

A Psychometric Study in the Performance of Distance learners

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About Author

Since 1978 the author has been actively engaged in conducting empirical studies in DE and has specialized in the teaching of Statistics, particularly for distance learners. By 1993 the author, experimenting on all the then prevalent components of educational technology, had demonstrated at various seminars including at IIT Kanpur the comparative learning environment harnessing print, audio, computer (CAL) and Educational film formats for a topic 'Statistics: An Introduction'.

Abstract

The paper shares the changing cantors in the studies on performance of distance learners and highlights the omission of psychological variables in the process. Based on an empirical study on an array of 12 variables, including psychological variables emerging from the Eysenck Personality Questionnaire, Lyn's Achievement Motivation Test and Bell's Adjustment Inventory, the paper discusses the role of various variables, with a special focus on 'Social Desirability', 'Achievement Motivation', 'Emotional Adjustment', 'Age' and 'Previous Academic Score' in distinguishing between 'Completers' and 'Non-completers' of the courses. And finally the paper puts forth some suggestions for ensuring a better 'completion rate' for distance learners.

Key Words

Performance, Distance-learners, Achievement Motivation, Adjustment, Personality

1. Introduction and review

Much water has flown through the Ganges and the Thames since 1982 when Coldeway lamented that an 'imprecise definition of boundaries and variables have limited the usefulness of research in distance education'. Now with databases generated at various institutional levels the world over, a number of reviews on distance education literature have been undertaken in which even the categorization schemes on research areas have been developed (Sujatha, 1988). Of late, the educationists, in general, too have realized that the scope of research in distance education is quite broad. It ranges from 'learning' to 'teaching' application, it addresses 'financial issues' and 'issues of access', it deals with the strategic use of technology, and so on. In this regard, the performance of students in distance education has also engaged some researchers. While most of the studies in the last century focused on comparing the performance of 'on campus' and 'off campus' students, in the current scenario the focus is also being laid on the performance with respect to the ICT factor. For instance, Tesarowski (1982) on the bases of three studies had concluded that the 'independent study students achieve at least as well as on campus students'. Identical results were reported by Javons (1982), Olmsted (2000), and Kotey and Anderson (2006).

In the Indian context some divergent views have been expressed by the researchers. For instance, Shashi (1972) and Panda (1980) did not find any statistically significant difference between the achievements of under-graduate students of correspondence and their counterparts in the regular system in the Delhi University and Utkal University respectively. Anand (1979) observed that the pass percentage of 'correspondence students' in the Panjab University was lower than that at the university level. While Biswal (1979) found that the 'students in the two streams do differ in performance but to an insignificant extent', Pandey (1980) observed that 'at an overall course levels, in Meerut, Delhi, Panjab, Punjabi, Bombay, SV and MK universities, the pass percentages of correspondence streams were higher than those of students in the regular streams'. In this regard, Sharma and Yadav (1987) have observed that while 'the quantitative output of correspondence education in different Indian universities differ significantly where the total average output of all the universities may be stated as satisfactory', 'the quality of academic performance of correspondence students differ significantly and may be termed as very poor'. In a study on examination results for language courses in 'distance education' and 'regular set-up' in the Panjab University, Mahajan (1991) has put forth some interesting observations. The study has revealed that though in the 1980s' students enrolled in the correspondence courses invariably secured top positions in the university examinations, but in the overall analysis there were vast disparities in pass percentages of students, unfavorable to the students of 'correspondence education' in comparison to their counterparts in the 'regular set-up'. The study also suggested that the female students have exhibited better pass percentage than their male counterparts in correspondence education.

In the recent context, the researchers have also shown their keenness in studying the performance of students in the light of applications and developments in Information and Communication Technologies (ICT). For instance, while Syed (2001) focused on the "impact of television on students' performance in assignments and final examination", Dutton and Dutton (2005) have suggested that 'students in the online section had higher academic performance, even when we controlled for other important variables'. Carbonaro (2006) has looked into the "factors that may influence online learning for distance education nursing students at a Canadian community college"

2. Need of the Study

A close scrutiny of the results and the scope of the studies suggest that the literature on the performance of students in distance education is virtually devoid of focus on the mental make-up of distance learners. A person's behavior and success is guided by many physiological and psychological factors. Biological urges, psychological needs and socio-cultural drives stimulate

behavior. And hence this attempt has been made with the help of the following revered psychological tools:

- Eysenck Personality Questionnaire
- Lyn's Achievement Motivation Test, and
- Bell's Adjustment Inventory.

The variables thus emerging from the psychological tools have been found to have bearings on academic achievements (Mohan and Gulati, 1986).

