

FACTOR ANALYSIS OF GENDER CHARACTERISTICS OF STUDENTS' RESPONSIBILITY FOR LEARNING ACTIVITIES

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Abstract

The article deals with the factor's analysis of students' gender peculiarities responsibility in activity of education with the help of experimental methods.

Keywords: psychology of students, responsibility, gender, activity of education, psychological peculiarities, factor's analysis, components.

Introduction

One of the main topics today is youth policy and education. Therefore, as in any field, in the field of psychology, research is being conducted on the problems of society. One of the problems that requires in-depth study in psychology is responsibility. Some parts of this problem have been studied, from which Russian scholars have studied the importance of responsibility in labor activity, and the idea that they should focus on the development of a specific system of studying human responsibility in labor activity.

Also, before studying the problem, the object studying the problem should be studied in detail, and then it is advisable to use problem-solving techniques. To study the importance of responsibility in work, it is necessary to analyze the personal qualities and characteristics of employees, and then the main task in the process of studying personal responsibility is to identify the factors influencing the development of responsibility as a sustainable individual trait.

Our efforts to explore the gender characteristics of student responsibility required a more in-depth analysis of the problem. To do this, we performed a factor analysis of the factors used in the study of student responsibility. Factor analysis is a statistical method used in the processing of large-scale experimental data, whose task is to reduce the amount of values and determine the structure of

the interrelationships between values. Therefore, factor analysis is a method of data reduction or structural classification. In our study, we used 23 indicators (factors) used to assess the characteristics of student responsibility. When we factorically analyzed these indicators, we brought them to 9 factors. The indicators obtained in factor analysis are obtained using correlation analysis, but there are no clear tables representing its indicators.

In most cases, it is noted that the significance level of the correlation coefficients in factor analysis is greater than +0.4 and less than -0.4, and factorial loads of 0.3 are also taken into account.

In the factor analysis, twenty-three features (factors) were used to assess student responsibility:

1. Erglic	13. Principledness
2. Aerglic	14. Expressing oneself
3. Sociocentric	15. Compliance with the norm
4. Egocentric	16. Morality
5. Understanding	17. Self-sacrifice
6. Awareness	18. Reflection on moral situations
7. Subjective effectiveness	19. Intuition in the
8. Subjective	

effectiveness	field of ethics
9. Stenic	20. The existential aspect of responsibility
10. Asthenic	21. Altruistic emotions
11. Internality	22. Values in the field of ethics
12. Externality	23. Sincerity scale

effectiveness" (0.455), "stenicity" (0.455), "reflection on moral situations" (0.389). the drive had high load factor elements. It also had a lower load correlation coefficient on factor G'1: "arglik" (-0.492), "awareness" (-0.654), "asthenic" (-0.533). The characteristic factor of student responsibility can be called "conscious attitude and responsibility".

The following high-load coefficients were observed in factor G2, which reflects the responsibility of students:

- "egocentric" (0.324);
- "subject performance" (0.523);
- "internality" (0.667);
- "principledness" (0.334);
- "compliance" (0.441);
- "morality" (0.479);
- "sincerity" (0.385). In this case, the second group of factors had a lower load factor "altruistic emotions" (-0.436).

As a result of the analysis of the factors, the following factors were obtained, which reflect the general and gender characteristics of student responsibility. Table 1 shows the results of the factor analysis of students' general condition.

The results of the factor analysis were reflected in 9 factors that reflect the characteristics of student responsibility. According to the results of factor analysis, factor G'1 reflects the interdependence of "courage" (0.778), "understanding" (0.597), "subjective

