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RESEARCH ARTICLE

ASSESSMENT OF COMPETENCIES REQUIRED BY UNDER GRADUATE STUDENTS IN AUTONOMOUS ARTS AND SCIENCE COLLEGES IN MADURAI

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ABSTRACT

Madurai is one of the most traditional and prominent cities in Tamilnadu, India. Madurai has the distinction of accommodating a very high number of Arts & Science Colleges offering UG and PG programmes. This study aims in analyzing the Competency Mapping of Under Graduate students in Autonomous Arts & Science Colleges in Madurai. The various competencies needed by these students are Psychological Health, Organisational Skills, Technological Skills, Reading & Writing Skills, Listening and Speaking Skills. The main criterion for deficiency in the expected competencies is lack of awareness. They don't realize what is needed out of them, and also don't take essential steps in developing the same. A sample size of 400 students was chosen for this study. The period of the study was two months ranging from September 2013 to October 2013. Suitable results and conclusion has been obtained.

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1) INTRODUCTION

Madurai is one of the most traditional and prominent cities in Tamilnadu, India. It is thickly populated by educational institutions. These educational institutions comprise of Kinder Garden Schools, Primary Education & Matriculation Schools, Higher Secondary Schools & Colleges. Colleges offer both Under Graduate (UG) and Post Graduate (PG) programmes. The number of students transiting from Higher Secondary Schools to Colleges has expanded at an enormous exponential rate over the past few years. Madurai has the distinction of accommodating a very high number of Arts & Science Colleges offering UG and PG programmes. This study aims in analyzing the Competency Mapping of Under Graduate students in Autonomous Arts & Science Colleges in Madurai. The researcher hopes that this study would cover the essential competencies needed by these students and also would suggest suitable measures for correcting the deficiencies in competencies. In fact, many might agree that for transforming India into a powerful nation the role of youngsters is significant.

2) Definition of competency mapping

Boyatzis (1982) described competencies as underlying characteristic of an individual, which are causally (change in one variable cause change in another) related to effective job

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performance. Kofi Annan (UN, 1999) describes competencies as the combination of skills, attributes, and behaviors that are directly related to successful performance on the job. UN further classifies three categories of competencies for its employees: Core or generic competencies for all staff (e.g., communication, teamwork) Managerial competencies (e.g., empowering others, decision-making) Technical or specific competencies related to specific jobs (e.g., one job entails the competence to “receive, identify, register, and distribute letters, documents and/or other objects.”).

3) Review of literature

Based on the Conference “Competencies: Communication for Development and Social Change” Held at the Rockefeller Foundation Bellagio Study and Conference Center Bellagio, Italy January 28-February 1, 2002 - Skills that received the highest ratings include the ability to understand the target audience and the context and culture in which people live; the ability to listen and observe; and the ability to communicate clearly and effectively. Mily Velayudhan T.K (2011) assessed the competency of the employees of two software companies relating to 20 broad categories. The dimensions taken for consideration were Drive for results, Process management, Functional expertise, Personal effectiveness & ability to influence, Innovation, Team effectiveness, Customer service, Self development orientation, Analytical thinking, Physical ability, Knowledge, Aptitude, Motivation, Communication, Leadership, Managerial ability, Negotiations, Personal values, Social skills, Technical competence. Simple random method

was used to collect the data from the respondents. Tools like t test were used to identify the present competency levels and the competency gap. The results showed that Drive for Results (0.028), Process Management (0.028), Functional Expertise (0.031), Personal Effectiveness and ability to influence (0.036), Innovation (0.011), Customer Service (.008), Analytical Thinking (0.034), Knowledge (0.000), Attitude (0.000), Motivation (0.004), Communication (0.035), Leadership (0.034), Negotiation (0.025), Personal Values (0.001) had significance value less than 0.05. So it was inferred that the mean levels are not the same among the IT professional with different companies. Also from the results, it is clear that Null Hypotheses are not to be rejected in the following dimension: Team effectiveness, Self Development orientation, Physical ability, Social skills, Technical Competency, since the significant value is more than 0.05. In all the dimensions where significant differences are found, the employees of CTS scored higher values compared to HCL employees. It is found that the performance levels of CTS employees are higher when compared to the employees of HCL. The gaps are found to be high among the employees of HCL in most of the dimensions. These could be developed by giving training and personality development classes for the employees.

