Pre-service Teachers’ Beliefs about Curriculum Orientations
Belgin Tanriverdi a, Özlem Apak b

aKocaeli University, Kocaeli 41380, Turkey
bKocaeli University, Kocaeli 41380, Turkey

Abstract

Curriculum orientations are beliefs about what a school curriculum should achieve and how teaching, learning and assessment should occur (be carried out). This study aims at measuring teacher beliefs about five curriculum orientations (academic, cognitive process, social reconstruction, humanistic, and technological) in terms of different variables. The study was carried out (conducted) with 805 pre-service teachers from different departments at one Faculty of Education in the North West of Turkey. Data were collected through Curriculum Orientation Inventory; one independent sample T-test, one-way multivariate analysis of variance and Pearson correlation coefficient analysis were conducted. The results showed that humanistic orientation ranked highest and social reconstruction ranked lowest considering all the participants in the study. Considering all curriculum orientations, students in pre-school teaching education scored significantly higher than all the other departments. Among the curriculum orientations, highest correlation was found between “technological” and “humanistic” curriculum orientation.

Keywords: Curriculum orientations; curriculum design; pre-service teachers; teacher beliefs

1. Introduction

Teacher beliefs or orientations have been examined by researchers in several fields, and numerous studies confirm that teachers’ beliefs about teaching, curriculum, learning, and assessment processes, the core behaviours in schooling, influence strongly how teachers teach and what students learn or achieve (Clark & Peterson, 1986; Pajares, 1992; Thompson, 1992; Calderhead, 1996). What teachers believe about one area of schooling (e.g., teaching or curriculum) impacts on practices and beliefs in other important domains (e.g., assessment or learning) (Nespor, 1987; Kagan, 1992; Cizek, Fitzgerald, Shawn, & Rachor, 1995; Brown & Rose, 1995; Delandshere & Jones, 1999; Cheung & Ng, 2000; Dahlin, Watkins & Ekholm, 2001; Rex & Nelson, 2004). Their belief systems reflect personal theories about the nature of knowledge and knowing that, in turn, influence teachers’ curriculum
decision making, teachers' judgments about teaching approaches and the teaching-learning process (Hofer & Pintrich, 1997; Lovat & Smith, 1995; Pajares, 1992; Artzt & Armour-Thomas, 1996).

A teacher's curriculum orientation is related to her/his philosophy of education and they both relate to the goals of education, to relative importance of subject matter, and to how teachers and students should interact. Thus, different curriculum orientations are beliefs about alternative curriculum designs. Cheung & Wong (2002) based on Eisner & Vallance (1974), Schubert (1986), Tanner and Tanner (1995), and McNeil (1996) identify five curriculum orientations: Cognitive Process; Curriculum as Technology (Behavioural); Curriculum for Self-actualisation (Humanistic); Curriculum for Social Reconstruction; and Academic Rationalism. The cognitive process orientation is focused on developing skills in a variety of processes, including problem solving, decision making, critical thinking, and memory skills; it means learning intellectual processes. Academic rationalism analyses basic fields of study and academic disciplines that have traditionally been known as a liberal education. Every subject emphasizes rigorous intellectual training and students are expected to act like physicists, historians or mathematicians. The role of the teacher is to help students acquire the content, concepts, and ideas of the classic academic disciplines. Curriculum for Self-Actualisation (Humanistic) is where the curriculum builds on the students' interests. The purpose of education is to provide students with opportunities in an open communicative setting to foster their personal development as unique individuals. Social reconstruction attempts to develop a critical consciousness among children of the major issues of society. The curriculum focuses on controversial social issues and is designed to encourage students to take an active role in improving the society in which they live. The teacher's role is to make students aware of the important social issues of their time and culture and to encourage them to debate alternatives, make informed judgments, and act on them. Technological orientation stresses a scientific approach using measurable goals and objectives. The teacher's role is to plan the curriculum in a sequential and orderly manner by specifying a list of sequential objectives with tests that demonstrate the students' mastery of each objective. The close relationship between the beliefs of teachers, their teaching behaviours and their learning goals for students is well documented in the literature (Richardson et al., 1991). For example, if a teacher believes in the social reconstruction orientation, he or she tends to include topics such as pollution, corruption and unemployment to help students understand the problems confronting our society.

