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Development of work values scale for senior secondary school teachers

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Abstract

The present study was aimed to develop a scale of Work Values for senior secondary school teachers. After consultation with various experts in different fields of Education, the blue print of the scale was developed. At initial level of the construction of the scale the work values tool for senior secondary school teachers consisted of 59 statements on the basis of previous studies related to the concept of work values. The preliminary draft of the tool consisted of 59 statements initially and before item analysis these statements were administered to a sample of 200 senior secondary school teachers for pilot study. After the analysis of the collected data, 28 statements were selected but some items (statements) having same sense were merged in 2 or more factors with the help of SPSS. After data analysis 25 items, were finalised that were broadly categorised into 4 categories. The validity and reliability of the items were also found. The reliability of the test was calculated by using split-half method.

Keywords: Work Values, senior secondary school teachers

Introduction

The development of an individual as well as society depends on Education. It transforms the social, cultural, and political set up into a sound nation. Education enables the learner to solve his problems and manage the quality of life. It has been conceived as a powerful tool to fight against poverty, build democracy and foster peaceful societies. In fact education is a means for development of human resources. It empowers the individuals, gives them a voice, unlocks their potentials, open pathways to self actualization and broadens their perspective to compete in the neck throat competition for survival in this world. As such for development of an individual or any country there is a great need of value education which can be imparted only through an effective teacher. A teacher must be physically, socially, emotionally and mentally healthy as well as having positive values. Values related to the work enables any teacher to complete his work smoothly without any hazards. Work is considered something that is physical in nature and included the kinds of activities which one is obliged 'to do'. Values are capable of being structurally organized within the individual and the society not only in terms of priority, but also in terms of extensiveness of adherence to any particular value and consistency. Regardless of its meaning and nature work cannot be considered separate from individual who performs it.

Work related values include those motivationally relevant factors which energize and sustain human behaviour at work. Work values denote a set of principles which are applicable to a work or professions. It refers to the principles of values, directly or in directly applicable to the work and conduct of individuals working as professionals. Work related values, therefore, cover the broad context of motivation in organization. They motivate, sustain, direct and control human behaviour. Super defined work-values as- "they permeate all aspects of life; they concern life's goals in some cases they seem to be related with needs, drives and attitudes." In this way various work value scales are available which are developed by various experts in India as well as in abroad. The reviews of these scales help in understanding the concept of work values of secondary school teachers. So the investigator took a decision to develop a tool of work values for secondary school teachers with the help of standardization process.

Development of the first draft of the tool

At initial level of tool construction the work values tool consisted 59 statements on the basis of previous studies. Preliminary draft consisted of 59 statements initially and before item

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analysis these statements were administered on a sample of 200 senior secondary school teachers for pilot study. After analysis 28 statements were selected but some items (statements) having same sense were merged in 2 or more factors with the help of SPSS. After this 25 items emerged which were broadly categorised into 4 categories. The category denotes work values of teachers as described below:

Table: Component wise distribution of items of Work Values Scal

Sr.no.	Category	Item wise serial no.	Total
1	Values Related to self	1, 2, 3, 4, 5, 6	06
2	Preparation	7, 8, 9, 10, 11, 12,	06
3	Work environment	13, 14, 15, 16, 17, 18, 19	07
4	Setting of work and activities	20, 21, 22, 23, 24, 25	06

Application of Likert scale:

Various types of methods and approaches were opted to construct the scale. Initially fifty nine statements were put in the form of test booklet. The Likert scale is a five point scale

Scale values

Likert scale is a five point scale in which the individual is used to allow to express his responses as very important, important, moderately important, little important and unimportant. These responses on 5 points were quantified

by giving a score ranging from 5 for very important to 1 for unimportant. The other responses such as important, moderately important little important and unimportant were given 4, 3, 2 and 1 scores.

