Measurement of the tolerance general level in the higher education students

Aleksander Sztejnberg¹, Tadeusz Leszek Jasiński²

¹Opole University in Opole, Poland
²Gdańsk Academy of Physical Education and Sport, Poland

Abstract: In this paper, the results of the study, which examined the general tolerance level in the students of the first and second year of the physical education (bachelor degree) and the first year of the pedagogy (master degree), are discussed. Tolerance level was measured with the Polish version of the Tolerance Index (TI), containing 22 statements assigned to three subscales: (1) ethnic tolerance (ET), (2) social tolerance (ST), and (3) tolerance as personality trait (PT). It was found that 86% of the examined students were characterized by the mean general tolerance level. It is interesting that the general tolerance level in the female students was higher than that characteristic for the male students. Differences in the mean scores given by the examined students (both female and male) proved to be statistically significant for subscales ET and ST.

Keywords: tolerance, measurement, Tolerance Index Questionnaire, students’ opinion, physical education and pedagogy students

Introduction

An analysis of the available literature shows that the problem of a tolerance is a subject of interest of various scientific disciplines, e.g. psychology, sociology, philosophy, and pedagogy. The word tolerance (Latin tolerantia) according to Okoń – prominent Polish educator – means “acquiesce to other people the right to have some ideas and defined conduct divergent in own ideas and conduct” (Okoń, 1992, pp. 213-214). In other words, tolerance should be interpreted as “readiness to accept the right of the human being different (…). It is connected with attitudes, feelings and behavior. Being tolerant means no pressure on anybody to change his beliefs, respect of the different or even controversial opinions and customs, and freedom form bias” (Ambrosewicz-Jacobs, 2004, pp. 21-22). According to Winiarska and Klaus, “tolerance is a respect for dissimilar opinions, behavior, life styles, assuming that we do not share them, and sometimes do not agree with them and judge negative but treat the person who propagates them as equal to us. Therefore, tolerance understood this way assumes both the respect of freedom and human being dignity, i.e. refers to the duty of respecting humanity in ourselves and in others” (Winiarska, Klaus, 2011, p. 15). Similar in an essence but referring to the multicultural sphere is the tolerance definition in the Article 1 – Meaning of tolerance of the UNESCO General Conference in 1995. “Tolerance is respect, acceptance and appreciation of the rich diversity of our world’s cultures, our forms of expression and ways of being human. It is fostered by acknowledge, openness, communication, and freedom of thought, conscience and belief. Tolerance is harmony in difference. It is not only a moral duty; it is also a political and legal requirement. Tolerance, the virtue that makes peace possible, contributes to the replacement of the culture of war by the culture of peace” (OIO, 2004, p.1).

Several authors of publications in English language present the results of studies concerning tolerance in schools. Diagnosis of the tolerant behavior in the pupils of the primary schools in Turkey (Çalişkan, Salam, 2012), programs of education for tolerance in Indonesia (Raiani, 2011), directive for the effective pathways to tolerance students diversity in the American schools (Stanhope, 1998), education of a tolerant personality of the future specialists in the Kazakhstan vocational schools (Turebayeva et al.) are only a few examples of such publications. Assuming that the university environment is one of the main creators of an attitude to a tolerance, American authors assessed college students’ views on gay and lesbian issues (Lambert et al., 2006), interrelation between years of study in the university and tolerance toward women, emigrants, Muslims, and homosexuality (Bobo, Licari, 1989; Webb-Halpern, 2003), personality tolerance predicates characteristic for human diversity such as openness and empathy (Butrus, Wittenberg, 2013).