Table 1 *General results of factor analysis of student responsibility*

		Factors								
		F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	F ₈	F ₉
1.	Courage	0,778	-0,251	-0,009	0,261	0,005	0,108	-0,001	-0,005	0,127
2.	Arglic	-0,492	0,113	-0,190	-0,003	0,560	-0,210	0,219	0,226	0,006
3.	Sociocentric	0,174	0,222	0,481	-0,125	-0,515	-0,005	-0,009	-0,001	-0,001
4.	Egocentric	0,268	0,324	-0,143	0,193	-0,244	-0,170	0,298	-0,264	0,002
5.	Understanding	0,597	-0,241	-0,202	-0,208	0,252	0,002	0,008	0,239	-0,176
6.	Awareness	-0,654	-0,148	0,230	0,230	-0,180	0,116	0,002	-0,109	0,280
7.	Objective effectiveness	0,236	0,523	-0,165	-0,004	0,187	-0,378	-0,190	0,008	-0,259
8.	Subjective effectiveness	0,455	0,229	0,003	0,395	0,004	-0,168	0,005	0,242	-0,006
9.	Stenic	0,661	-0,150	-0,105	0,226	0,148	0,167	-0,230	0,201	0,150
10.	Asthenic	-0,533	-0,153	-0,005	0,244	0,003	-0,003	0,244	0,191	0,005
11.	Internality	0,003	0,667	0,130	-0,282	-0,002	-0,008	0,127	-0,192	-0,100
12.	Externality	0,200	0,008	0,110	0,485	-0,441	0,009	-0,134	0,238	-0,160
13.	Principledness	-0,205	0,334	-0,001	0,007	0,232	0,637	-0,193	0,007	-0,234
14.	Expressing one's identity	-0,119	0,105	0,004	-0,260	-0,319	-0,111	0,439	0,489	-0,298

15.	Compliance with the norm	-0,244	0,441	0,007	0,218	0,009	0,412	-0,237	-0,006	-0,155
16.	Morality	0,009	0,479	0,002	-0,350	0,002	0,161	-0,283	0,009	0,197
17.	Self-sacrifice	0,291	0,122	-0,183	-0,525	-0,111	0,002	-0,151	0,005	0,507
18.	Reflection on moral situations	0,389	-0,005	0,634	0,106	0,312	-0,005	0,228	-0,281	-0,003
19.	Morality to the field	0,237	0,114	0,766	0,008	0,365	0,002	0,132	0,007	0,105
20.	The existential aspect of responsibility	0,228	0,161	-0,002	-0,121	0,004	0,532	0,561	0,003	0,008
21.	Altruistic emotions	0,175	-0,436	0,002	-0,410	-0,163	0,363	0,151	-0,009	-0,343
22.	Moral values	-0,214	-0,137	0,425	-0,176	0,001	-0,008	-0,169	0,584	0,206
23.	Sincerity	0,007	0,385	-0,265	0,231	-0,102	0,171	0,411	0,113	0,381

This group factor can be called a “combination of personal and social norms”.

The high load coefficients that characterize student responsibility for factor G'3 include:

- “sociocentric” (0.481);
- “Reflection on moral situations” (0.634);
- “Intuition in the field of morality” (0.766);
- “values within the framework of morality” (0.425). These high load coefficients have led us to call the factor the “impact of ethical principles on accountability”. It is clear that students who fully adhere to the principles of ethics will be able to adequately demonstrate responsibility for their academic activities. Otherwise, failure to fully comply with the rules of ethics will undoubtedly lead to a lack of responsible approach to activities.

The following characteristics were observed for high load coefficients representing factor G'4:

“Subjective effectiveness” in positively reflecting students’ responsibility for learning activities (0.395); When “externality” (0.395) is expressed as high load coefficients; “Morality” (-0.350) and “self-sacrifice” (-0.525) manifested themselves as lower load coefficients. In this factor, the responsibility for the activity becomes “conditional”.

In factor G5, such characteristics as “arglik” (0.560), “reflection on moral situations” (0.312), “intuition in the field of morality” (0.365) were embodied as the leading load coefficient.

This suggests that students are in some cases limited to “reasoning” in demonstrating academic responsibility.

G'6- in the coefficients representing the content of this factor:

- “principledness” (0.637);
- “compliance” (0.412);
- “existential aspect of responsibility” (0.532);
- “Altruistic emotions” (0.363) had a high load.

The leading feature of the factor is that it requires students to have “life principles” that define the place of responsibility in learning activities.