Beth G. Chung-Herrera *et al.* (2003) have developed a competencies model for Cornell Hotel and Restaurant. They have suggested that eight HR activities like recruitment & selection, training & development, performance appraisals, counseling & mentoring, reward systems, career development, succession planning & change management can be guided or enhanced with the help of a well developed Competency Model. They further pointed out that a competency model is useful for building an integrated framework for developing a company's human-resources system. Leaders in Hotel Industry need to have skills like ethics & integrity, time management, self development, flexibility & adaptability. They further justified the absence of an industry wide model of competency mapping. Furthermore, an industry- wide model helps to paint a comprehensive picture of the critical skills needed by the entire industry, thereby assisting senior managers in hotel organizations as they devise and implement their recruitment, selection, and development systems. They further developed a final competency model consisting of 8 overarching factors, 28 dimensions, and 99 specific behavioral competencies. The factors and dimensions were derived from the literature on competency models and through hospitality managers' feedback. The eight overarching factors are communication, critical thinking, implementation, industry knowledge, interpersonal skills, leadership, self-management, and strategic positioning. Each of those factors comprised up to six dimensions that captured various aspects of that factor. Leadership, for example, is composed of the following six dimensions: developing others, embracing change, fortitude, fostering motivation, leadership versatility, and teamwork orientation. As another example, the following exhibit shows the behavioral items and dimensions for the self-management factor.

4) Autonomous arts and science colleges in Madurai

Autonomous status covers certificate, diploma, undergraduate, postgraduate and M. Phil. programmes offered in colleges that are autonomous and those seeking autonomous status. The parent university will confer the status of autonomy upon a

college that is permanently affiliated, with the concurrence of the state government and the University Grants Commission. Once the autonomy is granted, the University shall accept the students of autonomous college for award of such degrees as are recommended by the autonomous college. The Act and Statutes of the universities ought to be amended to provide for the grant of autonomy to affiliated colleges. Before granting autonomy, the university will ensure that the management structure of the applicant college is adequately participatory and provides ample opportunities for academicians to make a creative contribution.

The National Policy on Education (1986-92) formulated the following objectives for autonomous colleges. An autonomous college will have the freedom to:

- Determine and prescribe its own courses of study and syllabi
- Restructure and redesign the courses to suit local needs
- Prescribe rules for admission in consonance with the reservation policy of the state government
- Evolve methods of assessment of students' performance, the conduct of examinations and notification of results
- Use modern tools of educational technology to achieve higher standards and greater creativity
- Promote healthy practices such as community service, extension activities, projects for the benefit of the society at large, neighborhood programmes, etc.

There are totally 33 Arts & Science Colleges in Madurai, out of which 8 colleges have attained autonomous status. The colleges are The American College, Sri Meenakshi Government College for Women, Arul Anandar College, Fatima College, Lady Doak College, Madura College, Thiagarajar College, Vivekanandha College.

5) Competencies needed by undergraduate students

Psychological Health

Emotional well-being is a key component of college success. Students without good impulse control might end up spending their time drinking and partying rather than studying. Homesickness can also make college life more challenging, and depression and anxiety can make daily life a struggle. Students with psychological disabilities should talk to their school's counseling center, and schools are legally required to offer accommodations to students with mental health disabilities. Students who don't seek these accommodations, however, might struggle.

Organizational Skills

Time management is the key for succeeding in college. Students need to plan ahead for exams and projects, while still balancing the daily demands of attending class and completing homework, or perhaps even working a part-time job. Good organization plays a big role in proper time management, and successful students keep track of deadlines, assignments, communications with professors and other obligations.

Technological Skills

College students must be proficient in their technology skills to participate fully in today's electronically interactive college

learning environment. Students must be computer literate which means have:

- The ability to send and receive email.
- The ability to organize, analyze and interpret information systems and data, electronically towards project completion.
- The ability to attach, create, modify, and save electronic documents.
- The ability to use a Web browser.
- The ability to navigate the Internet.
- The ability to upload/download a file
- The ability to use Microsoft Office
- The ability to participate in e-learning groups that are often used in place of the classroom

Reading Skills

- Determine both what the text says explicitly and what can be inferred logically from the text
- Discern the most important ideas, events, or information, and summarize them accurately and concisely.
- Analyze the traits, motivations, and thoughts of individuals in fiction and nonfiction based on how they are described, what they say and do, and how they interact.
- Determine what is meant by words and phrases in context, including connotative meanings and figurative language
- Analyze how the text's organizational structure presents the argument, explanation, or narrative
- Analyze how two or more texts with different styles, points of view, or arguments address similar topics or themes