Categories	Score
Very Important	5
Important	4
Moderately Important	3
Little Important	2
unimportant	1

Results and discussion:

Rotated component Matrix is used to reduce the number of factors on which the variables under investigation have high loadings. Rotated component matrix helps the investigator to know which statements are to be included in which factor. Rotated Component Matrix was applied on 59 items. Table shows the component matrix or factor matrix. It shows the coefficient used to express the standardised variables in the terms of the factors. The correlation between the factor and variables is represented by these coefficients and factor loading. With a large value of coefficient indicates that the factor and the variable are closely related. Out of these 59 items those which were below .5 values were rejected outright (A.P. Field 2005). After this application 26 items were selected out of 59 items which were divided into 4 factors represented in the table as below

Rotated Component Matrix

	Component							
	1	2	3	4	5	6	7	8
ability to influence others	.008	-.245	.319	.407	.035	.152	.268	.106
honesty towards your work	.124	.030	.007	.046	-.069	.202	.103	.040
freedom and control of your work	.360	.236	.286	-.037	.233	-.020	.083	.111
keep count on each other	.077	.116	.779	.136	.206	-.037	-.004	-.018
ability to meet your goals	.129	.070	.225	.008	.145	.061	-.018	-.041
feeling of self reliance	.094	.036	-.134	-.031	.312	.281	.107	.269
scientific attitude towards your work	.125	.235	.137	.050	.327	.148	.217	.233
taking initiatives	.150	-.155	.283	.207	.587	.065	.277	-.078
stand with self-core values	.074	.040	.261	.020	.792	.091	-.040	.086
care and respect for self and others	.009	.013	.452	.205	.305	-.010	.177	.091
humbleness	.231	.276	.204	.084	.003	.014	.085	-.009
dedication towards the work	.175	.246	.458	.161	.073	-.055	.010	.070
have leadership ability	.173	.127	.149	.037	.049	.119	.643	-.146
flexibility in hours to set a specific time schedule	.072	.512	.046	.220	.118	-.032	.112	.239
balancing of things at one time	.493	-.017	.222	.036	.042	.221	.430	.175
opportunities to learn new things	.497	.192	-.003	.077	.135	.200	.135	.217
delimit the things/work	.294	.266	.350	.062	-.053	.583	.158	.086
freedom to set your own schedule	.211	.441	.299	-.029	.279	.326	-.009	-.131
hypothetical ability	.299	.454	-.096	.201	.447	.117	.202	.219
proper arrangement of things and events	.359	.529	.207	.189	.183	.168	.173	.071
make your own decisions yourself	.439	.080	-.029	.281	.344	.252	.052	.109

integrity in your work	.184	.085	.342	.515	.207	.141	.026	.034
motivational domain	.254	.105	.079	.086	.047	-.009	.070	-.019
having peaceful Environment	.271	.580	.280	.033	.004	.078	-.038	.101
healthy attitude to compete	.159	.730	.047	.131	-.108	.102	.185	.084
opportunities to meet people with different ethnic background	.160	.165	.003	.169	.169	.213	.664	.246
availability of friendly/cooperating colleagues	.112	.043	.086	.037	.030	.073	.013	.075
proper management ability	.305	.134	-.033	.395	.373	.489	.227	.098
convenient and safe working environment	.017	-.104	.028	.043	-.096	.024	-.043	.035
effective communication skill	.390	.185	-.049	.620	.006	.191	-.145	.206
team work	.295	.082	.174	.780	.055	-.002	.109	.004
contribution in your work while knowing yourself	.142	.412	.227	.490	.129	-.006	.363	.083

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotated Component Matrix

	9	10	11	Component 12	13	14	15
ability to influence others	-.014	.392	.180	-.210	-.231	.114	-.180
honesty towards your work	.698	.095	.120	-.049	.011	.142	-.064
freedom and control of your work	.565	.184	-.191	.073	.043	-.047	.048
keep count on each other	.082	.099	.027	.002	.042	-.072	.064
ability to meet your goals	.153	.745	.048	.097	.038	-.120	.101
feeling of self reliance	.132	.363	.168	-.062	.568	.036	.050
scientific attitude towards your work	.264	.323	.390	.158	.204	.104	-.183
taking initiatives	.060	.161	.133	.039	-.099	.161	-.132
stand with self-core values	.082	.055	.013	.076	.137	.092	.060
care and respect for self and others	.440	.059	.146	.292	.097	.149	.041
humbleness	.016	-.064	.129	.064	.768	.134	.015
dedication towards the work	.111	.321	.124	.176	.171	.466	-.042
have leadership ability	.269	.276	.155	.247	.061	.070	.077
flexibility in hours to set a specific time schedule	.112	.434	.023	.051	.085	-.039	-.372
balancing of things at one time	.054	.388	.139	.004	-.089	.243	.001
opportunities to learn new Things	.172	.210	.238	.010	.154	.117	.051
delimit the things/work	-.109	.107	.150	.107	.065	.025	.081
freedom to set your own schedule	.025	.020	-.233	.294	.151	.001	-.208
hypothetical ability	-.138	.251	-.054	-.087	-.058	.006	.046
proper arrangement of things and events	.209	-.091	-.054	.207	.157	-.018	.091
make your own decisions yourself	-.014	.094	-.120	.274	.253	.213	-.011
integrity in your work	-.083	-.009	.028	.538	.028	-.028	-.034
motivational domain	.052	.086	.766	.067	.133	.017	-.004
having peaceful environment	.059	-.034	.169	.077	.339	-.006	-.053
healthy attitude to compete	-.013	.078	.092	.039	.107	.071	.049
opportunities to meet people with different	.076	-.154	.051	-.006	.089	.015	-.066