In factor G7, “self-expression” (0.439), “existential aspect of responsibility” (0.561); “Sincerity” (0.411) are high load coefficients. This coefficient leads to the conclusion that in the manifestation of this factor of responsibility, it is important that the person has a “self”.

In factor G8, “self-expression” (0.489) and “moral values” (0.584) were embodied as high load coefficients. They show that it is important for students to form a “unity of

values" in the responsibility of educational activities.

In factor G9, "self-sacrifice" (0.507) was embodied as high load coefficients. This shows that "personal dedication" is important for students to feel responsible in their academic activities.

From the analysis of the above general results, it can be seen that the factors that characterize the manifestation of students' responsibility for academic performance reflect the characteristics of the "responsible student", while the indicators of the low load factor characterize the characteristics of the "irresponsible student".

The next stage of factor analysis focuses on the gender characteristics of the factors that characterize students' responsibility for learning activities (Tables 2 and 3).

In the factorial analysis of the gender characteristics of responsibility for learning activities, we focus on high workload coefficients.

When factor analysis of student girls' results, 7 general factors were identified from the characteristics that characterize the twenty-three responsibilities. It can be said that these factors reflected the characteristics that characterize the responsibility of student girls in the learning process.

The high load factor in factor G'1 reflected the following characteristics:

- "courage" (0.835);
- "understanding" (0.661);
- "stenicity" (0.630);
- "self-sacrifice" (0.315);
- "altruistic emotions" (0.358). High load coefficients emphasize the importance of a combination of "strength, understanding, activism, dedication, humanity" for responsibility;

The high load factor in factor G'2 reflected the following characteristics:

- "subject performance" (0.573);
- "subjective efficiency" (0.473);
- "internality" (0.554);
- "principledness" (0.378);
- "compliance" (0.451);
- "Intuition in the field of morality" (0.333). This factor necessitates a "sense of outcome, control, principle, conformity, morality" for responsibility;

The high load factor in factor G'3 reflected the following characteristics:

- "sociocentric" (0.688)
- "international" (0.355)
- "self-disclosure" (0.594);

Table 2 *The results of the factor analysis, which reflects the responsibility of student girls for learning activities*

		Factors						
		F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇
1.	Courage	0,835	-0,005	-0,190	0,006	-0,002	-0,002	0,142
2.	Aerglik	-0,552	0,110	-0,357	0,110	0,322	0,271	-0,201
3.	Sociocentric	0,0084	0,145	0,688	-0,140	-0,342	0,003	0,002
4.	Egocentric	0,222	0,249	0,004	0,424	-0,250	-0,177	-0,284
5.	Understanding	0,661	-0,004	-0,008	-0,218	0,237	0,234	-0,113
6.	Awareness	-0,648	-0,342	-0,001	0,260	-0,200	-0,001	0,221
7.	Objective effectiveness	0,129	0,573	-0,007	-0,262	-0,116	-0,0008	-0,163

8.	Subjective effectiveness	0,298	0,473	-0,295	0,152	-0,393	0,178	0,121
9.	Stenik	0,630	-0,0041	-0,290	-0,186	0,155	-0,001	0,326
10.	Asthenic	-0,486	-0,254	-0,181	0,187	-0,120	0,138	-0,008
11.	Internality	0,001	0,554	0,355	0,386	-0,008	0,251	0,329
12.	Externality	0,003	0,149	-0,006	-0,367	-0,557	-0,188	-0,008
13.	Principledness	-0,254	0,378	-0,249	0,006	0,210	-0,007	0,561
14.	Expressing one's identity	-0,233	-0,009	0,594	-0,138	-0,239	-0,003	0,008
15.	Compliance with the norm	-0,387	0,451	-0,339	0,102	-0,004	-0,110	0,300
16.	Morality	-0,003	0,403	0,221	0,182	0,295	-0,426	0,108
17.	Self-sacrifice	0,315	0,192	0,292	0,007	0,470	-0,341	-0,205
18.	Reflection on moral situations	0,257	-0,005	0,005	0,507	-0,009	0,530	0,007
19.	Intuition in the field of ethics	-0,205	0,333	0,311	-0,008	-0,337	0,498	0,245
20.	The existential aspect of responsibility	0,169	-0,001	0,403	0,004	0,264	0,147	0,376
21.	Altruistic emotions	0,358	-0,485	0,208	0,228	0,008	-0,003	0,369
22.	Moral values	-0,573	0,006	0,167	-0,385	0,207	-0,002	0,006
23.	Sincerity scale	-0,0017	-0,145	0,003	0,552	0,008	-0,460	0,126