Writing Skills

- Establish and refine a topic or thesis that addresses the specific task and audience.
- Gather the information needed to build an argument, provide an explanation, or address a research question.
- Sustain focus on a specific topic or argument.
- Support and illustrate arguments and explanations with relevant details, examples, and evidence.
- Create a logical progression of ideas or events, and convey the relationships among them.
- Choose words and phrases to express ideas precisely and concisely

Speaking and Listening Skills

- Select and use a format, organization, and style appropriate to the topic, purpose, and audience.
- Present information, findings, and supporting evidence clearly and concisely.
- Make strategic use of multimedia elements and visual displays of data to gain audience attention and enhance understanding
- Follow the progression of the speaker's message, and evaluate the speaker's point of view, reasoning, and use of evidence and rhetoric.
- Ask relevant questions to clarify points and challenge ideas.
- Respond constructively to advance a discussion and build on the input of others

6) Statement of the problem

The number of students enrolling for Undergraduate courses in colleges in Madurai is augmenting year after year. Students join colleges with a lot of dreams, aspirations and expectations. Not everybody leaves the college with satisfaction. If anybody would ask the reason for their dissatisfaction, the institution or faculty members would be blamed. They seldom realize that the failure is on their part too. Students also have joint responsibility in acquiring the needed competencies. The main criterion for deficiency in the expected competencies is lack of awareness. They don't realize what is needed out of them, and also don't take essential steps in developing the same.

7) Research objectives

- To identify the essential competencies of Undergraduate students
- To ascertain the level of competency of students
- To map the competencies of students with that of the desired level
- To suggest suitable measures for eliminating the deficiencies.

8) MATERIALS AND MEDHODS

Descriptive research design has been used for the study. Madurai has totally 33 Arts & Science Colleges in Madurai, out of which 8 colleges have attained autonomous status. The population for the study is the total number of Undergraduate students in these 8 autonomous colleges. A sample size of 400 students was chosen for this study. Stratified sampling technique has been employed. 50 students these 8 colleges have been selected for the study. The period of the study was two months ranging from September 2013 to October 2013. The primary data was collected using Structured Questionnaire adopting the method of Interview Schedule. Journals, magazines, periodicals, newspapers, books and internet support the collection of secondary data. The data collected has been analyzed using Percentage Analysis, Reliability Analysis, Kruskal Wallis Test & Wilcoxon Signed Ranks Test.

9) RESULTS AND DISCUSSION

9.1) Percentage Analysis

Percentage analysis is a statistical tool, which is used to identify the percentage of responses the respondent has given. It is used in making comparison between two or more series of data. The percentage analysis can be calculated using the below formula

$$\text{Percentage} = \left[\frac{\text{Number of respondents}}{\text{Total no. of samples}} \right] * 100$$

Table No 9.1.1. First graduate in Family?

Response	Frequency	Percent
Yes	219	54.8
No	181	45.2
Total	400	100.0

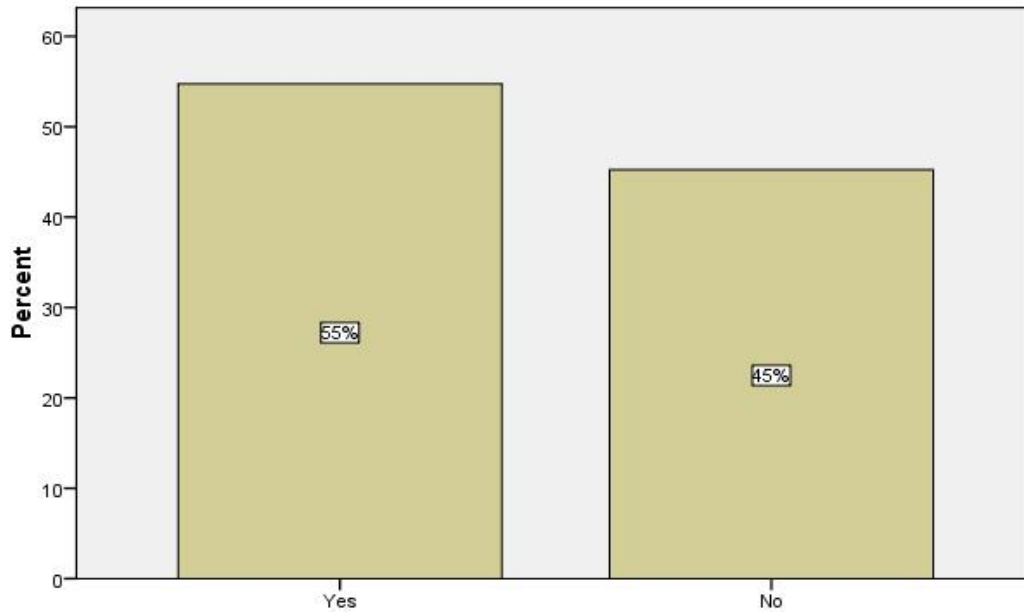


Figure No 9.1.1. First graduate in Family?

