The role of students’ personality characteristics in the implementation of scientific research

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Introduction

Many studies defined a substantial contribution of students’ cognitive features and motivation to the success of the students' research.

But equally important are the personal characteristics of students ensuring achievement of the required results at every stage of research. Also students' subjective representations of research activity and students’ attitudes and attractiveness of research stages for them were often remained outside the studies.

We put the following research questions:

Are there distinctions between students' attitudes toward different stages of a research work?

What personality traits and values lead to preference or underestimation of certain stages of a research?
Methodology

• **Sample:**
  – 75 students of 4th year of St. Petersburg State University, Philosophy Faculty (mean age 22.9±1.3, 48 women /27 men).

• **Data collection tools:**
  – questionnaire for students;
  – seven 10-point scales for the assessment of different stages of a research work;
  – The Big Five Personality Test (5PFQ form by Heijiro Tsuji)
  – Rokeach Value Survey (RVS).

• **Data analysis:**
  – content analysis;
  – descriptive analysis, Kendall tau rank correlation coefficient, Mann–Whitney U test (SPSS-20).
### Results

Students’ assessment of the attractiveness of the different stages of a research (on 10-point scales).

<table>
<thead>
<tr>
<th>Stage of research</th>
<th>Mean ± SD</th>
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<tbody>
<tr>
<td>Reflection (awareness and analysis of process)</td>
<td>7.30 ± 1.96</td>
</tr>
<tr>
<td>Data Analysis (description, comparison, etc)</td>
<td>7.12 ± 2.35</td>
</tr>
<tr>
<td>Data Collection (or conducting an experiment)</td>
<td>6.70 ± 2.58</td>
</tr>
<tr>
<td>Orientation (definition of the scientific field)</td>
<td>6.32 ± 2.28</td>
</tr>
<tr>
<td>Problem statement (identifying research problem)</td>
<td>6.03 ± 2.41</td>
</tr>
<tr>
<td>Planning (determining the sequence of tasks)</td>
<td>5.52 ± 2.09</td>
</tr>
<tr>
<td>Determination of methods (justification of methods and sampling)</td>
<td>4.85 ± 2.01</td>
</tr>
</tbody>
</table>
Results

Fig.1. The correlations between personality traits of students and their assessment of different stages of a research

Fig.2. The correlations between the students' values and attractiveness of the research stages

- **Persistence**
- **Curiosity**
- **Enervation**
- **Emotional stability**
- **Sensitivity**

- **Problem Statement**
- **Methods & tools**
- **Planning**
- **Reflection**
- **Data Collection**

- **“Knowledge” value**
- **“Creativity” value**
- **“Aesthetics” value**
- **“Materialistic” value**
- **“Productive life” value**
- **“Tolerance” value**

- Positive correlation
- Negative correlation

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Implications for policy/Practice

The study revealed the ambivalent attitude of students to the stages of planning scientific tasks, problem statement and selection of methods and techniques. It focuses our attention on the necessity to take them into account in an individual interaction of scientific advisors with students, on assisting students who experience difficulties in scientific work.
Implications for policy/Practice

The results provide new data that are useful for the development of recommendations and programs of psycho-pedagogical support of high school students in their scientific and research work, and for individual counseling of students by their scientific advisers. We see a continuation of our study in the confirmation of received data on samples of students of other specialties.
The attitudes of the humanities students toward different stages of a research are not homogeneous: some of these stages students prefer more than others stages.

The most attractive stages for them are “Reflection”, “Data collection” and “Data analysis”; the least attractive ones are “Planning” and “Methodical stage”. It can be assumed that students estimated lower those stages of the research work which caused difficulties.

Personality characteristics and prevailing values in students can enhance the attractiveness of a particular stage of research.

So, curious and persistent students prefer research stages related to “Statement of a scientific problem”; emotionally stable students prefer “Planning” and “Reflection”; sensitive students prefer stage of “Collection and primary processing of data”.

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Conclusion

• Values as a special level of behavior regulation are also correlated with students' attitudes toward the conducting of different research stages.

• Values of Knowledge, Creativity and Aesthetic are typical for students who prefer the stage of “Orientation in the problem area”, the value of Productive life is related to the attractiveness of the stage “Analysis and description of the results”; the instrumental value of Tolerance is important for those who prefer “Planning” stage.
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