ethnic background							
availability of friendly/cooperating colleagues	-.013	.054	-.003	-.002	.028	.021	.847
proper management ability	.229	.110	.075	.100	-.122	.088	.055
convenient and safe working environment	-.102	.100	.030	-.004	-.069	-.849	-.027
effective communication skill	-.103	.083	.277	.119	-.048	.059	-.063
team work	.084	-.021	-.034	-.033	.065	-.008	.032
contribution in your work while knowing yourself	.092	.058	.007	-.037	.124	-.023	.136

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotated Component Matrix

	Component							
	1	2	3	4	5	6	7	8
readiness for innovative Task	.596	.303	-.042	.226	.311	.104	-.039	-.163

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

	Component							
	9	10	11	12	13	14	15	
readiness for innovative Task	-.081	.087	.029	-.035	.138	.195	.129	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotated Component Matrix

	Component							
	1	2	3	4	5	6	7	8
having technical skill	.310	.420	.133	-.115	.063	.090	.104	.035
stability in your work	.316	.678	.180	.117	-.020	.175	.006	.140
determination of exact standard of your work	.441	.282	.284	.159	.275	.189	.191	.030
innovation at both ideas and suggestions	.257	.281	.034	.163	.452	.091	.106	.036
opportunities to boost economic status	.148	-.048	-.123	.063	.375	.148	.233	.362
passion for hard work	.093	.533	-.046	.146	.143	.175	-.179	.186
to have analytical ability	.237	.301	.263	.473	.175	.022	-.023	.413
positive vision of imagination	.173	.140	.523	.326	-.022	.146	.177	.179
helping others	.394	.068	.520	-.046	.012	.046	.066	.249
active physical participation in your work	.580	.127	.366	.199	.090	.121	-.156	.213
proper interaction with employees	.410	.053	.288	.190	.021	-.089	.255	.176
keep searching for new information and knowledge	.720	.177	.008	.178	.105	.112	.206	.133
multiple levels of creativity	.676	.250	.145	.147	.000	.021	.138	-.015
keep thinking about difficult concepts	.786	.128	.077	.205	.092	.035	.047	.052
have a variety of tasks	.327	.187	.414	.127	.369	.202	.238	.133
ability to supervise	-.005	.396	.538	.342	.171	.168	.086	.221
being vigil	.099	.463	.058	-.137	.235	.433	.011	.068
make great efforts to attain success	.025	.195	-.015	.113	.168	.748	.112	.089
avoiding repetition	.336	.181	.104	.153	.347	-.141	.348	.181
seeking multiple solutions of a problems	.507	.328	.215	.069	.178	-.192	.259	.296
positive reinforcement when you've done a good	.497	.444	.181	.240	.118	.034	.163	.132

job								
having adequate facilities	.154	.331	.326	.483	.135	.067	.243	.036
analysis of your potent in a positive way	.252	.163	.345	.396	.300	.117	.169	.030
short time training to make your work effective	.455	.082	.329	.132	-.098	.329	.103	.349
opportunities to serve society	.250	.350	.119	.025	-.020	.213	.023	.672
ability to oppose	.132	.179	.284	.253	.207	-.008	.164	.625