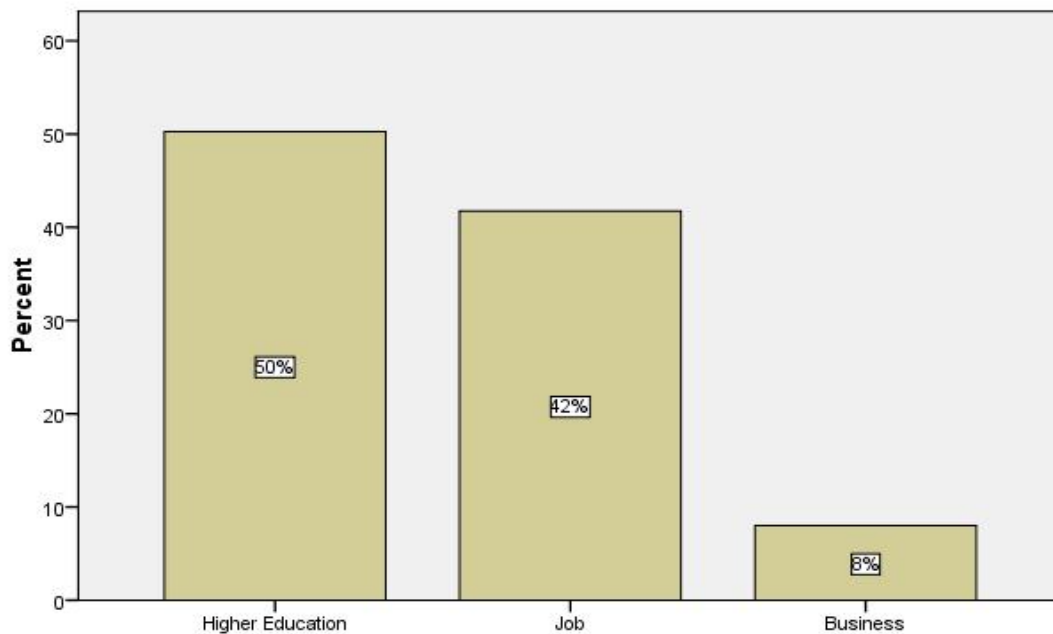


Figure No 9.1.2. Desire after UG

From the above Table No 9.1.1 and Figure No 9.1.1, we infer that out of 400 respondents, 55% of the respondents are first graduates, and the remaining is not. This clarifies that a majority of the UG students selected for the study come from a family, where they hold the distinction of being the first graduate. Hence, their responsibility in terms of academics and future growth is significant.

Table No 9.1.2. Desire after UG

Choices	Frequency	Percent
Higher Education	201	50.2
Job	167	41.8

From the above Table No 9.1.2 and Figure No 9.1.2, we find that while analyzing the desire of students after completing

their UG degree, 50% of the respondents want to pursue higher education, 42% of the respondents want to go for their jobs and the remaining 8% of the respondents want to start entrepreneurial activities. Still, there exists a resistance towards youngsters for starting business of their own. A majority of the respondents want to pursue higher education and then go for better jobs.

9.2 Reliability Analysis

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. A "high" value of alpha is often used as evidence that the items measure an underlying construct. However, a high alpha does not imply that the measure is unidimensional.

Formula

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

N = The number of items,

c-bar = The average inter-item covariance among the items.

v-bar = The average variance.

Ho: The scales are not reliable and cannot be used for further investigation

H1: The scales are reliable and can be used for further investigation

Table No 9.2.1

Case Processing Summary			
		N	%
Cases	Valid	400	100.0
	Excluded	0	.0
	Total	400	100.0

Table No 9.2.2

Reliability Statistics		
Cronbach's Alpha	N of Items	
.998	31	

From the above Table No 9.2.2, we come to know that the Cronbach's alpha score is .998. As the calculated value is more than the desired value of 0.7, we accept the alternative hypothesis and conclude that the scales are reliable and can be used for further investigation. The whole set of 31 items were considered for this analysis. This provides a green signal for proceeding further in the study and confirms the authenticity of the instrument being used.

