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Teachers' Opinions on Teaching and Assessing Methods in the Life Science Curriculum in the Context of Values

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Abstract

This research aims to investigate teachers' opinions about teaching and assessing methods that predicted in Life Sciences Course Curriculum (LSCC) in accordance of value education. Survey model was used in this research to achieve this aim. The study population consisted of 155 classroom teachers who serve in city center of Bingöl province, Turkey. An assessment instrument consisting of two chapters and developed by the researcher was used to collect data. The first chapter includes personal information about participants and the second chapter includes items that try to determine recommended teaching and assessing methods in LSCC. Arithmetic means and standard deviation were used for data analysis. It was found that teachers rated teaching and assessing methods proper. It is wished that this study will be useful for teachers, curriculum development specialists and decision makers in education system.

Keywords: Teaching values, assessing values, classroom teachers, life science course

Introduction

The broad term 'values education' encompasses, and in practice is often seen as having a particular emphasis on, education in civic and moral values. This term is very closely related to spiritual, moral, social and cultural development; character education, education in virtues and the development of attitudes and personal qualities. Different educational concepts deal with values in education. Important

concepts are value education, moral development, critical thinking and critical pedagogy (Halstead & Taylor, 2000; Schuitema, Dam & Veugelers, 2000). All these concepts have their own philosophical and political background and their own educational practices (Schuitema, Dam & Veugelers, 2000).

Value education seeks to strengthen the transfer of values in education by means of the curriculum and the moral climate in the school. Critical thinking aims to develop a reflection on values and a value development by means of analyzing and comparing opinions. Moral development concentrates on the stages of cognitive development for learning values and the skills to reflect on values (Schuitema, Dam & Veugelers, 2000).

To value education, moral development can add the skills of thinking and reflecting on values. It can show students that values are constructs, that people can make choices, and that in making choices they reason and think about what to do and what to believe. To critical thinking, the moral development perspective can add the dimension that values influence thinking; that values direct signification processes. Critical thinking is basically oriented towards the means (logical thinking), not towards the goal (the values). Moral development can make critical thinking more goal-oriented. Both 'critical thinking' and 'moral development' consist of notions that relate to students' learning activities with the

main characteristic that a student should develop his/her own values. Because both movements promote a value-neutral position for the teacher in pedagogical action, there is, in these theoretical positions, not enough focus on the values teachers themselves find important for their students; on the way teachers express these values and, for interaction, on the value level between teacher and student (Schuitema, Dam & Veugelers, 2000).

Curriculum and Values Education

It is primarily a conception of values education as pedagogy, with effective teaching and learning being enhanced by the positive human relationship and explicit values-oriented transactions that are forged within quality values-laden programs. These programs both help to establish the ambience within which the interactions of teachers, students and knowledge are negotiated as well as the vehicle for the interaction. Good value-laden programs could help inject into schools calmness, confidence, mutual respect, empathy, self-management skills and other positive effect, all of which contributed significantly to the quality of teaching and learning (Lovat, Dally, Clement, & Toomey, 2011).

Curriculum-based values education teaches values and develops character through the subject matter content; cooperative learning does this through the instructional process. Cooperative learning, which can be done in pairs or small groups, contributes to character in many ways. It teaches students the value of cooperation;

builds community in the classroom and teaches basic life skills such as communicating and working together (Lickona, 1996).

Some curriculum developed and designed on the basis of the explicit focus of values. These curriculum aims to educate in affective domain clearly (Bacanlı, 2009). In some countries (Australia, China, Russia, Malaysia etc.) values education is a mandated part of the curriculum (Lovat, Dally, Clement, & Toomey, 2011). Also in Turkey, values are a mandatory part of the curriculum since 2005. Before 2005, values were a part of hidden curriculum and values teaching was depend on teachers' personal preferences and efforts (Yaşaroğlu, 2013).

Methods of Values Education

Various approaches have developed to teaching values. It can be seen in literature review inculcation, the moral development, analysis, clarification, action learning, emotional – rational approach, character education, (Halstead & Taylor, 2000; Kupchenko & Parsons, 1987; Superka, 1976).

