Examining the Epistemological Beliefs of Students of Sports Sciences

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ABSTRACT
This study was conducted to examine the epistemological beliefs of the individuals studying at university level at sports sciences field. Not only the epistemological belief levels of the students but also the differences of these beliefs were examined concerning the age, gender, grade, and department variables. The research group was comprised of 173 sports sciences students, who were studying at Selçuk University as of 2018, selected through random selection method. As the data collection tool, the "Scientific Epistemological Beliefs Scale" was used, which was developed by Pomeroy (34) and adapted to Turkish by Deryakulu and Bıkmaz (16). In the analysis of the data, SPSS 22.00 program was used for the statistical analyses. As the conclusion of the study, it was determined that the epistemological belief levels of the sports sciences students were generally over the average, that the epistemological belief levels of the females were statistically significantly higher compared to the males. It was also determined that there was statistically no significant difference concerning the age and grade variables, while there was statistically significant difference at the epistemological belief levels concerning the department variable in favor of students studying at the department of physical education and sports teaching.

1. Introduction
Epistemological beliefs are generally the subjective beliefs of the individuals concerning their views about what the knowledge is, and how knowing and learning happen (14, 39). Similarly, Perry (33) defined epistemological beliefs as the individual views of persons concerning what the knowledge is, how it is collected, what the limits and criteria determined for the knowledge are. Accepted as one of the individual characteristics, the epistemological beliefs are proved to have quite important impacts on learning based on the results of previous studies (30, 14,18, 17,15,21, 38, 27).

What the knowledge is’, as a subject, has been arousing attention of the philosophers, academicians, and scientists since the early ages. In fact, our age was called as the information age since access to information is fast and the societies living at this age are called as information societies (19).

It can be mentioned that the causes of all the decisions and the behaviors of individuals throughout their lives are their beliefs (23, 31). Beliefs are perceived as the undoubtedly-believed internal assumptions or suggestions that determine how the individual perceives an event, person, or object of any nature and how he/she reacts against them. There is not a certain and constant definition of the belief concept, which is accepted as a product of internal processes and own perception of an individual. Therefore, belief is correlated with knowledge, which is a product of internal processes, and an effort in this way eventually will have to base on the difference between belief and knowledge (15). It is because these two concepts are used interchangeably (26),
since people expect to use the knowledge and belief in solving their daily life problems (20, 13). This link between knowledge and belief leads us to the epistemological belief concept, which is a result of an individual process (35, 30, 23).

In previous studies, it was reported that epistemological beliefs have determinative impacts on variables such as processing and interpretation of knowledge, perception levels, auditing criteria of the perception levels, lesson studying strategies selected and used, and the effort and time spent for learning high level thinking and problem solving approaches (2, 44).

According to Hofer (22), epistemology, on philosophical bases, is the method used in acquiring the knowledge, the nature, accessibility, and accuracy of knowledge, while on the educational bases, it is related with how the knowledge is shaped and developed. In the process of knowledge production, Schommer (38) suggested that the individuals accept and believe in the knowledge either in an absolute or in a relative manner. Since it is considered that epistemological beliefs are effective on the interclass and in-service practices of the teacher candidates (46, 37, 25, 31, 36, 4), there are studies, which suggest that epistemological beliefs should be taken into consideration in educating future teachers (24).

The motive behind the increasing number of studies on this issue can be explained by the facts that epistemological beliefs have a critical importance in educating teachers, they have significant impact on behaviors and judgments of teacher candidates, and results of this impact is an issue of concern worth studying. However, it is observed that the epistemological beliefs of teacher candidates are not sufficiently considered in the teacher education programs (28). Brownlee, (4), mentioned that the higher education should have an impact on developing the epistemological beliefs of the students. When the experiences of the students combine with the education, they will use their own experiences and the statements of the experts as the ways of knowing. This (interrelation between the core and the theory) gives a more sophisticated meaning to the ways of knowing (5).

The realization of the importance of the epistemological beliefs in education is related with the qualitative and quantitative studies in this field. In this context, it is expected that researchers of this field, as the academicians, should investigate this philosophical field in more detail, examine the previous studies, implement the studies they improved, and develop new ideas important for the education world (12).

In order to ensure a desired change in the individuals studying at higher education, the relation should not be overlooked between the epistemological beliefs of the students and their perceptions towards learning and teaching. Previous studies show that the importance of the studies conducted on the epistemological beliefs of the higher education students grows in each passing day. This situation has become the source of inspiration for this study, and answers are sought for the following questions for determining the levels of the epistemological beliefs of the sports science students.

Of the sports sciences students:
1. What are the levels of their epistemological beliefs?
2. Do their levels differ according to gender?
3. Do their levels differ according to age?
4. Do their levels differ according to grade level?
5. Do their levels differ according to the department they study?

2. Method
a. The Design of the Research
The descriptive method was used in this research study, since it was aimed at revealing the epistemological beliefs of the sports sciences students as they are.
b. Sample
The sample group was formed with the appropriate sampling method based on accessibility and suitability principles. The sample group of the research was comprised of 173 individuals (86 females, 87 males) studying at Selçuk University, Faculty of Sports Sciences. Some personal characteristics concerning the sample group are given in Table 1.