Besides scaling distance learners, the term henceforth used to refer to the students enrolled in distance education, on Personality (measured in terms of Social Desirability, Extroversion/Introversion, Neuroticism, Psychoticism), Achievement Motivation, Adjustments (measured in terms of Home Adjustment, Social Adjustment, Emotional Adjustment, Emotional Adjustment), for the study, information was also gathered on distance learners' age, gender and previous academic score (i.e., Score in the Graduation). It may be noted that Bell's Adjustment Inventory, in fact, refers to 'mal-adjustments', in the sense that higher score on any of the factors, i.e., Home Adjustment, Social Adjustment, Emotional Adjustment, Emotional Adjustment, in turn, suggests mal-adjustment on that count.

3. Data and Results

For the study, the data was collected from 444 distance learners (DL) pursuing Post Graduate courses in the University School of Open Learning (formerly Department of Correspondence Courses in the Panjab University, Chandigarh).

Following table (no.1) gives information on the Number of DL (N), and arithmetic mean (AM), standard deviation (sd) and t-values on 12 variables pertaining to 'Completers' and 'Non-completers' of the courses. The term 'Completers' referred to those DL who were declared pass in the annual examination at the first instance and 'Non-completers' comprised the group who, at the first instance, could not complete the course by virtue of being declared 'fail', 'absent' or 'compartment/reappear case', or the like. Standard statistical testing procedure, by taking Null Hypothesis of 'no-difference on the average score' between 'groups', was used in different cases.

Table No.1

Variables	Non-completers (N=256)		Completers (N=188)		t-value
	AM	sd	AM	sd	
Age	23.2773	4.7093	23.8404	5.1725	-1.19
Social Desirability	11.6719	3.0553	12.1968	3.1570	-1.76***
Extroversion/Introversion	12.7109	2.9081	12.6596	3.2574	0.17
Neuroticism	9.0039	4.2634	8.4309	4.0756	1.43
Psychoticism	3.5078	1.9980	3.3191	2.2972	0.92
Achievement Motivation	5.6289	1.1406	6.0372	1.0046	-3.92*
Home Adjustment	7.6992	4.6811	7.5745	4.6111	0.28
Health Adjustment	6.9531	3.8407	6.8777	3.8266	0.20
Social Adjustment	12.1367	5.0783	11.9894	5.1179	0.30
Emotional Adjustment	10.9102	5.9636	9.9362	5.2617	1.79 ***
Score in 10+2	55.7266	8.3368	56.9415	8.0175	-1.54
Score in Graduation	51.8984	5.4476	54.3085	7.9773	-3.78*

*indicates significant at 5% level of significance

***indicates significant at 10% level of significance

Following table (No.2) gives sex-wise information on the Number of DL (N), and arithmetic mean (AM), standard deviation (sd) and t-values on 12 variables pertaining to 'Completers' and 'Non-completers' of the courses.

Table No.2

Variables	Status	Female			Male		
		Non-completers N= 110 AM (sd)	Completers N= 108 AM (sd)	t-value	Non-completers N=146 AM (sd)	Completers N=80 AM (sd)	t-value
Age		21.7000 (2.3986)	22.3889 (4.2069)	-1.49	24.4658 (5.6007)	25.8000 (5.7090)	-1.70***
Social Desirability		11.4727 (3.3639)	12.0926 (2.4057)	-1.36	11.8219 (2.8032)	12.3375 (2.8012)	-1.32
Extroversion/ Introversion		12.3364 (3.0689)	12.4352 (1601)	-0.23	12.9932 (2.7581)	12.9625 (3.3807)	0.07
Neuroticism		9.3636 (4.5870)	8.7500 (4.3215)	1.02	8.7329 (3.9971)	8.000 (3.7008)	1.35
Psychoticism		3.2273 (1.9614)	2.9907 (2.0393)	0.87	3.7192 (2.0060)	3.7625 (2.5520)	-0.14
Achievement Motivation		5.7727 (1.0976)	6.0463 (0.9311)	-1.98*	5.5209 (1.1639)	6.0250 (1.1021)	-3.17*
Home Adjustment		7.1818 (4.2989)	7.7130 (4.6785)	-0.87	8.0890 (4.9283)	7.3875 (4.5409)	1.05
Health Adjustment		12.1273 (5.4202)	12.1944 (4.9246)	0.41	6.3425 (3.6283)	5.9875 (3.2666)	0.73
Social Adjustment		13.1273 (5.4202)	12.1944 (4.9246)	1.33	11.3904 (4.6866)	11.7125 (5.3868)	-0.47
Emotional Adjustment		11.9818 (6.4324)	11.0741 (5.3820)	1.13	10.1027 (5.4693)	8.4000 (4.7055)	2.35*
Score in 10+2		57.0638 (8.4205)	57.6574 (8.1426)	-0.53	54.7192 (8.1577)	55.9750 (7.7915)	-1.12
Score in Graduation		53.000 (5.7597)	54.8241 (6.4313)	-2.21*	51.0685 (5.0633)	53.6125 (9.6829)	-2.60*

*indicates significant at 5% level of significance

***indicates significant at 10% level of significance

4. Discussion

In the analysis on the total population of DL, 'Social Desirability', 'Achievement Motivation', 'Emotional Adjustment' and 'Score in Graduation' have emerged as the variables which significantly distinguished between 'Completers' and 'Non-completers'.