□ “existential aspect of responsibility” (0.403). That this factor was seen as a "tendency to mobilize responsibility for the benefit of others”;

The high load factor in factor G'4 reflected the following characteristics:

- “egocentric” (0.424);
- “international” (0.386)
- “Reflection on moral situations” (0.507);
- “sincerity” (0.552). The need for “reflection in full control of one's own interests” when it comes to the characteristics of the factor;

The high load factor in factor G'5 reflected the following characteristics:

- “aerglik” (0.322);
- “Self-sacrifice” (0.470). "Contradictory features" in cases of responsibility;

The high load factor in factor G6 reflected the following characteristics:

- “Reflection on moral situations” (0.530);
- “Intuition in the field of morality” (0.498);

□ “existential aspect of responsibility”. The high load coefficients in this category emphasize the importance of “ethical standards” for accountability;

The high load factor in factor G'7 reflected the following characteristics:

- “stenic” (0.326);
- “internality” (0.329);
- “principledness” (0.561);
- “compliance” (0.561);
- “existential aspect of responsibility” (0.376);
- “altruistic emotions” (0.369). He stressed the need to adhere to the principles of "activity, control, determination, realism and humanity" in educational activities.

According to the results, which reflect the responsibility of students for educational activities, "strength, understanding, activism, dedication, humanity", "results, control, principle, conformity, sense of morality", "responsibility tends to mobilize itself for the benefit of others", " factors such as “reflection”,

“contradictory features”, “ethical norms” and “activity, control, determination, realism and humanity” led to full control of their interests.

Factor analysis of student outcomes, on the other hand, provided an opportunity to identify factors specific to their responsibilities (Table 3).

It was observed that the content of the identified factors related to their responsibilities also had similarities with the overall results and the performance of female students.

The factors that characterize the responsibility of student youth for academic activities can be expressed through the following factors.

The high load factor in factor G'1 reflected the following characteristics:

- “courage” (0.754);
 - “understanding” (0.512);
 - “subjective efficiency” (0.504);
 - “stenic” (0.668);
 - “Reflection on moral situations” (0.661);
 - “Intuition in the field of morality” (0.711).
- We found it necessary to call this factor "power, understanding, activity, attitude and intuition".

The high load factor in factor G'2 reflected the following characteristics:

- “subject performance” (0.671);
- “internality” (0.620);
- “morality” (0.535);
- “sincerity” (0.548).

The students realized the importance of taking responsibility for the interests of others in the process of education, the formation of subjective control over their behavior, not to deviate from the norms of ethics and an objective approach to the situation. With this in mind, we have called this factor “reliance on objectivity, consideration, kindness”.

The high load factor in factor G'3 reflected the following characteristics:

- “sociocentric” (0.583);
- “internality” (0.308);
- “principledness” (0.309);
- “compliance” (0.507);

Table 3 *The results of the factor analysis, which reflects the responsibility of students for academic activities*

		Factors						
		F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇
1.	Courage	0,754	-0,118	-0,218	-0,006	0,286	-0,159	-0,002
2.	Aerglik	-0,456	0,174	-0,375	-0,265	-0,290	0,372	0,003
3.	Sociocentric	0,212	-0,001	0,583	0,270	-0,182	-0,166	0,266
4.	Egocentric	0,199	0,246	0,002	-0,390	0,255	-0,180	-0,002
5.	Understanding	0,512	0,009	-0,469	0,267	0,005	0,202	-0,007
6.	Awareness	-0,536	-0,443	0,240	-0,006	-0,002	-0,008	0,190
7.	Objective effectiveness	0,167	0,671	-0,002	-0,281	-0,390	-0,006	-0,008
8.	Subjective effectiveness	0,504	-0,311	0,007	-0,268	-0,004	-0,110	0,425
9.	Stenic	0,668	0,006	-0,006	0,004	0,146	-0,229	-0,001
10.	Asthenic	-0,435	-0,334	-0,009	-0,196	0,005	0,100	0,391