Inculcation: This approach aims to install or internalize certain values in students. Teachers can use modeling, explanation, manipulation, positive and negative reinforcement, games, simulations, role playing, discovery learning and modeling to inculcate values as methods (Superka etc., 1976).

Analyses: This approach's target is to help students develop logical thinking and using scientific inquiry procedures in solving value issues. Additionally, this approach attempts to help students develop their own values in response to value conflicts within society (Kupchenko & Parsons, 1987). It can be used structured rational discussion, testing principles, analyzing analogous cases, debate and research as teaching methods (Superka, 1976).

Moral Development: The moral development approach is based on the theory and research of cognitive developmental psychologists such as Jean Piaget and Lawrence Kohlberg. This approach attempts to stimulate students to develop more complex moral reasoning patterns through successive- and sequential stages. The technique most characteristic of the moral development approach is to present a hypothetical or factual value dilemma story which is then discussed in small groups. Moral dilemma episodes with small group discussion relatively structured and argumentative method can be used in this approach (Superka, 1976).

Clarification: The central focus of this approach is helping students both rational thinking and emotional awareness to examine personal behavior patterns and to clarify and actualize their values. In short, its purpose is helping students become aware of and identify their own values and those of others. Role-playing games, simulations, contrived or real value-laden situations, in-depth self-analysis exercises, sensitivity activities, out-of-class activities and small group discussion can be used in teaching values (Superka, 1976).

Action learning: This approach is related to the efforts of some social studies educators to emphasize community based rather than classroom based activities. It provides specific opportunities for learner to act their values. The action learning perceive human (learner) as interactive. Many of the teaching methods used in the analysis and clarification approaches are also can be applied in action learning approach. However, two techniques unique to the action approach are skill practice in group organization and interpersonal relations and action projects provide opportunities to engage in individual and group action in the school and community (Superka, 1976).

Emotional – rational approach: This approach attempts to help students understand and adopt a lifestyle based on care and consideration for others as well as self. A variety of methods can be used in this approach. Each method should involve small groups. These methods include expressive and communication techniques (speaking, writing prose, poetry and plays, painting, modeling with clay, and photography), discussion, drama, role playing, simulations involving family, school, or community problem, and real life involvement (Kupchenko & Parsons, 1987).

Assessment and Evaluation

Values education develops cognitive, affective, and psychomotor domains. Knowing which is good or bad, simply relevant to the cognitive domain. Teacher's aim is to get students acquire knowledge about goodness or evil, kindness or rudeness, righteousness or false and so on. However, affective domain involves emotions, preferences, sentiments, beliefs, expectations, attitudes, morals, ethic, and values (Bacanli, 1999). When it comes to psychomotor domain, it is related to behaviors. Based on these domains, it can be understood that values are measurable and numerous assessing methods can be used in values education. As Lovell (1996) expressed, teachers continually measure values in their daily classroom relationship.

Practical evaluation strategies include pre- and post-tests, surveys and questionnaires -interest inventories, attitude scales, interviews, school records -persons' presentations or reports about their interests and feelings-, observation -students in their natural environment- data as tools (Education, 2005; Tekin, n.d. :210). These strategies can be used as measuring tools in affective domain.

Life Science Course Curriculum and Values Education

Life Science course is taught in 1st, 2nd, and 3rd grades of primary schools in Turkey. It is created on the basis of collective instruction and designed for children to recognize themselves, society, and the world they live in. It is compounded of natural and artistic sciences, contemporary ideas and values. This course has been involved in the curriculum of 1926, 1936, 1948, 1968, 1998, and 2005 with the same name (Ministry of National Education, 2009: 6; Sönmez, 1999). In LSCC, it can

be seen that there is no particular chapter for values. Values take part in several titles separately (Ministry of National Education, 2009; Yaşaroğlu, 2013).

Research Purpose

The aim of this study is to describe teachers' opinions about teaching and assessment methods that predicted in LSCC in accordance of value education. In order to measure their opinions, following questions were asked as research problem.