Polish authors are interested in problems of tolerance in the public and private schools, especially interrelations teachers-students concerning students’ rights observation and the scope of the trust to them (Urbańska, Wagner, 2000), distinguishing the student with the aid of teachers style of verbal communication as one of an intolerance style (Wieczorek, 2000), tolerance toward disabled (Krasiejko, 2000; Rudek, 2010), examples of an unequal treatment of students in colleges and universities (Sztejnberg, Jasiński, 2014), discrimination on religion in schools as intolerance example (Balsamska et al., 2012), diagnosis of the foreign children situation in schools such as their social acceptance by the school mates (Konieczna, Świadrowska,
functioning of the foreign pupils in the multicultural school (Jędrzejczak, 2010), process of a tolerance forming in children during early education (Bazaniak, 2009), diagnosis of the school children attitudes toward cultural distinctness (Kasprzak, Walczak, 2009), identification of the students’ attitudes and opinions on various form of a tolerance and intolerance (Borkowski, 2003), an analysis of the tolerance and intolerance problems in schools made to isolate main factors of the tolerance attitudes, an effect of the teacher on students personality, presentation of the selected violent behavior toward the students, teachers and peers, illustration of the teachers’ negative tolerance and their intolerant attitudes (Kwapiszewski, 2007, pp. 67-96). There are also textbooks specifically designed for the teachers working with foreign students in the Polish schools (Bernacka-Langier et al., 2010b). Taking into consideration the fact that various groups of the foreigners and national minority, special educational kit was elaborated with a program of the Polish language teaching as the second language at I, II, III stage of education (Bernacka-Langier et al., 2010a). Dąbrowska in one of the latest publication presented two models of tolerance understanding in the contemporary Polish society. “Tolerance” may be understood as a manifestation of a specific attitude of the defined group of people targeted its protection against those who have negative attitude toward this value (…). Therefore, tolerance is a value existing in the social environment as an active attitude and disposed toward conflict. Such understood tolerance is the value by which you have to fight and is a synonym and important element of so-called “normal Polish society” (Dąbrowska, 2012, p. 177). On the other side, “understanding tolerance assume (…) a form of seemingly neutral monitoring. Individuals may declare tolerant attitude toward national minorities or different religions but it does not manifest as emotional engagement (Dąbrowska, 2012, pp. 179-180).

Analysis of the available literature provides information that the majority of the research is carried out in schools on the lower education levels. Not many authors publish the results of research in the higher schools. Therefore, it was interesting to find what is general tolerance level in the students of the first and second year of studies’.

Research objectives

This study aimed at determining a tolerance general level in students. Therefore, answers to the following questions were sought out:

1. What is mean tolerance general level in the students and those differentiated by gender?
2. Is a difference in the general level of a tolerance statistically significant in the examined students differentiated by their gender?
3. How many students are characterized by low, medium, and high level of a tolerance?
4. What behavior and declared opinions may be regarded as typical for the examined students differentiated by their gender?
5. Are differences in the number of the examined students differentiated by their gender, characterized by their behavior and attitude to the certain statements related to the ethnic and social tolerance, and tolerance as a personality trait is significant?
6. Are differences in mean scores given to the IT subscales by the student differentiated by their gender statistically significant?

Methodology

The samples for this research were chosen from the Paweł Włodkowic College in Płock. It included 150 students, 67 (44.67%) male students aged between 19 years to 50 years (M=24.21; SD=6.62), and 83 (55.33%) female students, aged between 19 years to 50 years (M=21.00; SD=7.12). 64 persons studied at the Physical Education Faculty I and II year of the bachelor degree, and 86 female and male students studied at the Pedagogy Faculty I year of the master’s degree.

Tolerance Index Questionnaire (TI) was used in the version elaborated by Soldatova et al. in the Lomonosov University in Moscow, whereas its Polish version was elaborated by the first author of this paper. Questionnaire contains 22 statements used for determination of the tolerance general level in the examined person. These statements are assigning to three subscales: 1) ethnic tolerance ET), (2) social tolerance (ST), (3) tolerance as a personality trait (PT). Subscale ET contains 7 statements (2,4,7,11,14,18,21) enabling to determine respondent’s attitude toward representatives of the different race and ethnic group, attitude toward an own nation, other nations and assessment of respondents’ distance to the others. Statements in the ST subscale (1,6,8,10,12,15,16,20) enable to determine tolerance/intolerance toward various social groups (refugees, immigrants, the poor, tramps, mentally ill, and religions) as well as to find responders’ attitude to some social processes. Subscale PT contains seven statements (3,5,9,13,17,19,22) which serve to diagnose personality traits of the examined individuals and their attitudes and beliefs illustrating their attitude to the environmental reality (Soldatova et al., 2008, p. 50). Inverted scale was used to calculate the general tolerance level for each examined
student. Number 6 meant strongly disagree and number 1 strongly agree in relation to 14 statements (2-4; 10; 12-13; 15; 17-19).

Each examined student answering to TI statements indicated one number in a 6-number Likert Scale determining a degree of the agreement/disagreement with each statement.

**Instruction**

Grade a degree of your agreement/disagreement with each statement. Use a scale in which numbers mean: 1 – strongly disagree; 2 – disagree; 3 – rather disagree; 4 – rather agree; 5 – agree; 6 – strongly agree.