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

Rotated Component Matrix

	Component						
	9	10	11	12	13	14	15
having technical skill	.132	.200	.146	.591	.114	.144	.011
stability in your work	-.027	-.076	-.012	.166	-.053	.226	.036
determination of exact standard of your work	-.099	.157	.160	.141	.148	.003	.092
innovation at both ideas and suggestions	.106	-.007	.331	.351	.025	-.138	.174
opportunities to boost economic status	-.125	.057	.177	.410	-.160	.016	-.181
passion for hard work	.297	.107	.190	-.045	.257	.152	.077
to have analytical ability	.036	.102	.068	.268	.088	.025	.075
positive vision of imagination	-.041	.249	.115	.236	.131	-.033	.089
helping others	.101	-.015	.076	.028	.032	.271	.065
active physical participation in your work	.180	.097	-.061	.007	-.037	.003	-.047
proper interaction with employees	.241	-.231	.279	-.208	-.321	.016	.047
keep searching for new information and knowledge	.316	-.048	.012	.095	.190	.003	.019
multiple levels of creativity	.180	.068	.195	.142	.158	-.016	.146
keep thinking about difficult concepts	-.042	.150	.184	.174	.064	-.102	.001
have a variety of tasks	-.298	.133	.033	.035	.102	-.137	-.173
ability to supervise	.024	.208	-.039	.024	-.073	-.001	.047
being vigil	.355	.137	.261	-.006	-.036	-.078	.017
make great efforts to attain success	.218	.035	-.076	.063	.103	-.046	.061
avoiding repetition	-.082	.230	-.136	.243	.284	-.221	.099
seeking multiple solutions of a problems	-.042	-.040	.090	-.050	-.076	.013	-.058
positive reinforcement when you've done a good job	.115	-.025	.174	.191	-.135	-.117	-.006
having adequate facilities	.065	.003	.355	-.031	.039	-.133	-.051
analysis of your potent in a positive way	.293	-.077	.365	.135	-.001	-.162	.018
short time training to make your work effective	.113	-.194	.192	.037	.048	-.065	-.010
opportunities to serve society	.146	-.014	.040	-.113	.084	.019	.036
ability to oppose	.040	.106	-.098	.255	.062	-.075	.142

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Factor loading and Cronbach's alpha value

factor	Items	Value	Variables included in the factor	Cronbach's Alpha Value
F1	Values related to self	.596	Readiness for innovative task.	.846
		.580	Active physical participation in your work.	
		.720	Keep searching for new information /knowledge.	
		.676	Multiple levels of creativity	
		.507	Keep thinking about difficult concepts.	
		.507	Seeking multiple solutions of a problem	

F2	Preparation	.515	Integrity in your work.	.770
		.523	Positive vision of imagination.	
		.520	Helping others.	
		.538	Ability to supervise.	
		.780	Team work.	
		.779	Keep count on each other.	
F3	Work environment	.745	Ability to meet your goals.	.820
		.512	Flexibility in hours to set a specific time schedule.	
		.529	Proper arrangement of things and events.	
		.580	Having peaceful environment	
		.730	Healthy attitude to compete.	
		.678	Stability in your.	
F4	Setting of work and activities	.533	Passion for hard work.	.669
		.698	Honesty towards your work.	
		.587	Taking initiatives.	
		.792	Stand with self core values.	
		.847	Availability of friendly/cooperative colleagues.	
		.583	Delimit the things/work	
		.565	Freedom and control of your work.	

By using factor analysis 15 factors were selected but reliable factors having 28 items (statements) which were divided into four factors having reliable Cronbach’s Alpha values as 1: Values Related to self (.846), 2: preparation (.770), 3:

Work environment (.820), 4: Setting of work and activities (.669). Besides 26 items (statements) were selected but out of these, which items (statements) have same sense were merged in 2 or more factors and 25 items finally emerged

Table: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.210	32.559	32.559	19.210	32.559	32.559
2	2.995	5.076	37.635	2.995	5.076	37.635
3	2.622	4.444	42.079	2.622	4.444	42.079
4	2.267	3.843	45.922	2.267	3.843	45.922
5	2.173	3.683	49.605	2.173	3.683	49.605
6	1.863	3.158	52.763	1.863	3.158	52.763
7	1.570	2.661	55.425	1.570	2.661	55.425
8	1.517	2.571	57.996	1.517	2.571	57.996
9	1.458	2.471	60.467	1.458	2.471	60.467
10	1.371	2.324	62.791	1.371	2.324	62.791
11	1.312	2.224	65.015	1.312	2.224	65.015
12	1.244	2.109	67.124	1.244	2.109	67.124
13	1.208	2.047	69.171	1.208	2.047	69.171
14	1.068	1.810	70.981	1.068	1.810	70.981
15	1.030	1.746	72.727	1.030	1.746	72.727
16	.968	1.641	74.368			
17	.947	1.606	75.974			
18	.923	1.565	77.538			
19	.866	1.468	79.006			
20	.799	1.355	80.361			
21	.767	1.300	81.661			
22	.744	1.261	82.922			
23	.692	1.174	84.096			
24	.650	1.101	85.197			
25	.620	1.051	86.248			
26	.568	.962	87.210			
27	.558	.946	88.156			
28	.543	.920	89.076			
29	.499	.845	89.921			
30	.444	.752	90.673			
31	.429	.726	91.400			
32	.393	.665	92.065			
33	.379	.642	92.707			
34	.369	.625	93.332			
35	.350	.594	93.926			
36	.327	.553	94.479			
37	.315	.534	95.013			
38	.282	.477	95.490			
39	.264	.448	95.938			