According to classroom teachers;

- To what extent are the teaching methods suggested in LSCC appropriate for values education?
- To what extent are the assessing methods suggested in LSCC appropriate for values education?

Method

Survey model was used for this research. Survey method is a quantitative and descriptive method. Survey models are research approaches which aim to describe the past or existing situation as it was/is. In such models, the research event, individual or object is described as it is under its own conditions (Karasar, 2005: 77).

Participants

The research population consisted of 305 primary school teachers who serve at city center of Bingöl province, Turkey. All population was reached and the data collected on the basis on voluntariness. 155 teachers fill out the questionnaire and researcher analyzed 155 instruments.

Data Collection Tools and Data Analyses

All teachers responded to two sets of questionnaires that developed by researcher. Responses were used to obtain data. It was consisting of close-ended questions and developed on the basis of LSCC. Firstly, teaching and assessing methods recommended in LSCC were determined and converted to survey items. Secondly, all items are rated on a 5-point scale with descriptors for scores 1 (absolutely not proper) to 5 (absolutely proper).

The mean and standard deviation were used as descriptive statistics in data analyses. The assessment ranges of the means were measured as; 1-1.80: "absolutely not proper"; 1.81-2.60: "Not proper", 2.61-3.40: "Medium-level proper", 3.41- 4.20: "proper", 4.21-5.00: "Absolutely proper".

For reliability of the questionnaire, internal consistency coefficient Cronbach Alpha was measured as $\alpha = 0.941$.

Results and Discussion

The results are presented according to the teachers' answers. Research problems were showed in Table 1 and Table 2.

Table 1: Teachers' opinions on the Significance Level of teaching methods

Teaching method	Mean	Sd
educational games	3.99	1.13
educational drama	3.96	1.16
creative drama	3.95	1.26
role playing	3.92	1.21
demonstration	3.80	1.11
brainstorming	3.80	1.10
field trip	3.78	1.37
debate	3.74	1.16
problem-based learning	3.74	1.03
six thinking hats	3.69	1.16
socratic method	3.66	1.06
project-based learning method	3.57	1.16
lecture	3.19	1.17
mean	3.75	

Teachers' opinions on teaching methods were evaluated in the context of values education. Table 1 indicates that teachers perceive teaching methods "proper" for evaluating values. Teachers perceive all methods "appropriate" for values education. In analyzing teaching methods singly, it can be seen that teachers perceive educational games, educational drama and creative drama as highly scored three methods; lecture, project-based learning and socratic methods as lowest scored methods in values education. According to the teacher's opinions, there is no "absolutely proper" method. It can be understood that the methods that required students' active participation in values education like educational games, educational drama, and creative drama were measured as proper. The lecture method was measured as medium-level proper for values education. In addition, the methods that recommended in LSCC are consistent with approaches in values education.

Table 2: Teachers’ opinions on the Significance Level of assessing methods

Teaching method	Mean	Sd
observing	3.90	1.03
self-assessment	3.68	1.09
performance evaluation	3.65	1.19
matched items	3.65	1.09
portfolio evaluation	3.55	1.20
peer assessment	3.54	1.18
check list	3.54	1.12
oral presentation	3.54	1.13
multiple choice items	3.50	1.23
mind map	3.48	1.20
rubric evaluation	3.43	1.10
short answer items	3.41	1.20
long answer items	3.08	1.24
Mean	3.53	

Table 2 shows that teachers tended to rate assessing process as appropriate in terms of values education with 3.53 score. In analyzing assessment methods one by one, it can be seen that teachers perceive observing, self-assessment and performance evaluation as highly scored methods; rubric evaluation, long answer and short answer items as lowest scored methods in values education. Teachers accept all methods as appropriate except long answer items. They valued “long terms items” as medium-level proper with regard to values education. Considering that values are related to three domain (cognitive, affective, and psychomotor), all assessment methods can be used in values education according to the characteristics of subject. It can be understood from Table 2 that teachers evaluated process-based evaluation methods with high scores.

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