Select one out of six above listed answers. If you strongly disagree with the statement mark number 1. If you strongly agree with the statement, mark number 6. If your feelings are no so strong mark (X) one of the remaining answers numbered 2, 3, 4 or 5. In this questionnaire, there are no good or wrong answers. We are interested in the number of the answer which most correctly describes your feelings.

**Findings**

The obtained results were analyzed with various statistical methods. Basic statistical measures of the central tendency and diversity of the measured values such as mean and standard deviation were calculated. Mean tolerance level for all examined students and those differentiated by gender was calculated. Student-t test was used to assess statistical significance of several mean values (Nowaczyk, 1985, p. 168; Freed, Ryan, Hess, 1991, pp. 369-370). Significance of the differences of mean tolerance levels in the examined male and female students. Numbers and percentage of students characterized by low, medium, and high tolerance level were also calculated. Test $\chi^2$ (Nowaczyk, 1985, pp. 179-89) was used to evaluate statistical significance of differences in the number of students differentiated by their gender and declaring an attitude to the diverse types of the tolerance. Mean scores given to the TI subscales by the students differentiated by their gender were calculated and SD values. Statistical significance of differences between means scores values was determined.

Quantitative analysis of the collected data enabled to calculate the general tolerance level (GTL), i.e. mean scores given by both female and male students to TI subscales. It was find that its mean value was $M=87.75$ (SD=10.44) whereas GTL for the examined female students was $M=89.86$ (SD=10.21) and $M=85.15$ (SD=10.20) for male students. Difference of the medium tolerance level proved to be statistically significant as calculated value $t=2.8697$ was higher than critical value $t_{0.05,df=\infty}=1.96$ (Freed, Ryan, Hess, 1991, p.370; Nowaczyk, 1985, p.265). General tolerance level in the female students proved to be higher than that in male student.

Sum of the scores for each examined student was analyzed qualitatively in three score intervals corresponding to the low, medium, and high tolerance level. Numbers (n) and percentage (%) of the examined students for whom total score was in one of the above interval are shown in Table 1.

<table>
<thead>
<tr>
<th>Tolerance level</th>
<th>Scores</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>22-60</td>
<td>1</td>
<td>0.67</td>
</tr>
<tr>
<td>Medium</td>
<td>61-99</td>
<td>129</td>
<td>86.00</td>
</tr>
<tr>
<td>High</td>
<td>100-132</td>
<td>20</td>
<td>13.33</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>150</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Analysis of the scores given in Table 1 shows that only one student (0.67%) had low tolerance level. Its score was 22 – 60. Such a result indicates that this student is the intolerant person. He displays several properties indicating his intolerance toward other people and surrounding reality. Mean tolerance level was characteristic for 86.00% of the examined students. They manifest both tolerance and intolerance, being tolerant in some social situations and intolerant in other. Results of about 13% of the examined students are between 100 to 132 scores, indicating high tolerance level. Students of this group manifest high tolerance level. It is worth emphasizing that no student gained more than 115 scores. The result over 115 could indicate “blurring tolerance bounds in humans, for instance related to psychological infantilis, lack of desire to counter activity, indifference, tendency to tolerate wrong behavior in other persons, among others.” (Soldatova et al., 2008, p. 49).

As typical behavior of the examined students and declared attitude to the statements concerning ethical, social, and tolerance being a personality trait, recognized were the answers of the highest score, expressed in TI questionnaire “strongly agree” and “agree”. Such answers were given by over 50% of the examined students (see Woynarowska-Sołdan, Tabak, 2013, p. 661). In Table 2, number and percentage of all examined students who gave such answers, are shown. In round brackets a subscale was indicated.
Table 2: Number and percentage of students, who gave the highest scores to the statement equal to “agree” and “strongly agree”

