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Construction and Standardization of Learning Resistance Inventory

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Active engagement in learning experiences provides opportunities for deeper learning. Many times it also creates anxiety and then the logical consequence is student's resistance. Svinicki (2006) called for slow and gradual breaking down of resistance by making the classroom a place to learn and not a place to be judged. The concept of 'learning resistance' was introduced by Illeris (2002). Teachers working at various levels of education need to understand the concept of learning resistance and its influence on psycho-social development of students. It is necessary to identify students who are unwilling to learn in and outside the classroom. The habit of blaming students that they do not study, cannot serve the purpose. Resistant students are to be motivated to learn. At the level of higher education in universities and colleges teachers have to work in an environment characterized by chaotic conditions created by a few students who are not willing to learn. Effective teaching and learning has become a dream. Even the implementation of the Choice Based Credit System with Semester System has been so poor that instead of motivating students to learn more, it developed learning resistance among many students who manage to score better without trying to learn. Teachers seldom try to motivate students for mastery learning, grades are also not deemphasized. Teachers do not try to construct test items that can develop the type of learning competencies they want to develop among students. Academic culture of the institution, parental thrust on aversion for learning resistance is missing, Students and teachers avoid forming learning communities. Cooperation in learning to know and think better and innovate have become rare practies.

Lack of motivation among students, peer group and teachers, lack of ability, lack of aptitude, ineffective teaching, lack of thrust on learning and success of students who do not attend more than 50% classes, opportunities for enjoyment in participating in unruly behaviours of student leaders and their pressure politics, loss of all fears of all kinds for learning engagement may result in growth of learning resistance. Gross(2006) believes that we have 10% of resistant students and 90% of willing to learn students. He articulates that the causes for resistance may range from staggering life-problems such as housing, parenting, or employment, to tragic deficits in basic skills, to psychological impediments such as having 'learned' that if they keep their mouths shut the teacher will 'pass them along' to the next class. Students with these problems need help, but teachers may

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not be able to provide what they need while still fulfilling their responsibility to the rest of the class which is ready to learn. Mbuva has rightly pointed that teachers need subject matter, classroom management and motivation competencies. He opines that resistance to learning affects teaching by undermining the morale of the class, sapping teachers' spirit and finally leading to student failure and discouragement.

Taylor and Lounsbury(2016) constructed the Learning Efficiency Inventory (LEI) to measure learning resistance. An attempt has been made by the researcher to construct a Learning Resistance Inventory for students studying in higher education institutions. The present paper describes the process of construction and standardization of the inventory (LRI).

Preparation of items:

Author discussed the phenomenon of learning resistance with his students of undergraduate, post graduate and pre-doctoral courses several times during last five years. He edited the items thrice this year so as to increase comprehensiveness of the tool and adapt its language to make it more comprehensible to the respondents. Finally a list of 77 items could be prepared. Five responses were given against each item.

Item analysis:

The try-out form of the Learning Resistance Inventory (LRI) was administered on a sample of 232 students selected randomly from students of Undergraduate and post–graduate classes of Arts and Science faculties of University of Allahabad. No time limits were decided. Students were asked to read each item carefully and respond to it by putting a tick mark in the box related tone the five responses, namely- " Strongly agree, agree, undecided, disagree and strongly disagree". A score of 5, 4, 3, 2, and 1 was assigned to these responses respectively. The aggregate of scores on all the total 77 items was considered as the total score. Then SPSS was used to find out item-total correlations for all the 77 items. Their values have been depicted in table 1.

Table1 : Item- total correlation for the try-out form of Learning Resistance Inventory (LRI)

Item no.	r	Item no.	r	Item no.	r	Item no.	r
1	.200**	21	.422**	41	.432**	61	.265**
2	.167*	22	.309**	42	.353**	62	.383**
3	.274**	23	-0.015	43	.398**	63	.308**
4	.253**	24	.307**	44	.389**	64	.398**

5	.404**	25	.343**	45	.340**	65	.495**
6	.410**	26	.490**	46	.374**	66	.466**
7	.420**	27	.490**	47	.404**	67	**-0.013**
8	.333**	28	.494**	48	.447**	68	.486**
9	.424**	29	.344**	49	.385**	69	.285**
10	.226**	30	.437**	50	.345**	70	.385**
11	.455**	31	.422**	51	.502**	71	.471**
12	.224**	32	.396**	52	.493**	72	.338**
13	.185**	33	.418**	53	.564**	73	.413**
14	.472**	34	.437**	54	.532**	74	.493**
15	.348**	35	.475**	55	.437**	75	.412**
16	.180**	36	.365**	56	.388**	76	.425**
17	.337**	37	.469**	57	.451**	77	.356**
18	.369**	38	.347**	58	.410**		
19	.340**	39	**0.09**	59	.463**		
20	.405**	40	.400**	60	.388**		

Perusal of the table shows that only three values are not significant at .05 level. So, they were rejected. Chi-squares were also computed for all the 77 items. They have been shown in table 2. All values of chi-square are significant at .01 level. Efforts were also made to find out items which were slightly overlapping with regard to content. Items with higher correlations were retained. This led to selection of 48 items for inclusion in the final form of the LRI.

