Analysis On Reflective Thinking Tendencies Of Student Teachers According To Their Individual Innovativeness And Sociotropic-Autonomic Personality Characteristics

Ayşem Seda Önen a*, Canan Koçak a

* Education Faculty, Hacettepe University, Ankara, 06800

Abstract

This study aimed to analyze the reflective thinking tendencies of student teachers along with their openness to individual innovations and sociotropic-autonomic personality characteristics. In the research “Sociotrophy Autonomy Scale” is used which is developed by Beck and his friends. In order to determine student teachers’ levels of innovativeness and the categories they belong, the “Individual Innovativeness Scale”, which was developed by Hurt, Joseph and Cook (1977) and was adapted into Turkish by Kilicer and Odabasi (2010), was administered. The data collection tool used for determining student teachers’ reflective thinking tendencies was the “Reflective Thinking Tendency Scale” developed by Semerci (2007).

Keywords: Reflective thinking, individual innovations, sociotropic-autonomic personality, student teachers;

1. Introduction

Characteristics are quite important in affecting individuals’ worlds of thoughts and motivating their functionalities in their lives. Sociotropy and autonomy are dominant characteristic aspects affecting psychological functionality of individuals (Beck, 1983). Sociotropy is defined as the need for approval within interpersonal relationships to secure the relationship, while autonomy stands for more focused attitude towards self-achievement and control (Mazure, et.al, 2001; Akkaya, 2009). Sociotropic or autonomic characteristics of individuals also affect their behaviors towards others in their environments. In case the individual is a teacher, s/he would act accordingly

*Corresponding author: A. Seda Önen. Tel.: 0312 297 67 83; fax: 0312 297 86 00
E-mail address: aysenseda@gmail.com
his/her own characteristics, which would also affect students s/he trains. Therefore, it is very important to analyze
teachers’ and student teachers’ characteristic features within a professional approach through increased importance
in studies on the topic.

Studies have shown that the pragmatic philosophy matches with the innovativeness within teacher training
process while reflective thinking as an important aspect of teaching is highly emphasized (Goodman, 1984;
Calderhead, 1989; LaBoskey, 1993; Kocak & Önen, 2011). Definitions on reflective thinking involve style of
thinking using a knowledge structure supportive of any thought, knowledge and reaching their expected outcomes in
an effective, coherent and careful way (Dewey, 1991; reported by: Unver, 2003; Semerci, 2007). Additionally,
reflective thinking is known to have essential affects in education. Training programs, which improve reflective
thinking contribute positively to student teachers’ planning, application and evaluation processes as well as
improving their reflective thinking skills (Norton, 1994; Schweiker et.al, 2003; Lim, et al., 2003; Kocak & Önen,
2012).

Characteristic not only affect individuals’ worlds of thoughts and behaviors but also shape their progressive
attitudes (Goldsmith and Foxall, 2003). Innovativeness, defined as ideas, applications or objects approached as new
by the community, is closely related to all behaviors of individuals in social life. Innovativeness, as the degree, to
which individuals or institutions perceive the innovation sooner than the others (Rogers, 1995), involves risk taking,
openness to experiences and leadership in itself (Kilicer & Odabasi, 2010). It is very important to analyze
characteristics of teachers and student teachers as important actors in training new generations, along with their
reflective thinking and innovative skills. Literature scan on the topic of this study, which is the analysis of the
relationship between teachers’ and student teachers’ characteristics and their innovative and reflective thinking
tendencies concluded negative. University education has great effects on decreasing the sociotropic characteristics in
individuals, while increasing the number of autonomic ones (Akkaya, 2009). Therefore, this study aims to determine
the relationship between student teachers’ autonomic and sociotropic characteristics attained in their university
education along with their innovativeness and reflective thinking tendencies.

2. Method

The sampling of this study in scanning model consists of 400 student teachers studying at Hacettepe University,
Faculty of Education. Data were collected through Sociotropy-Autonomy Scale, Reflective Thinking Tendency
Scale and Individual Innovativeness Scale. Sociotropy-Autonomy Scale was developed by Beck et.al. (1983) and
was adapted into Turkish by Sahin et.al. (1993). The Scale is a data collection tool used in evaluating individuals’
dependant and independent characteristics. It consists of 60 items prepared to determine two different
characteristics, 30 of which represent the Sociotropy subscale (Cronbach Alpha: .83), and the remaining 30
representing the Autonomy subscale (Cronbach Alpha .81). The high scores obtained from the Sociotropy subscale
indicate highly sociotropic characteristics while those obtained from the autonomy subscale indicate highly
autonomic traits. The data collection tool used for determining student teachers’ reflective thinking tendencies was
the “reflective Thinking Tendency Scale” developed by Semerci (2007) (Cronbach Alpha .908). In order to
determine student teachers’ levels of innovativeness and the categories they belong, the “Individual Innovativeness
Scale”, which was developed by Hurt, Joseph and Cook (1997) and was adapted into Turkish by Kilicer and
Odabasi (2010), was administered.