Undoubtedly, teacher beliefs about curriculum design affect the quality of education in schools. If a teacher does not believe that a particular design is valuable, the implementation of the curriculum may be not effective at all. The teacher may even alter the intended curriculum to make it more congruent with his or her own belief systems or classroom context. Curriculum developers will have to take into account of the teachers' knowledge, beliefs, and skills in developing a new curriculum; otherwise, it is unlikely that the curriculum will be implemented as intended (Cotton 2006). To ensure the successful implementation of a curriculum, pre-service teacher education and in-service professional development for teachers need to focus on the beliefs of participants as well as developing their knowledge and understanding of the new approaches (Anderson, White & Sullivan, 2005). Although pre-service teachers have less immediate influence on the implemented curriculum, their pre-existing beliefs, usually formed by their former experiences as learners, have the potential to impact on their teaching practices when they become qualified teachers (Raymond, 1997). Studies about pre-service teachers’ orientations are very limited in the related literature in Turkey. Although all teachers hold beliefs about alternative curriculum designs, researchers know little about how the beliefs are related to each other and to teacher demographic characteristics such as gender and subject areas in Turkey.

2. Purpose

This study aims at investigating the types of beliefs held by pre-service teachers in Turkey in terms of different variables. Specifically, the present study was guided by the following three major research questions:

1. What is the curriculum orientation of pre-service teachers in Turkey?
2. Are the curriculum orientations related to teachers’ gender, class level and subject speciality?
3. What are the relations among the curriculum orientations in each teacher’s belief system?
3. Method

Participants
The participants consisted of 805 pre-service teachers attending a university at the north-west of Turkey. Of the participants, 628 were female (78%) and 177 were male (22%). Of the participants 143 (17.8%) were from primary school teaching, 153 (19%) were from mathematics teaching, 124 (15.4%) were from science teaching, 175 (21.7%) were from English language teaching (ELT), 123 (15.3%) were from pre-school teaching, 87 (10.8%) were from Turkish language teaching. Of these participants 287 (35%) were first grade, 153 (19%) were second grade, 192 (24%) were third grade and 173 (22%) were final grade students.

Data Collection Tools
Data collection tool was a forty-five-item questionnaire on an eight-point Likert scale (1, strongly disagree, to 8, strongly agree) translated and adapted into Turkish by Eren (2010) from Cheung ve Wong’s (2002) Curriculum Orientation Inventory which consists of five major conceptions (i.e., academic, humanistic, technological, social reconstruction and cognitive process) known as COI. In Eren’s study scores for inner reliability were found 0.60 for academic orientation; 0.68 for cognitive processes; 0.75 for social reconstruction; 0.78 for humanistic orientation, and 0.76 for technological orientation. Cronbach alpha scores in his study were found 0.57 for academic orientation; 0.76 for cognitive processes; 0.77 for social reconstruction; 0.81 for humanistic orientation, and 0.71 for technological orientation and 0.90 for all scales.

Data Analysis
The mean and standard deviation for each of the subscales were obtained. The computed Pearson (r) correlation coefficient was used to determine whether there is a significant relationship among the factors in curriculum orientation. One independent T-test was used for gender effect on COI sub-scales and Multivariate analysis of variance (MANOVA) was used to examine the effects of teachers’ academic disciplines and class level they attend on the curriculum orientations. If the MANOVA tests indicated that there were statistically significant effects, then ANOVAs on each subscale scores were conducted as follow-up tests. For all these statistical procedure, SPSS 20 for Windows was used. Moreover, the impact ratios of the independent variable on the dependent one have also been examined. The impact magnitude are interpreted as follows: 0.01 ≤ h² < 0.06; low impact: 0.06 ≤ h² < 0.14; medium impact: h² ≥ 0.14; high impact, (Cohen, 1988).

4. Findings
The curriculum orientations of pre-service teachers the mean and standard deviation of the five sub-scales of curriculum orientations are listed in Table 1.

