such professional samples.

The inspection of the distribution shows another important trend. Upto £250.00 there are 24, between 251 and 300-18, between 301 and 350 -24, between 351 and 400-17 and above 400-21 persons. It will be observed that there is no normal distribution if number of percent of cases are dispersed at various levels of 'Pay'. This fact in itself needs clarification. However, it will be easier to discuss the question when 'age' factor is discussed.

It was seen in the preliminary study of student sample that youngest score very high on all tests. This group was divided in three groups viz. and 20 years to 27 years and 6 months; 27 years/7 months to 33 years and 6 months and the third from 33 years and 6 months to 59 years 7 months. The young and relatively brighter of any student groups get into jobs by 25 years of age. In other words, the young worker gets a job, completes his probation around this age. It is the formative period in our job structure.

24% of this group are included in this lowest age interval. The chief characteristic of the age group is that in almost all test scores and examination percentage of marks except P.G. and
scores on test 6. This group scores highest.

It emerges that the standards of the group compared with higher age groups are certainly higher in these respects. It is complained that the new crop of professional and post-graduate personnel is of lower standard than the earlier counterparts. The results here show this to be the other way around. It is possible that this group has lesser learning of the field which may reduce their output, but they certainly show higher potentiality to learn. It is not their standards that are low but probably the methods of evaluation of their work, methods of end level of their material learned that are low. Probably training in University is not sufficiently professional field oriented. It seems it is 'abstract learning' oriented for which they show higher standards in all respects than their elder and eldest counterparts.

The fact that on 'Pay' they have a comparably lower mean than other groups, should be expected in our structure of jobs. The trend in India towards better methods of evaluation resulting in initial higher start and more important and responsible work, for the younger professionals is gradually taking roots.

Larger variability characterises this group. It may be due to the small size of the group most probably it is the characteristic of this group to have more versatility. The group represents the best in the working population. There are hardly any
significant differences between this group and the next older group.

19. Age group 27 years 7 months to 33 years 6 months is the largest age group in the sample. The trend of scores generally points to the fact that it is the middle most group between the three groups in all respects. This sample is assumed to have stable professional standing in that they are the rising experts in the professional sample. The mean score achieved for this group are higher than the oldest group and lower than the youngest except at the F.G. level. On the other hand the unique feature of the sample is shown in the fact that on a majority of tests the S.D.s are lowest recorded. It points towards the relative homogeneity of the sample scores. Only at the Graduate and P.G. levels this homogeneity lessens. It will be observed that the differences between this and the younger group are not significant generally.

Considering the distances between groups, it emerges that the younger and this group are nearer to each other than this group and the older group except in the case of "Pay". It can be noted that this age group will be termed as the middle age group and the total picture presented suggests that in this group a stable, equally efficient and working population exists. They are the finished products in the job structure who give the experience to the younger group and get things done. It seems that they are the norms for comparison from which
evaluations of the older and the younger can be done. It can be suggested that a larger sample of this age if explored to find further details, it may be shown that they are the backbone of most productive enterprise.

20. The age group 33 years 7 months and upwards is characterized by lowest IQ scores on all tests except test 6, as compared to the younger group. Not only in this true about the test scores but examination scores also. It is expected that at this age level the general aptitude level goes down and efficiency is lowered. The fact that their examination percentage mean scores are also low, shows that probably within the group there are more of those who have persisted and a few of those who even now retain their early proficiency. This point emerges from the fact that the S.Ds. are next larger for this group as compared to the other two groups. Length of service, automatic promotion, stable social background, average consistent output are main characteristics. Most 'experts' come from this group. It seems that the evaluation method is all in favour of these people. They are called in advisory capacities in framing the new jobs. In this age group there is more emphasis upon the ability to handle people than doing the actual work on the spot. It is possible that a long period of disuse of the capacities lowers the efficiency because on the spot work is provided less and less. They usually are heads of their sections and departments who do more theoretical and general supervisory work than practical
manipulative work. It should be emphasized here that there is a greater distance between the levels of this group and the youngest group. The fact that this group usually sets the criteria of evaluation of the younger ones, the level of insightful evaluation is going to be effected. Probably the general impression created that younger working group standards are lower is nothing but the projections of this group whose standards themselves are lower.

21. Classification based on sex for this group has not been done because of the small number of women in these level of jobs. This in itself is a general conclusion. It may be noted that progressively larger number of females are doing post-graduate study.

CONCLUSIONS:

1. It is possible to compare a pooled group composed of as diverse trainings and backgrounds as this, if all of them fulfill the composite criteria laid down. Assumptions that top post-graduate level of study is meant for people with the top ability level is emphasized to a large extent from the study of this group.

2. An independent measure of general aptitudes like the GATB can be used to find the relative levels of aptitudes which are required to perform tasks from which a 'pay' of the stipulated standard is earned. Measurement of the levels of ability and aptitudes of various professions can be made possible by such a
test as the GATB.

3. Composite criteria like the one used here; for stratifying samples; can be used in order to precisely lay minimum requirements which can be used as frames of reference and norms for the purposes of diagnosis, counselling and evaluating. These composite criteria seem too mixed but the people interested in the final aspect of achievement i.e. earning of a reasonable pay usually have to have the other coexistent conditions viz. a P.G. degree and stability to the length of passing over the period of probation, under consideration.