3. Findings

Data collected via the Sociotropy-Autonomy Scale, Reflective Thinking Tendency Scale and Individual
Innovativeness Scale were analyzed and 4 student teachers were found to have left the data collection tools
incomplete. These data were eliminated from the study and the conclusions were sought using the data obtained
from 396 student teachers.

According to the original scoring system of the Sociotropy-Autonomy Scale, high scores obtained from the
Sociotropy subscale indicated highly sociotropic characteristics while those obtained from the autonomy subscale
indicated highly autonomic traits (Beck et.al, 1983). To determine the most dominant characteristics in 396 student
teachers, evaluation was done over the total score and the student teachers were listed under two categories as
sociotropic and autonomic. A similar grouping was done according to the Individual Innovativeness Scale. Due to the unique scoring system of the Individual Innovativeness Scale, individuals could be categorized according to their innovativeness. Individuals could be listed under five categories according to their innovativeness characteristics with dominant features per category. The categories were titled Innovative, Pioneer, Questioning, Sceptic and Traditionalist. The scale consisted of 20 statements 12 of which were positive and 8 negative. Each statement in the scale about individual innovativeness was scored in 5-point Likert-type. The innovativeness score of an individual is calculated by subtracting the score obtained from the negative statements from the score obtained from the positive statements and adding 42 to the result. The lowest score in the scale was 14 while the highest could be 94. The classification of scores were made for scores of 80 and higher as “Innovative”, scores between 69-80 as “Pioneer”, scores between 57-68 as “Questioning”, scores between 46-56 as “Sceptic” and for scores of 46 and lower as “Traditionalist”. In other words, individual innovativeness has been classified and the most radical group was defined at the “Innovative” sub group while the least innovative group was defined as “Traditionalist”.

Student teachers were categorized under four groups according to their innovative attitudes as “innovative”, “pioneer”, “questioning” and “skeptic”. Since none of the student teachers scored less than 46, the final group of “traditionalist” did not exist. Table 1 displays the percentage distribution of student teachers according to their sociotropic-autonomous characteristics.

Table 1. Percentage Distribution of Student Teachers According to their Individual Innovativeness

<table>
<thead>
<tr>
<th>Individuals</th>
<th>Innovative</th>
<th>Pioneer</th>
<th>Questioning</th>
<th>Skeptic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomic Individuals</td>
<td>74.2 %</td>
<td>12.9 %</td>
<td>30.6 %</td>
<td>13.9 %</td>
</tr>
<tr>
<td>Sociotropic Individuals</td>
<td>25.8 %</td>
<td>6.9 %</td>
<td>27.5 %</td>
<td>19.6 %</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
<td>11.4 %</td>
<td>29.8 %</td>
<td>43.4 %</td>
</tr>
</tbody>
</table>

Distributions on Table 1 show that 74.2% of the student teachers were autonomic and 25.8% of them were sociotropic individuals. The categorization of student teachers according to their characteristics concluded that 43.4% of participating student teachers were “questioning”, 29.8% were “pioneer”, 15.4% were “skeptic” and the remaining 11.4% were “innovative”. Student teachers with autonomic characteristics were categorized according to their innovative traits and 42.5% value was obtained for “questioning” individuals ranking the first, while “pioneer” student teachers ranked the second with 30.6% value, “skeptic” group came third with 13.9% value and “innovative” student teachers were fourth with 12.9% value. A similar sequence was observed for the student teachers with sociotropic characteristics.

According to the dominant characteristics, student teachers were divided into two groups as “autonomic” and “sociotropic”. To determine whether their reflective thinking characteristics were different from each other, independent samples t test was administered and the results are displayed on Table 2.

Table 2. Comparison of reflective thinking scores of sociotropic-autonomic student teachers

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>( \bar{X} )</th>
<th>ss</th>
<th>sd</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomic Individuals</td>
<td>294</td>
<td>2.65</td>
<td>.358</td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>Sociotropic Individuals</td>
<td>102</td>
<td>2.79</td>
<td>.402</td>
<td></td>
<td>394</td>
<td>.316</td>
</tr>
</tbody>
</table>

The reflective thinking scores of sociotropic and autonomic student teachers displayed on Table 2 show that sociotropic student teachers scored higher than autonomic student teachers. The independent t test results concluded that this difference was statistically significant \( t_{394} = 3.16, p > .05 \).

Scores of the student teachers listed under four categories according to their innovative traits were administered the single-dimensional variance analysis to determine any potential differences between their reflective thinking traits. The obtained values were listed on Table 3.