<table>
<thead>
<tr>
<th>Table 1. Values concerning the characteristics of the sample group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>19 - 20</td>
</tr>
<tr>
<td>21 - 23</td>
</tr>
<tr>
<td>24 and over</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td><strong>Department</strong></td>
</tr>
<tr>
<td>Recreation</td>
</tr>
<tr>
<td>Management</td>
</tr>
<tr>
<td>Teaching</td>
</tr>
<tr>
<td>Coaching</td>
</tr>
</tbody>
</table>

c. Data Collection Tool
In order to determine the epistemological belief levels of the students, the "Scientific Epistemological Beliefs Scale" was used, which was developed by Pomeroy (34) and adapted to Turkish by Deryakulu and Bskmaz (16). The scale is a five point likert scale and comprised of 30 articles with a single factoral model. The cronbach alpha internal consistency coefficient of the scale was calculated as .91.

d. Analysis of Data
In the analysis of the data, SPSS 22.00 program was used for the statistical analyses. As the statistical method, Independent Samples t test was used for the comparison of two groups and One Way ANOVA analysis for two or more groups. For statistical analysis, the significance level was taken as 0.05.

<table>
<thead>
<tr>
<th>Table 2. Comparison of the epistemological beliefs of the research group concerning the gender variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
</tbody>
</table>

The comparison of the epistemological beliefs of the research group concerning the gender variable is given in Table 2. According to this, there was a statistically significant difference in favor of the females (p<0.05). Additionally, it was determined that the epistemological belief level of the research group was over the average (X_Female=100.72, X_Male=96.39).

<table>
<thead>
<tr>
<th>Table 3. Comparison of the epistemological beliefs of the research group concerning the age variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inter-Groups</strong></td>
</tr>
<tr>
<td>171,510</td>
</tr>
</tbody>
</table>
The Comparison of the epistemological beliefs of the research group concerning the age variable is given in Table 3. Accordingly, it was observed that there was statistically no significant difference between the epistemological beliefs concerning the age variable (p>0.05).

Table 4. Comparison of the epistemological beliefs of the research group concerning the grade variable

<table>
<thead>
<tr>
<th></th>
<th>KT</th>
<th>sd</th>
<th>KO</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-groups</td>
<td>103,262</td>
<td>3</td>
<td>34,421</td>
<td>,320</td>
<td>,811</td>
</tr>
<tr>
<td>Within-Group</td>
<td>18156,368</td>
<td>169</td>
<td>107,434</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18259,630</td>
<td>172</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The comparison of the epistemological beliefs of the research group concerning the grade variable is given in Table 4. According to this table, there was statistically no significant difference between the epistemological beliefs concerning the grade variable (p>0.05).

Table 5. Comparison of the epistemological beliefs of the research group concerning the department variable

<table>
<thead>
<tr>
<th></th>
<th>KT</th>
<th>sd</th>
<th>KO</th>
<th>F</th>
<th>p</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-Groups</td>
<td>1463,186</td>
<td>3</td>
<td>487,729</td>
<td>4,907</td>
<td>,003</td>
<td></td>
</tr>
<tr>
<td>Within-Group</td>
<td>16796,444</td>
<td>169</td>
<td>99,387</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18259,630</td>
<td>172</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Groups; 1st group Recreation, 2nd group Management, 3rd group Physical Education Teaching, 4th group Coaching

The comparison of the epistemological beliefs of the research group concerning the department variable is given in Table 5. According to this, there was a statistically significant difference between the epistemological beliefs (p<0.05). As the conclusion of the LSD test that was conducted to detect between which groups the difference was, it was determined that the students of the physical education teaching had higher levels of epistemological beliefs compared to the ones studying at sport management, coaching, and recreation departments.

3. Discussion and Conclusion

This study was conducted to examine the epistemological beliefs of the individuals studying at university level at sports sciences field. Not only the epistemological belief levels of the students but also the differences of these beliefs were examined concerning the age, gender, grade, and department variables. The research group was comprised of 173 sports sciences students, who were studying at Selçuk University as of 2018, selected through random selection method.

In this part of the research, the results and related discussion are presented concerning the determination of the epistemological beliefs of the individuals studying at higher education on sports sciences field. It was determined that the epistemological belief levels of the research group were over the average. Therefore, it can be said that the students of sports science have high epistemological beliefs.

In a study conducted by Abakay (1) on physical education teacher candidates, it was determined that the belief levels of the research group concerning the fact that knowledge were relative, and the belief levels
concerning the fact that the knowledge is absolute were at medium range. Similar to the results of this research, there are other studies demonstrating that the epistemological belief levels of the university students were over the average (3, 11, 19, 7, 8, 40, 9, 10).

In the gender-based comparison, it was determined that the epistemological belief levels of the females were higher. In a study conducted by Taşkın (43), it was determined that the epistemological belief levels of female teacher candidates were higher from the males.

There was statistically no significant difference between epistemological belief levels concerning the age and grade variables. In the department-based comparison, it was determined that the students of the physical education teaching had statistically significantly higher levels of epistemological belief compared to the ones studying at sport management, coaching, and recreation departments. There are various studies demonstrating that university students might have different epistemological beliefs based on their field of study (42, 45, 6, 32).

Epistemological attitudes of the individual are improvable. The development of mentioned epistemological beliefs can be assured by individual effort and awareness, and via education and training elements that can be provided either through the interest and impact of the family or in a formal or informal way. In this context, the teacher has an important and central role in the development of individuals, who know themselves in individual and social structures, who perceive the events correctly, clearly and interpret them accurately, and who has the critical questioning skills. Therefore, in order to create awareness also in the faculties of education established for raising teachers, the necessity to consider epistemology and the necessity to overcome the deficiencies were mentioned (12).

As the conclusion, in this study which was conducted to determine the epistemological beliefs of the individuals, it was determined that the epistemological beliefs of the sports sciences students were over the average, while it was determined that there was statistically no significant difference concerning the age and grade variables. It was also found that the epistemological beliefs of the females were higher and it was concluded that the students of the physical education teaching department had higher levels of epistemological belief.

4. References