Table 1. The mean and standard deviation of the curriculum orientations (N=805)

| Curriculum Orientations | N   | \( \bar{x} \) | ss  |
|-------------------------|-----|--------------|-----|
| Technological           | 6.62| 1.05         |     |
| Academic                | 6.28| 1.07         |     |
| Cognitive Process       | 805 | 6.71         | 1.08|
| Social reconstruction    | 6.19| 1.15         |     |
| Humanistic              | 6.87| 1.01         |     |

When the orientations of all students considered, one can observe that the mean on the humanistic subscale ranks highest, cognitive process ranks the second, technological subscale ranks the third, academic rationalism subscale ranks the fourth and the mean of social reconstruction subscale ranked lowest.
4.1. The effects of gender, class level and subject specialty

For gender, statistically significant differences were found for technological, cognitive and humanistic curriculum orientations. Men scored significantly lower than women on the Humanistic orientation, on technological orientation and on the academic orientation. Scores for gender through one sample independent T-test are shown in Table 2.

Table 2. Relationships between COI subscale means and gender

|                | Male n=177 | Female n=628 |
|----------------|------------|--------------|
|                | n          | X | SS | t   | p   | n² |
| Cognitive process | Male | 39.25 | 6.54 | -2.458 | .014* | .007 |
|                | Female | 40.60 | 6.44 |  |  |  |
| Humanistic     | Male | 39.51 | 6.20 | -4.33 | .000* | .022 |
|                | Female | 41.75 | 6.00 |  |  |  |
| Technological  | Male | 38.16 | 6.51 | -3.820 | .000* | .017 |
|                | Female | 40.21 | 6.29 |  |  |  |

* p< 0.05

For class level, MANOVA results of five sub-scales of the curriculum orientations indicate that there is a significant difference between classes in terms of sub-factors [Wilks' Lambda (λ) = 0866, F (15, 2200) = 7845, p <.001]. These findings show that scores obtained from the curriculum orientation have changed in accordance with the class level of pre-service teachers. Since MANOVA tests indicated that there were statistically significant effects, one-way within-subjects analysis of variance (ANOVA)'s on each subscale scores were conducted as follow-up tests. The mean, standard deviation values and ANOVA results based on class level of pre-service teachers are shown in Table 3. Stemming from the magnitudes of the impact, it can be inferred that gender has little role in lower levels of program orientation.

Table 3. Relationships between COI subscale means and class levels of pre-service teachers

|                  | First Grade n=287 | Second grade n=153 | Third Grade n=192 | Final Grade n=173 |
|------------------|------------------|--------------------|-------------------|------------------|
|                  | X | n  | X | n  | X | n  | X | n  | F  | Sig  | η² |
| Cognitive process | 7.02 | 6.75 | 6.50 | 6.41 | 15.85 | .000* | .043 |
| Social reconstruction | 6.26 | 6.40 | 6.01 | 6.08 | 4.32 | .005* | .089 |
| Humanistic       | 7.01 | 6.97 | 6.67 | 6.77 | 4.29 | .001* | .056 |
| Academic         | 6.64 | 6.40 | 5.97 | 5.90 | 26.20 | .000* | .016 |
| Technological    | 6.83 | 6.80 | 6.42 | 6.35 | 12.03 | .000* | .019 |

*Wilks Lambda (λ)= 0.906, F(25, 2954)= 3.176, p<.001

As shown in table 3, for class level, the ANOVA indicates that statistically significant differences were found for all sub-scales of the curriculum orientations. The pre-service teachers in first and second grades scored significantly higher on the Technological orientation [F(3, 801)=12.03, p<.001]; academic orientation [F(3, 801)=26.20, p<.001]; Cognitive process orientation [F(3, 801)=15.81, p<.001]; social reconstruction orientation [F(3, 801)=4.32, p<.01] and humanistic orientation [F(3, 801)=5.29, p<.001]. The values indicate that class level has low level impact on cognitive process and on humanistic, academic and technological orientations while it has medium impact on social reconstruction orientation.