Table 2 : Showing Frequencies for various responses and values of chi square for various items of LRI

item no. in try-out form	1	2	3	4	5	Total	Chi-Square	Item no. In final form
1	91	106	8	20	7	232	199.681**	
2	94	95	7	25	11	232	170.069**	
3	66	106	14	36	10	232	138.345**	
4	30	60	43	76	23	232	40.716**	1
5	101	92	10	21	8	232	183.302**	
6	144	69	10	6	3	232	320.629**	
7	96	94	22	13	7	232	172.181**	2
8	46	116	23	40	7	232	150.543**	
9	78	84	23	35	12	232	92.095**	

10	53	113	28	32	6	232	143.474**	3
11	65	110	12	31	14	232	147.871**	4
12	61	103	18	38	12	232	118.043**	
13	22	38	42	93	37	232	63.474**	
14	75	92	16	40	9	232	113.388**	5
15	74	94	36	21	7	232	114.940**	6
16	52	96	20	53	11	232	96.664**	
17	116	86	13	12	5	232	224.681**	7
18	30	82	19	77	24	232	80.284**	8
19	93	94	18	21	6	232	162.095**	9
20	53	83	25	54	17	232	59.552**	10
21	141	57	12	11	11	232	274.810**	11
22	45	86	35	46	20	232	51.664**	12
23	10	12	8	98	104	232	214.724**	
24	36	116	20	53	7	232	156.147**	
25	26	64	18	93	31	232	86.554**	13
26	41	69	22	72	28	232	45.888**	
27	71	124	13	18	6	232	219.422**	14
28	98	91	24	13	6	232	170.284**	15
29	110	82	11	23	6	232	188.474**	16
30	131	81	8	9	3	232	282.569**	17
31	65	97	24	28	18	232	98.129**	18
32	72	117	14	24	5	232	191.922**	19
33	55	105	10	50	12	232	129.940**	20
34	59	105	21	36	11	232	120.672**	21
35	94	113	10	9	6	232	238.302**	22
36	33	94	25	65	15	232	91.276**	23
37	87	107	14	19	5	232	190.414**	
38	21	63	19	99	30	232	101.448**	
39	14	51	37	99	31	232	89.724**	
40	53	122	21	24	12	232	174.336**	
41	92	93	11	30	6	232	159.595**	
42	66	113	24	21	8	232	160.371**	
43	37	70	19	80	26	232	63.388**	

44	72	102	21	28	9	232	132.095**	24
45	111	96	16	4	5	232	238.560**	25
46	70	82	39	27	14	232	71.233**	26
47	86	112	17	11	6	232	207.353**	27
48	89	111	19	9	4	232	214.121**	28
49	105	79	15	28	5	232	162.397**	29
50	47	95	20	51	19	232	82.569**	30
51	101	103	13	10	5	232	222.828**	31
52	69	98	20	34	11	232	113.733**	
53	81	114	16	14	7	232	200.284**	32
54	84	97	14	25	12	232	143.647**	33
55	59	94	28	38	13	232	85.112**	
56	84	94	23	24	7	232	135.371**	34
57	127	81	11	11	2	232	262.310**	35
58	42	71	26	66	27	232	38.819**	
59	53	106	21	44	8	232	123.302**	36
60	34	88	20	80	10	232	108.517**	37
61	66	104	40	18	4	232	136.793**	38
62	45	111	39	25	12	232	126.534**	
63	26	55	19	101	31	232	96.103**	39
64	39	104	19	56	14	232	113.474**	40
65	68	91	25	33	15	232	87.914**	41
66	71	92	21	39	9	232	103.086**	42
67	30	46	35	95	26	232	68.474**	
68	87	106	19	18	2	232	188.129**	43
69	45	89	47	37	14	232	63.690**	
70	42	98	21	55	16	232	93.216**	
71	45	92	41	38	16	232	66.922**	44
72	64	125	27	9	7	232	211.534**	45
73	50	114	16	42	10	232	147.655**	
74	58	93	19	43	19	232	82.310**	46
75	62	108	33	22	7	232	137.181**	47
76	38	80	12	77	25	232	81.405**	
77	42	121	35	25	9	232	163.172**	48

** significant at .01 level

Reliability and Validity:

LRI was administered on a sample of 331 students studying in B.A., B.Sc., M.A. and M.Sc. classes of University of Allahabad. Cronbach's Alpha was found to be .891.