In the sex-wise comparison, while for the female learners, 'Achievement Motivation' and 'Score in Graduation' have emerged as the key variables distinguishing between 'Non-completers' and 'Completers', for the male learners, 'Age', 'Achievement Motivation', 'Emotional Adjustment' and 'Score in Graduation' emerged as the key distinguishing variables.

Thus a review on the results suggests that the 'Achievement Motivation' and the 'Score in Graduation' could safely be betted as the key variables distinguishing between 'Non-completers' and 'Completers' in distance education system. In other words, the higher 'Achievement Motivation' or the better 'previous academic score' have been quite important inputs in distinguishing between 'Non-completers' and 'Completers' and these can be argued on quite trivial grounds.

Notably, in the context of over all population, mild evidences of variation on 'Social Desirability' and 'Emotional Adjustment' have also been observed between 'Non-completers' and 'Completers'. While the 'Emotional Adjustment' has emerged as another notable variable

distinguishing between 'Non-completers' and 'Completers' in the male population, the impact of 'Social Desirability' might have lost its significance due to the 'aggregation' (wherein two subgroups negate the impact of each other when studied as a group) - a phenomenon not uncommon in the statistical analysis.

The 'age' factor seems to have played an important role amongst distance learners. The 'Completers' have been found to have higher 'age' than the 'Non-completers', be it the case of over all population, or, female or male populations taken separately, though statistically 'age' has been found to be significantly higher for the male 'Completers' in comparison to the male 'Non-completers'. This has not been so for the female segment.

The result on 'age', when viewed in the light of 'number of completers', makes an interesting comparison. Amongst the female learners the pass percentage stood at 47 and the 'age' has not been a significant variable, as against the male learners whose pass percentage was 35 and 'age' has emerged as significant variable in distinguishing between 'Non-completers' and 'Completers'. So the suggestion usually put forth in developing strategies pertaining to andragogy, that 'age', which purports to provide 'maturity', can propel success needs to be emphatically qualified.

However, 'age' when taken together with 'emotional adjustment' may be argued, surely, for the 'male completers'. Female 'completers' have indeed shown higher average score on 'age' and 'mal-emotional adjustment', but these have not been statistically significant, as has been found in the case of 'male learners'. The result, of course, supports the assertion by Mohan (1990, 1992) that 'with age, adjustments improve'.

The variable, 'emotional adjustment', derives still more attention in view of the 'unique characteristic of distance education' (Keegan, 1980), or as Price (1985) puts that studying within the real world is a particular advantage but it can of course be problematic as students at conventional institutes are primarily the students, etc., but their main identity is that of students whereas for a student in distance, he may be mother/father, worker, house keeper, etc., student is only one aspect of their lives. It may not always easy to fit together study and family, work and living in a wider community.

Amidst personality traits, though no variable, except 'Social Desirability', has shown statistical significant variation between 'Non-completers' and 'Completers', but these variables can not be out-rightly overlooked from discussion.

The 'Social Desirability' is also considered as a tendency to respond in a socially desirable way and a high score on Social Desirability shows tendency to protect self-esteem or ego defence mechanism (Malhotra, 1981). In the study, the 'Completers' have been found to have a higher average score on 'Social Desirability' than the 'Non-completers', both for female or male populations taken separately, though not to the extent of statistically significant. However, mild evidence of difference has been found to suggest that 'Completers' have a higher average score on 'Social Desirability' than the 'Non-completers'.

As regards Neuroticism, in the study, be it in the context of over all population, or, female or male populations taken separately, the 'Non-completers' have been found to have higher average score on Neuroticism, in comparison to the 'Completers', though not statistically significant. It may be noted that Neuroticism, by which Eysenck implies drive, complements Extroversion/Introversion in explaining behavioral patterns, a high scoring individual on Neuroticism tend to be emotionally over-responsive and to have difficulties in returning a normal state after emotional experience.

On Psychoticism, Eysenck and Eysenck (1978) have stated that a high scorer on Psychoticism may be described as solitary not caring for the people. While the variable has not been found to be significantly varying between 'Completers' and 'Non-completers', it has been found to have

higher average score amongst 'Non-completers' than the 'Completers' in the over- all population and amongst the female learners.

5. Conclusions

Notwithstanding the limitation of the study on account of its limited scope, it provides some inputs on the impact of some psychological variables, such as 'Social Desirability', 'Achievement Motivation' and 'Emotional Adjustment' in distinguishing between 'Completers' and 'Non-completers' in distance education. While 'age' and 'previous academic score' do make a difference in the success of distance learners, a careful counseling of distance learners on emotional and behavioral aspects is deemed to make some difference in improving their chances of successfully completion of their course. Nonetheless, the study calls for more longitudinal and multivariate studies in this regard for having a better understanding of the mental make-up of distance learners.

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