11.	Internality	-0,145	0,620	0,308	0,171	0,461	0,006	0,113
12.	Externality	-0,316	-0,002	0,218	-0,171	0,241	-0,304	0,386
13.	Principledness	-0,257	0,180	0,309	0,280	0,399	0,280	-0,001
14.	Expressing one's identity	-0,005	0,265	-0,385	-0,126	-0,006	0,220	0,599
15.	Compliance with the norm	-0,389	0,161	0,507	0,136	0,314	0,110	0,007
16.	Morality	0,006	0,535	0,255	0,330	-0,202	-0,001	0,105
17.	Self-sacrifice	0,153	0,299	-0,127	0,504	-0,204	-0,275	-0,004
18.	Reflection on moral situations	0,661	-0,206	0,395	-0,222	-0,209	0,480	-0,003
19.	Intuition in the field of ethics	0,711	-0,206	0,395	-0,222	-0,209	0,480	-0,003
20.	The existential aspect of responsibility	0,144	0,267	-0,002	0,007	0,516	0,534	-0,007
21.	Altruistic emotions	0,152	-0,113	-0,282	0,631	0,110	0,257	0,165
22.	Moral values	0,282	-0,398	-0,129	0,323	-0,207	0,008	-0,432
23.	Sincerity scale	-0,217	0,548	-0,123	-0,184	0,344	0,106	0,126

"Reflection on moral situations" (0.395).

"Intuition in the field of morality" (0.395). Features that represent a high load factor in the composition of the factor include "benevolence, control, compliance with social and ethical rules."

The high load factor in factor G'4 reflected the following characteristics:

"morality" (0.330);

"self-sacrifice" (0.504);

Alt "altruistic emotions" (0.631);

"values within the framework of morality" (0.323). "Relying on ethical principles" in the performance of their duties reflects the general essence of the fourth factor.

The high load factor in factor G'5 reflected the following characteristics:

"internality" (0.461);

"principledness" (0.399);

"existential aspect of responsibility" (0.561);

"sincerity" (0.344). The student is required to approach the boys in a "realistic, impartial, principled" manner in the performance of responsible tasks in specific situations.

The high load factor in factor G6 reflected the following characteristics:

"Reflection on moral situations" (0.480);

"Intuition in the field of morality" (0.480)

"existential aspect of responsibility" (0.534). The formation of responsibility "in accordance with the principles of life" is the basis of this factor.

The high load factor in factor G'7 reflected the following characteristics:

"subjective efficiency" (0.425);

"asthenic" (0.391);

"externality" (0.386);

"self-expression" (0.599). In some cases, students may be willing to do it for "demonstration" in the performance of responsible tasks.

According to the analysis of the results of the factor analysis, students have the characteristics of self-control, taking into account the interests of humanity, objectivity, change, acting in accordance with social norms, ethical rules and principles of social relations in expressing responsibility for academic activities. They also tend to be inactive, to put

their own interests first in a sense of responsibility, to be superficial, to be impartial, to be careless, to not control their behavior. This, of course, leaves them unable to fully demonstrate responsibility in their learning activities.

Gender features of responsibility in student learning activities have had similarities and differences in student boys and girls. The similarity aspect is the same in terms of the formation of responsibility, but in terms of rank it has slightly higher values in young men.

The results of the analysis of the development of the group show that the presence of the most basic, "we" sense of the group plays a key role. This is a universal principle of the mental formation of the group, which means that for a person belonging to the group should be able to distinguish between a number of "I" structures and another structure - "they". When solving a task or problem, a person must first look at it responsibly and find a solution with a sense of responsibility.

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