For finding out validity it was hypothesized that Learning Resistance will be positively related to learning stress. For testing this hypothesis LRI and Learning Stress Inventory constructed by the author were administered on a sample of 176 students of Arts faculty and 155 students of Science faculty. The values of correlations for the two samples were .670 and .683. So, it can be inferred that the LRI has criterion related validity. Face validity was ascertained by asking two research scholars working in the area to identify items which do not appear to measure learning resistance. Their satisfactory responses indicated that the LRI has face validity. Item validity was also found by calculating item-total correlations for the final form of LRI. Their values are given in table 3. All correlations are significant at .01 level. This provides an indication of item validity for LRI.

Table 3 : Showing item validity for the final form of LRI

Item no	correlations	Item no	correlations	Item no	correlations	Item no	correlations
1	.331**	13	.394**	25	.382**	37	.220**
2	.222**	14	.414**	26	.438**	38	.373**
3	.348**	15	.492**	27	.451**	39	.287**
4	.439**	16	.281**	28	.405**	40	.380**
5	.393**	17	.438**	29	.442**	41	.472**
6	.272**	18	.442**	30	.409**	42	.410**
7	.274**	19	.430**	31	.507**	43	.510**
8	.425**	20	.390**	32	.482**	44	.394**
9	.290**	21	.478**	33	.510**	45	.504**
10	.471**	22	.553**	34	.446**	46	.480**
11	.422**	23	.434**	35	.452**	47	.438**
12	.341**	24	.494**	36	.461**	48	.363**

Norms:

Z- scores have been shown in table4. Mean and standard deviation for the sample were 107.0604 and 21.66 while values of skewness and kurtosis were.510 and .442. Sample included male as well as female students of B.A., B.Sc., M.A. and M.Sc. classes. For interpretation of individual scores table 4 and 5 may be used.

Table 4 : Showing Norms for interpreting level of learning resistance

Sr. No.	Range of z-scores	Grade	Level of Learning Resistance
1	+ 2.01 and above	A	Extremely high
2	+1.26 to -2.00	B	High
3	+.051 to +1.25	C	Above average
4	-.50 to + .50	D	Average/Moderate
5	-.51 to – 1.25	E	Below average
6	-1.26 to -2.00	F	Low
7	-2.01 and below	G	Extremely Low

Table 5 : Showing Z score norms for Learning Resistance

51	-2.59	76	-1.43	101	-.28	126	0.87	151	2.03	176	3.18
52	-2.54	77	-1.39	102	-0.23	127	0.92	152	2.07	177	3.23
53	-2.5	78	-1.34	103	-0.19	128	0.97	153	2.12	178	3.28
54	-2.45	79	-1.3	104	-0.14	129	1.01	154	2.17	179	3.32
55	-2.4	80	-1.25	105	-0.1	130	1.06	155	2.21	180	3.37
56	-2.36	81	-1.2	106	-0.05	131	1.11	156	2.26	181	3.41
57	-2.31	82	-1.16	107	0	132	1.15	157	2.31	182	3.46
58	-2.27	83	-1.11	108	0.04	133	1.2	158	2.35	183	3.51
59	-2.22	84	-1.06	109	0.09	134	1.24	159	2.4	184	3.55
60	-2.17	85	-1.02	110	0.14	135	1.29	160	2.44	185	3.6
61	-2.13	86	-0.97	111	0.18	136	1.34	161	2.49	186	3.64
62	-2.08	87	-0.93	112	0.23	137	1.38	162	2.54	187	3.69
63	-2.03	88	-0.88	113	0.27	138	1.43	163	2.58	188	3.74
64	-1.99	89	-0.83	114	0.32	139	1.47	164	2.63	189	3.78
65	-1.94	90	-0.79	115	0.37	140	1.52	165	2.67	190	3.83
66	-1.9	91	-0.74	116	0.41	141	1.57	166	2.72		
67	-1.85	92	-0.7	114	0.32	142	1.61	167	2.77		
68	-1.8	93	-0.65	118	0.51	143	1.66	168	2.81		
69	-1.76	94	-0.6	119	0.55	144	1.71	169	2.86		
70	-1.71	95	-0.56	120	0.6	145	1.75	170	2.91		
71	-1.66	96	-0.51	121	0.64	146	1.8	171	2.95		
72	-1.62	97	-0.46	122	0.69	147	1.84	172	3		
73	-1.57	98	-0.42	123	0.74	148	1.89	173	3.04		
74	-1.53	99	-0.37	124	0.78	149	1.94	174	3.09		
75	-1.48	100	-0.33	125	0.83	150	1.98	175	3.14		

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