Table 3. Analysis of reflective thinking tendency scale scores according to innovativeness groups

<table>
<thead>
<tr>
<th>Reflective Thinking Tendency Scale</th>
<th>Innovative</th>
<th>Pioneer</th>
<th>Questioning</th>
<th>Skeptic</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{X} )</td>
<td>ss</td>
<td>( \bar{X} )</td>
<td>ss</td>
<td>( \bar{X} )</td>
</tr>
</tbody>
</table>
Table 3 displays that “skeptic” student teachers have higher tendency towards reflective thinking than others. The difference observed in reflective thinking tendencies of student teachers according to their innovativeness was applied in an ANOVA analysis to see any potential characteristics of student teachers and the results are displayed on Table 4.

Table 4. Single dimensional variance analysis results on reflective thinking tendency scale scores according to innovativeness

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>sd</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.480</td>
<td>3</td>
<td>.493</td>
<td>3.56</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54.040</td>
<td>391</td>
<td>.138</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>55.520</td>
<td>394</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 displays the comparison on reflective thinking tendencies of student teachers according to their innovativeness and significant differences were determined \[ F(3,391) = 3.56; p<.05 \]. The Scheffe test, which was administered in the later phase of the study, concluded that the reflective thinking tendencies of student teachers at “skeptic”, “innovative” and “pioneer” categories were different from each other.

4. Conclusion and Discussion

This study aimed to analyze the reflective thinking tendencies of student teachers along with their openness to individual innovations and sociotropic-autonomic personality characteristics. It is very difficult to evaluate reflective thinking abilities that individuals have (Rodger, 2002) and there are differences between reflection skills of individuals; therefore, reflective thinking shall be considered together with personal characteristics of individuals. In the research “Sociotropy Autonomy Scale” is used which is developed by Beck and his friends (1983) and validity and reliability tests are done by Sahin and his friends (2003). The Sociotropy-Autonomy Scale was developed to assess these personality dimensions independent of each other. In order to determine student teachers’ levels of innovativeness and the categories they belong, the “Individual Innovativeness Scale”, which was developed by Hurt, Joseph and Cook (1977) and was adapted into Turkish by Kilicer and Odabasi (2010), was administered. The data collection tool used for determining student teachers’ reflective thinking tendencies was the “Reflective Thinking Tendency Scale” developed by Semerci (2007). The sampling consisted of 400 student teachers studying at Hacettepe University, Faculty of Education. Data obtained via the data collection tools were eliminated and the analysis was continued with 396 student teachers.

The analysis on the sociotropic and autonomic characteristics of student teachers concluded that most student teachers had autonomous characteristics. This comes from student teachers’ previous life experiences before their university education, which are effective on their characteristics. A study by Mendelson, Robins and Johnson (2002) showed that developmental experiences of individuals are closely related to sociotropy and autonomy. Additionally, it is quite pleasing to observe that most teachers have autonomic characteristics as they are the next role models to children coming after their parents (Hawkes, 1991). A teacher as an individual and a professional has to have the abilities to make and apply their decisions. Therefore, every teacher and student teacher has to have dominant autonomous characteristics for abilities of free thinking, making decisions, acting according to decisions, behaving independently. When student teachers are categorized according to their innovative characteristics, 43.4% were placed in the “questioning” category, 29.8% were listed under “pioneer”, 15.4% were “skeptic” and the remaining 11.4% were “innovative” sections. Student teachers, who have autonomic characteristics, were categorized according to their innovative traits and 42.5% value was obtained for “questioning” individuals ranking the first, while “pioneer” student teachers ranked the second with 30.6% value, “skeptic” group came third with 13.9 % value and “innovative” student teachers were fourth with 12.9% value. A similar sequence was observed for the student teachers with sociotropic characteristics. During university education, students learn and attain knowledge individually (Zeiner, 1996). Therefore, university students shall experience new and different thinking processes for solving the problems they face individually (Schön, 1983). Autonomic and sociotropic individuals with similar innovative characteristics having similar thinking processes could be also a result of the same conclusion.
Sociotropic and autonomic student teachers were analyzed in terms of their reflective thinking scores and the results showed that sociotropic student teachers had higher reflective thinking scores than autonomic student teachers. The independent t-test results indicated that the difference was also statistically significant. In other words, reflective thinking characteristics of sociotropic student teachers were more dominant. This could be related to the student teachers’ social harmonies. The relationship between weak social harmony and autonomy was proven by Campbell, Kwon, Reff ve Williams (2003) along with the positive relationship between social harmony and sociotropy. It is known from the studies that social harmony is closely related to sociotropy and reflective thinking (Robins, et.al, 1997; Campbell, et.al, 2003) therefore, the finding of this study is also supportive of the literature. The final phase of the study involved the comparison of student teachers’ reflective thinking tendencies with their innovative characteristics. Cognitive structures and personality traits of individuals shape their innovative characteristics (Goldsmith & Foxall, 2003). Reflective thinking, which means effective, coherent and careful thinking on a certain thought or thinking structure (Dewey, 1991), received higher values from “skeptic” student teachers, and this is related to the approaching of individuals towards innovations. Social norms are quite important to skeptic individuals as their need for continuous control in looking at innovations from different perspectives or adapting to social norms (Rogers, 1995).

References