9.3. Kruskal Wallis Test

The Kruskal-Wallis test is the nonparametric test equivalent to the one-way ANOVA, and an extension of the Mann-Whitney U test to allow the comparison of more than two independent groups. It is used when we wish to compare three or more sets of scores that come from different groups.

Formula for Kruskal Wallis test

$$\mathcal{KW} = \frac{12}{n(n+1)} \sum_{i=1}^{\kappa} n_i (\bar{R}_i - \bar{R})^2$$

Hypothesis 1

Ho: Birth place of respondents does not influence creating appropriate style for audience.

H1: Birth place of respondents does influence creating appropriate style for audience

Hypothesis 2

Ho: Desire after UG does not influence creating logical explanations.

H1: Desire after UG does influence creating logical explanations.

Table No 9.3.1. Test Statistics

Hypothesis	Variables Chosen	Chi – Square value	Sig. Value
1	Birth place of respondents Vs creating appropriate style for audience	336.275	**
2	Desire after UG Vs influence creating logical explanations	299.453	**

Table No 9.3.2. Rank Table

	Particulars	Frequency	Mean Rank	
Hypothesis 1	Creating appropriate style for audience	Rural 202 Semi-Urban 120 Urban 78	105.04 259.40 357.10	
	Hypothesis 2	Creating logical explanations	Higher education 201 Job 167 Business 32	107.52 279.84 370.48

From the above Table No 9.3.1, we find that the Chi – Square value for hypothesis 1 & 2 is 336.275 and 299.453 respectively. The corresponding significant value for hypothesis 1 & 2 is 0.000 respectively. As the calculated significant value for both the hypothesis is less than 0.01, we accept the alternative hypothesis at 1% level of significance. Hence, we conclude that birth place of respondents does influence creating appropriate style for audience. We also conclude that desire after UG does influence creating logical explanations. From the above Table No 9.3.2, we find that the mean rank of rural, semi-urban and urban is 105.04, 259.40 & 357.10 respectively. Hence, we conclude that students coming from a rural area need to create an appropriate for their audience when communicating. This is quite obvious. We also find that the mean rank of higher education, job and business is 107.52, 279.84 & 370.48 respectively. This shows that the students who want to pursue their higher education, after completing their UG create logical explanations better than those who want to go for their jobs and start business.

9.4 Wilcoxon Signed Ranks test

The Wilcoxon signed-rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ (i.e. it is a paired difference test). It can be used as an alternative to the paired Student's t-test, t-test for matched pairs, or the t-test for dependent samples when the population cannot be assumed to be normally distributed.

Hypothesis

Ho: There is no significant difference between evaluating speaker's message and understanding critical meanings

H1: There is a significant difference between evaluating speaker's message and understanding critical meanings

Table No 9.4.1. Test Statistics

	Following and evaluating speaker's message - Understanding critical meanings
Z	-7.071
Asymp. Sig. (2-tailed)	.000

Table No 9.4.2. Rank Table

Particulars		Frequency	Mean Rank	Sum of Ranks
Following and evaluating speaker's message - Understanding critical meanings	Negative Ranks	0 ^a	.00	.00
	Positive Ranks	50 ^b	25.50	1275.00
	Ties	350 ^c		
	Total	400		
a. Following and evaluating speaker's message < Understanding critical meanings				
b. Following and evaluating speaker's message > Understanding critical meanings				
c. Following and evaluating speaker's message = Understanding critical meanings				

From the above Table No 9.4.1, we find that the Z value is - 7.071, and the calculated significant value is **. As the calculated significant value is less than 0.01, we accept the alternative hypothesis at 1% level of significance. Hence, we conclude that there is a significant difference between evaluating speaker's message and understanding critical meanings. From the above Table No 9.4.2, we are able to ascertain that the number of negative ranks, positive ranks & ties is 0,50 and 350 respectively. Hereby we conclude that for 350 respondents, the degree of evaluating speaker's message and understanding critical meanings is the same. For 50 respondents, they have better quality of following and evaluating speaker's message compared to their ability of understanding critical meanings.

10) Conclusion

Students are the pillars of Modern India. They need to develop the right competencies in them. This study has analysed the required competencies in UG students. Through appropriate analysis, suitable results have been obtained. Students coming from a rural background need to develop an appropriate style for their audience. A majority of the students want to pursue their higher education and only a very few want to start their own business after completion of UG degree. Students are better in following and evaluating speaker's message rather than understanding critical meanings. Hence, this skill needs to be developed. The researcher hopes that this study would serve as an eye - opener towards the competency development of UG students.

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