4. Theoretically, a validation group of 180 representing 20 members in each of the 9 areas of post-graduate study and work, is needed. The varieties of jobs available is too numerous to say that even such a number can be accepted as a minimum in the circumstances. Stipulations about these samples about the number required should not be based on the number of students covered in the study. The two populations are not comparable in respect of their availability for a study of this type.

5. In a field study, the process of contacting the required sample is a process which requires more of flexibility, local adjustability and promptness of action. Organisations and associations are little help in making such contacts. It is concluded that personal, direct approach is more usable than other.
6. Constancy with regard to place, time etc. can not be controlled in these groups. Also numbers in a group can not be controlled. There seems to be no ill effect of these inconstancies upon the performance on the test in this sample. Other controls in administering tests can be easily kept constant.

7. Areas of Medicine, Language, Law, Commerce are inadequately represented. Inability of the doctors to meet in groups, paucity of jobs in language specialized areas, general lack of time to cooperate for lawyers and business executives is the main cause of the inadequacy of proportional representation of these samples in this group.

8. All professional and post-graduate training periods after High School, modes of examinations, weight of examination scores, and the meaning of percentage of marks differ in most major areas. Medical and Pharmacy; Engineering; Arts & Social Sciences, Physical Sciences and Languages; Law; Education; each one of them differ slightly in respect of number of years required to finish training, percentage of marks required for pass, examinations to be taken, selection procedures, minimum background etc.

9. Test 1, the clerical aptitude test can be concluded to have fair predictive value for most tests in the battery and moderate value for Inter
and Graduate examination marks. By itself, it is probably a characteristic of this group to have high clerical aptitude. It shows itself as a general habit, a cultural correlate than a special ability. Relevance as witnessed by increased correlations seems to enhance during the under-graduate study period.

10. Computational work may be essential during training but not a speciality in professions and has very little influence with earning a wage. General level of scores are quite high.

11. Three dimensional factor in the sample which also has a loading of general ability seems a distinguishing characteristic as far as Inter, Graduate and Post-graduate examinations in this group are concerned. This sample comparably shows higher mean score but generally it is not one of our strong points. The test is significantly correlated to be considered as a must for being included in any 'professional' profile of aptitudes. It will probably differentiate the concrete general ability from the bookish clerical perceptual.

12. Test 4 is the test on which a differentiation can be made between the students and professionals. As a measurement variable it achieves highest significance for the prediction of 'pay' and marks at various examinations. Verbal reasoning factor is very closely related with the achievement of
marks at various examinations. The test has to be definitely made part of every 'professional profile' in all areas of work.

13. Two dimensional perception as measured by the tool matching test has little significance for the purposes of prediction of examination marks. The test is found relatively easy by this group. The finer two dimensional perception measured by test 7 seems to have a different factor loading. It has to be noted that some professional areas like Engineering, Medicine, Pharmacy have parts of their preparatory training designed to develop this ability. This sample distinguishes itself by having high mean scores on the aptitude, though it has hardly any relationship with 'Pay'.

14. Tests 2 and 6 are components of numerical ability and general ability of numerical reasoning contents. Conclusion emerges that after High School, at most levels numerical computation becomes meaningless while numerical reasoning helps to a certain extent. Work and 'pay' have a relation with numerical reasoning. It may also be of use for differentiating work areas. The size of standard deviation achieved and the leptokurtic nature of distribution shows a great homogeneity in the sample on test 6. It can be said that most jobs have a fairly close range of demand for this type of aptitude.

15. The trend of marks at H.S., Inter, Graduate
and Post-graduate level is very clear. There is a normalizing tendency when all these examination marks are considered together. The total average of these for examination mean scores is 52.26. It will be seen that most mean scores do not differ significantly from this average of the mean scores. From each other they do differ rather clearly.

16. Another trend is to have highest achievement at H.S. level and lowest at Intermediate with gradual heightening at later levels.

17. Prediction of 'Pay' from examination marks also shows a specific trend as reflected in the correlations achieved between these variables. Int., H.S., Graduate examinations and 'Pay' have higher correlations in that declining order. Post-graduate marks have correlation but it is not significant. It seems that no single examination score can be used for prediction of 'Pay'. Generally all examinations need to be considered.

18. Examinations at various levels have different correlations to show that at different levels different aptitudes show various commonality levels. Aptitudes develop, stabilize are left unused during study period. A few of them become of secondary use. General ability goes together with examination marks. Ever since, only total marks have been considered, it is not possible to isolate individual papers and aptitudes which are most closely related. It can
be posed as a problem for further detailed study.

19. General picture of all the examination and aptitudes and their correlations between them points out the conclusion that GATB can be used for the purposes of diagnosis. In this sample fairly high correlations are achieved most of which are significant at the stipulated levels of confidence.

20. On the whole, it is apparent that even though the group is mixed up, even then it provides scores and statistics to derive norms which can be gainfully employed for diagnostic purposes. Prediction levels are about the same as are achieved generally for most tests. It should be understood that improvement in the data after the enlargement of the number in the sample can be achieved and more stable results obtained further.