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Male students (n=67)</th>
<th>Female students (n=83)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>An opinion may be expressed in the media (ST)</td>
<td>27 40.3</td>
<td>38 45.8</td>
</tr>
<tr>
<td>2.</td>
<td>Mixed matrimony has more problems than that of the same nationality (ET)</td>
<td>8   11.9</td>
<td>16 19.3</td>
</tr>
<tr>
<td>3.</td>
<td>If a friend betrayed, one should revenge on him/her (PT)</td>
<td>4   6.0</td>
<td>6  7.2</td>
</tr>
<tr>
<td>4.</td>
<td>Gypsies will be better treated, when they change their behavior (ET)</td>
<td>26  38.8</td>
<td>24 28.9</td>
</tr>
<tr>
<td>5.</td>
<td>In a dispute, only one point of view may be correct (PT)</td>
<td>11  16.4</td>
<td>11 13.3</td>
</tr>
<tr>
<td>6.</td>
<td>Poor and tramps are guilty their problems (ST)</td>
<td>8   11.9</td>
<td>12 14.5</td>
</tr>
<tr>
<td>7.</td>
<td>It is normal to think that your Nation is better than all remaining nations (ET)</td>
<td>10  14.9</td>
<td>11 13.3</td>
</tr>
<tr>
<td>8.</td>
<td>Relations with sloppy people is unpleasant (ST)</td>
<td>30  44.8</td>
<td>29 34.9</td>
</tr>
<tr>
<td>9.</td>
<td>Even I have my own opinion on the defined topic, I am ready to listen what other people have to say (PO)</td>
<td>53 79.1</td>
<td>69 83.1</td>
</tr>
<tr>
<td>10.</td>
<td>All mentally ill should be isolated from the society (ST)</td>
<td>12  17.9</td>
<td>10 12.0</td>
</tr>
<tr>
<td>11.</td>
<td>I am ready to take a person of any other nationality to my family (ET)</td>
<td>34  50.7</td>
<td>53 63.9</td>
</tr>
<tr>
<td>12.</td>
<td>Refugees should be helped no more than all other people as the locals have their own serious problems (ST)</td>
<td>15  22.4</td>
<td>32 38.6</td>
</tr>
<tr>
<td>13.</td>
<td>If somebody is rude to me, I respond the same (PT)</td>
<td>15  22.4</td>
<td>20 24.1</td>
</tr>
<tr>
<td>14.</td>
<td>I want to have friends of various nationality (ET)</td>
<td>24  35.8</td>
<td>40 48.2</td>
</tr>
<tr>
<td>15.</td>
<td>A “strong arm” is needed to introduce order in the country (ST)</td>
<td>30  44.8</td>
<td>34 41.0</td>
</tr>
<tr>
<td>16.</td>
<td>Newcomers from other countries should have the same rights as the locals (ST)</td>
<td>20  29.9</td>
<td>31 37.3</td>
</tr>
<tr>
<td>17.</td>
<td>A man who does not think like me causes my irritation (PT)</td>
<td>6   9.0</td>
<td>9 10.8</td>
</tr>
<tr>
<td>18.</td>
<td>It is difficult to treat well some nations (ET)</td>
<td>23  34.3</td>
<td>19 22.9</td>
</tr>
<tr>
<td>19.</td>
<td>Disarray (mess) irritates me very much (PT)</td>
<td>39  58.2</td>
<td>48 57.8</td>
</tr>
<tr>
<td>20.</td>
<td>Any religious beliefs have the right to exist (ST)</td>
<td>37  55.2</td>
<td>56 67.5</td>
</tr>
<tr>
<td>21.</td>
<td>I may introduce black man to my close friends (ET)</td>
<td>35  52.2</td>
<td>58 69.9</td>
</tr>
<tr>
<td>22.</td>
<td>I would like to be more bearable for other men (PT)</td>
<td>29  43.3</td>
<td>46 55.4</td>
</tr>
</tbody>
</table>

An analysis of the obtained percent data in Table 2 indicates 5 of 22 statements proved to be typical behavior and opinion declared by the examined students. It was found that 79% of responders is ready to listen what other people have to say despite their controversial opinion, whereas about 58% of the examined students are strongly irritated by disorder (mess) (PT subscale, statements 9 and 19). Every second student is ready to take a person of any other nationality to his family and introduce black man to his close friends (ET subscale, statements 11 and 21). About 55% of the students think that any religious beliefs have a right to exist (ST subscale, statement 20).

Data shown in Table 2 indicate also that over 50% of the examined female students show behavior and express opinions represented by 6 out of 22 statements, including 3 from the subscale “tolerance as a personality trait” (statements 9, 19, 22), 2 from subscale “ethnic tolerance, i.e. readiness to take person of any other nationality to her family or introduce black man to her close friends (statements 11 and 21), and 1 from subscale “social tolerance”, i.e. right to exist for any religious beliefs (statement 20).

Comparison the numbers of the examined students differentiated by their gender of the typical behavior and expressed opinions in various tolerance types discriminates male responders.
Test chi-square ($\chi^2$) was used to assess significance of the differences in behavior and opinions referred to various tolerance types (Nowaczyk, 1985, pp. 179-189). An only significant difference was found for two statements of TI questionnaire: one in ST subscale (statement 12) and one in ET subscale (statement 21). It was found that more female students think that the refugees should be helped no more than all other people as the locals have also a lot of problems. Difference was significant at $\alpha = 0.05$ ($\chi^2 = 4.503; \chi^2_{0.05df=1} = 3.841; \chi^2 > \chi^2_{0.05df=1}$). More female students might introduce black man to their close friends than male students. Difference is statistically significant also at $\alpha = 0.05$ ($\chi^2 = 4.897; \chi^2_{0.05df=1} = 3.841; \chi^2 > \chi^2_{0.05df=1}$). A more female students expressed their attitude toward refugees (ST statement 21).