For subject speciality, The MANOVA results indicate that statistically significant differences were found in the sub-scales of the curriculum orientations in terms of [Wilks Lambda (λ)= 0.906, F(25, 2954)= 3.176, p<.001]. This finding indicates that scores obtained from the curriculum orientation have changed in accordance with the subject speciality. The mean, standard deviation values and ANOVA results based on subject speciality of pre-service teachers are shown in Table 4.
Table 4. Relationships between COI subscale means and teachers’ academic disciplines

|                  | Turkish n=87 | Mathematic n=153 | Elementary n=143 | Science n=124 | Pre-School n=123 | English n=173 |
|------------------|--------------|------------------|------------------|---------------|------------------|--------------|
| Cognitive process| 6.92         | 6.31             | 6.70             | 6.75          | 6.95             | 6.78         |
| Social reconstruction | 6.40      | 5.88             | 6.16             | 6.17          | 6.41             | 6.23         |
| Humanistic       | 6.84         | 6.52             | 6.68             | 6.97          | 7.22             | 7.04         |
| Academic         | 6.52         | 6.05             | 6.17             | 6.44          | 6.36             | 6.28         |
| Technological    | 6.79         | 6.28             | 6.59             | 6.62          | 6.81             | 6.73         |

Wilks Lambda ($\lambda$) = 0.906, $F(25, 2954) = 3.176$, $p < .001$

As shown in Table 4, for subject speciality, the ANOVA results indicate that statistically significant differences were found for the curriculum orientations of technology [$F(5, 799) = 5.031$, $p < .001$]; academic [$F(5, 799) = 3.349$, $p < .01$]; cognitive process [$F(5, 799) = 6.622$, $p < .001$]; social reconstruction [$F(5, 799) = 3.885$, $p < .01$] and Humanistic orientations [$F(5, 799) = 9.291$, $p < .001$]. A Scheffe post hoc analysis of all sub-scales of curriculum orientations indicates that pre-service teachers in pre-school teaching scored significantly higher than pre-service teachers in Turkish, English language teaching, science teaching, mathematics teaching and class teaching students. A Scheffe post hoc analysis of all sub-scales of curriculum orientations also indicates that pre-service teachers attending mathematics teaching scored significantly lower than the other departments participated in the study. The magnitudes of impact indicate that the departments the candidate teachers have graduated from have low impact in the lower levels of program orientation.

4.2. Correlations among the five curriculum orientations

Table 5. Correlations among the five curriculum orientations

|                  | Academic | Cognitive process | Social reconstruction | Humanistic | Technological |
|------------------|----------|-------------------|-----------------------|------------|--------------|
| Academic         | -        | .595**            | .498**                | .446**     | .533**       |
| Cognitive process|          |                   | .657**                | .655**     | .642**       |
| Social reconstruction |      |                   |                       | .543**     | .545**       |
| Humanistic       |          |                   |                       |            | .683**       |
| Technological    |          |                   |                       |            |              |

Correlation is significant at the 0.01 level (2-tailed). **

The results shown in Table 5 indicate that there is moderate, positive and significant relationship between the all subscales of curriculum orientations. In particular, there is a high relationship between the technological and humanistic curriculum orientations ($r = .683$, $p < .001$). In other words, pre-service teachers adopting technological orientation also adopt humanistic curriculum orientation. The results also show that the lowest relationship is between academic and humanistic curriculum orientations ($r = .446$, $p < .001$).

5. Conclusion and Discussion

The curriculum of primary and secondary education is said to be focused on constructivist approach which has close connection between humanistic curriculum orientation and cognitive process orientation. In this study while the orientations of all students considered, humanistic orientation ranks highest and cognitive process ranks the second, which means that pre-service teachers’ curriculum orientations are compatible with the basic principles of the primary and secondary education curricula. In other words, pre-service teachers’ orientation is focused on developing skills in a variety of processes, including problem solving, decision making, critical thinking, and memory skills and they tend to provide students with opportunities in an open communicative setting to foster their personal development as unique individuals. However, their orientation is not focused on social issues from many viewpoints. It shows that they care about individualism rather than social issues. This study does agree with the
results of Eren (2010) and Bay et al. (2011) in terms of humanistic orientation but differs from these two studies in
terms of academic rationalism which ranks the lowest in their studies but ranks fourth in this study. This study
partly does agree with the results of Ng & Cheung’s (2002) study which indicated that science cognitive processes
orientation ranks the first for science pre-service teachers while it ranks second in this study.