40	.248	.420	96.358		
41	.239	.405	96.763		
42	.215	.364	97.127		
43	.195	.331	97.458		
44	.162	.275	97.733		
45	.157	.266	97.998		
46	.151	.256	98.254		
47	.141	.238	98.492		
48	.130	.221	98.713		
49	.123	.208	98.921		
50	.114	.194	99.115		
51	.103	.175	99.290		
52	.086	.145	99.435		
53	.079	.134	99.569		
54	.070	.119	99.688		
55	.053	.090	99.778		
56	.048	.082	99.859		
57	.043	.072	99.931		
58	.021	.035	99.967		
59	.020	.033	100.000		
Extraction Method: Principal Component Analysis.					

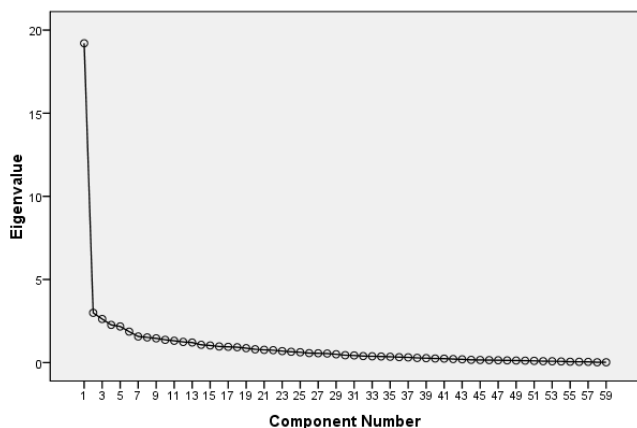
Eigen value is simply sum of squared factor loading for a given factor. Eigen value for each factor described how much variance is observed or being explained by that possible factor. The factor having Eigen value above 1 is selected. Above mentioned total variance table shows only 15 factors having Eigen value above 1 are selected as: cumulative value of factor 1 is (32.559), factor 2 is (37.635), factor 3 is (40.079), factor 4 is (45.922), factor 5 is (49.605), factor 6 is (52.763), factor 7 is (55.425), factor 8 is (57.996), factor 9 is (60.467), factor 10 is (62.791), factor 11 is (65.015), factor 12 is (67.124), factor 13 is (69.171), factor 14 is (70.981), and factor 15 is (72.727).

Scree plot is used to show the Eigen value graphically. It indicates 15 factors have been extracted on the basis of prior knowledge to describe the relationship among variables in a best manner (B, Thompson 2004).

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.735
Bartlett's Test of Sphericity	Approx. Chi-Square	4.116
	df	1711
	Sig.	.000

Scree Plot



KMO & Bartlett's test of sphericity is a measure of sampling adequacy that is recommended to check the items of variable in test. KMO & Bartlett's test plays an important role for accepting the sample adequacy.

Reliability

Reliability is the degree to which an assessment tool produces stable and consistent result. The scale was conducted on a sample of 200 secondary school teachers from various secondary schools. The reliability of the test was calculated by the method of split-half using Guttman and Spearman- and the value was .886

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.831
		N of Items	13 ^a
	Part 2	Value	.884
		N of Items	12 ^b
Total N of Items		25	
Guttman Split-Half Coefficient		.886	

Validity

The scale has content validity at every stage of development. Discussions were held with teachers with regard to different teaching skills among secondary school teachers. To determine content validity, the scale items were given to the panel consisting of five experts. The experts

agreed 92% with the investigator on the assignment of scale items.

Scoring

Award scores as following:

Very important- 5, important- 4, moderately important- 3, little important- 2, unimportant- 1. Total up the scores on 25 statements which form the raw scores for the whole test.

The maximum score could be achieved as 125 and the minimum score would be 25.

Norms:

Level of teacher work values

Raw Scores	Level
100-125	Very High
75-100	High
50-75	Low
25-50	Very Low

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