To get information on the tolerance type characteristic for the examined students differentiated by their gender, more detailed analyses were made. Mean values of the scores given by female and male students to the statements in ET, ST, and PT subscales of TIQ were calculated and their statistical significance was evaluated. The obtained results are shown in Table 3.

**Table 3: Comparison of the statistical significance of mean score values difference given to ET, ST, and PT subscales**

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Male students (n=67)</th>
<th>Female students (n=83)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>ET</td>
<td>3.89</td>
<td>0.51</td>
</tr>
<tr>
<td>ST</td>
<td>3.63</td>
<td>0.49</td>
</tr>
<tr>
<td>PT</td>
<td>4.13</td>
<td>0.85</td>
</tr>
</tbody>
</table>

An analysis of the data shown in Tab. 3 revealed statistically significant difference at $\alpha = 0.05$ for two subscales, i.e. ET and ST; $t$ value = 2.9847 for ET subscale was higher than critical value $t_{0.05df=66} = 1.96$, white for ST subscale $t$ value was 2.4499 ($t > t_{0.05df=66} = 1.96$) (Freed, Ryan, Hess, 1991, p. 370; Nowaczyk, 1985, p. 265).

One may say that mean scores value given by the female students were higher than that given by male students, whereas the difference of the mean values of the scores given by the examined students proved to be insignificant for PT subscale.

**Discussion**

Despite the fact that tolerance in the educational circle is a subject of research since several years, the authors of this paper did not find publications concerning the measure of the Polish students’ general tolerance level. Bazaniak indicates need of such measures in the lower grades of education, emphasizing that “the first aim of an educator is acquaintance of the tolerance level and behaviors being its indices in the educated children. It will help to choose appropriate content and methods of the teaching. (…) Important is an aid in tolerance acceptance as a value and understanding the need of being tolerant” (Bazaniak, 2009, p.340).

This study aimed at measuring general tolerance level characteristic for all examined students and for male and female students of the Physical Education and Pedagogy Faculties at the Pawel Wołodkowic College in Plock. The obtained results showed that TIQ proved to be very useful tool in measuring general tolerance level. It numerical value for all examined students (N=150) was M=87.75 (SD=10.44). It was similar to the results obtained by Soldatova in the study carried in the Psychology Faculty at the Lomonosov University in Moscow (N=44; M=88.8) and students of the National University in the Dagestan Republic (N=123; M=80.2) (Soldatova et al., 2008, pp. 50-51). Statistically significant difference in the tolerance level was found for female and male students. PT level characteristic for female students was higher than that for male students.

Detailed analysis of the data revealed that the medium tolerance level was characteristic for 86% of the examined students, indicating tolerant behavior in some social situations and intolerant in other. High tolerance level was characteristic for about 13% and low for only 0.67% of the examined students. An analysis of answers given to the TI statements enabled to distinguish typical behavior and declared opinions concerning ethnic and social tolerance and tolerance as personality trait. Chi-square test revealed significance differences for two statements in TIQ. More female students expressed their attitude toward refugees (ST subscale, statement 12) and black men (ET subscale, statement 21) than male students. Student t test used for calculation of the mean score values given by female and male students revealed statistical significance for two subscales (ethnic and social tolerance).
Conclusions

Analysis of the obtained data enabled to draw the following conclusions:

1. Tolerance Index Questionnaire proved to be a useful tool in measuring general tolerance level in the examined students.
2. 86% of the examined students represented medium tolerance level, indicated tolerant behavior of both female and male students in some social situations and intolerance in other situations.
3. Difference in the medium tolerance level characteristic for the students differentiated by their gender proved to be significant at $\alpha = 0.05$. General tolerance level in the examined female students was higher than that characteristic for male students.
4. In the group of male students five, and in female students six typical behaviors and declared attitude to the said statements concerning ethnic, social and personality trait tolerance were revealed.
5. Higher number of female students showed their attitude toward refugees and black men in comparison with male students.
6. Difference of the mean values of the scores given by the students differentiated by their gender was statistically significant for two out of three subscales of TIQ.

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