In this study, significant differences are found for gender, class level and subject speciality. For gender, male
participants scored significantly lower than women on the humanistic orientation, on technological orientation and
on the academic orientation. As for gender differences, the results from this research differ from the researchers
conducted by Cheung and Wong (2002) and Bay et al (2011) which concluded that gender has minimal or no
influence on how a teacher prioritized his/her curriculum, and this study does disagree with the results of
Crummey’s study (2007) which indicated that men scored significantly higher than women on the technological
orientation. However, this study does agree with the results of Behets and Vergauwen (2004) in the field of physical
education and Jenkins (2009) which indicated that female teachers scored significantly higher than male teachers on
the curriculum orientation of self-actualization (humanistic orientation). This result is also consistent with the
historical (traditional) belief that women rather than men are better suited for teaching. In the literature reviewed for
this study there was no research found to discuss why women scored significantly higher than men with regard to
technological orientation and on the academic orientation. Further research should be conducted to explore this
relationship.

For class level, statistically significant differences were found for all of the curriculum orientation. The pre-service
teachers in first and second grades scored significantly higher on the all of the curriculum orientations. In other
words, pre-service teachers in the first and second grades have higher level curriculum beliefs than the third and
fourth pre-service teachers. They believe a curriculum should aim at developing students’ critical thinking skills;
should focus on learning process rather than content; should enhance social reconstruction; should provide each
individual with intrinsically rewarding experiences that contribute to personal liberation and development; and
should be objective-focused. Third and final grade students have lower level curriculum beliefs. Further research
should be conducted to explore the reasons behind this finding.

For subject speciality, statistically significant differences were found in the sub-scales of the curriculum
orientations. Pre-service teachers in pre-school teaching scored significantly higher than pre-service teachers in
Turkish, English language teaching, science teaching, mathematics teaching and class teaching students. This study
also indicates that pre-service teachers attending mathematics teaching scored significantly lower than the other
departments participated in the study. It is reasonable to believe that mathematics pre-service teachers in Turkey
may perceive mathematics as disciplinary knowledge compared to a tool for societal development. Further research
in this area is required to understand fully the discrete differences between teachers and pre-service teachers of
different subject specialities. Of the research reviewed for this study, there were no substantial discussions as to the
nature of the differences between teachers that teach within particular subject specialities. The difference between
Mathematics teachers and the others on the curriculum orientations is puzzling. The mathematics group had the
largest number of male participants in this study; as such, gender may be a confounding variable here. Further
research on curriculum orientations and its relationship to gender and subject speciality is needed.

The results of the study indicate that there is moderate, positive and significant relationship between all subscales
of curriculum orientations as also stated in the research conducted by Bay et al (2011). In particular, there is a high
relationship between the technological and humanistic curriculum orientations. In other words, pre-service teachers
adopting technological orientation also adopt humanistic curriculum orientation. The results also show that the
lowest relationship is between academic rationalism and humanistic curriculum orientations. A central finding of
this study is moderate relationships between the curriculum orientations as compared to strong positive
relationships, or complementary pluralism, as identified by Cheung and Wong and weak to moderate relationships,
as identified By Jenkins. The differences between this study and that of Cheung & Wong (2002) and Jenkins (2009)
are mostly the result of the cultural and historical differences in the development and maturation of the
educational systems in the United States, Hong Kong and Turkey.

Key findings of this study identify opportunities for further research and studies about pre-service and in-service
teachers’ curriculum orientation should be extended and enriched with other parts of schooling terms such as
teaching, learning, etc. Besides, relationship between curriculum orientation and the other belief systems of teachers
such as educational or epistemological beliefs will help researchers and curriculum developers to understand the effects of teachers’ belief system on the success of implementing a curriculum.

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