Curriculum orientations of pre-service teachers in Jordan: a required reform initiative for professional development

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The primary purpose of this study was to determine the curriculum orientations of pre-service teachers at a university in Jordan. Rigorous translation procedures were utilized to validate an Arabic version of the Curriculum Orientation Inventory (COI) for use in Jordan. The validated COI was administered to a sample of 259 pre-service teachers who were enrolled in the teacher education program offered by the Hashemite University. Principle axis factoring with oblique rotation resulted in a latent factor structure highly consistent with the English version of the COI. Results also indicated that pre-service teachers valued all the curriculum orientations to various degrees. In more specific terms, they highly valued the Cognitive Process orientation followed by the Social Reconstruction orientation and the Humanistic orientation. Lastly, gender differences were detected only for the Cognitive Process orientation with males valuing this orientation higher than did females.

Keywords: curriculum orientations; educational reform; pre-service teachers; Jordan

Introduction and theoretical framework

Concerns about the quality of education have attracted the attention of the global community. These concerns are considered to be the precursors to develop the quality of education provided by the school system. To this end, the field of education has witnessed several calls for reforming education and the whole process of teaching and teacher quality in schools (Khasawneh et al. 2008; Woodbury and Gess-Newsome 2002). On the national level, reform initiatives started in Jordan as early as in 2003 with the implementation of the Education Reform for the Knowledge Economy project, which has achieved great progress in the areas of curricular reform, as well as textbook development, general exams, national tests, the development of teachers, teaching strategies, and evaluation (Ministry of Education 2006). Further, several training programs for the professional development of all Jordanian teachers were conducted in the years 2005 and 2006 (Ministry of Education 2006). In May 2006, the National Teacher Professional Standards Conference was held for three days in Amman with participants from Ministry of Education and Jordanian universities, along with Canadian and Australian consultants. The aim was to develop a list of standards for teaching practice (e.g., self-development, planning

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and implementing instruction, academic knowledge, assessment of student learning, and professional ethics).

To date, these reform initiatives have not been completely effective because they lack a focus on an important area of the curriculum which is the teacher’s belief, way of thinking, or philosophy about the ultimate purpose of the curriculum, which is referred to in the literature as curriculum orientations. It is well documented in the literature that every individual involved in the school system brings with them a way of thinking or beliefs as to the very nature and purpose of education (Eisner 1985; Eisner and Vallance 1974; Schubert 1986; Tanner and Tanner 1995). These curriculum orientations may impact teachers’ thinking of the curriculum content of most merit, the curriculum intent (aims, goals, and learning objectives), teaching strategies, and evaluation strategies (Cheung and Wong 2002; Schubert 1986). Curriculum orientations may also influence students because the underlying values and beliefs of each orientation not only influence what is taught, but also how and why it is taught (Eisner 2002). Acknowledging the existence of varying curriculum orientations among pre-service and in-service school teachers is the first step toward a comprehensive curriculum reform initiative. Eisner and Vallance (1974) and Eisner (1985) noted that teacher beliefs about the purpose of curriculum (education) fall into five common orientations: Academic Rationalism, Cognitive Process, Curriculum as Technology (Behavioral), Curriculum for Self-Actualization (Humanistic), and Curriculum for Social Reconstruction.

**Academic Rationalism orientation**

Teachers that subscribe to the Academic Rationalism orientation believe in the traditional approaches to teaching where the nature of instruction should be teacher centered (Tanner and Tanner 1995). Under this orientation, the school curriculum should emphasize the intellectual growth of the student including rational thinking and inquiry skills through the study of particular academic disciplines (Cheung and Wong 2002) that provide concepts, issues, and cultural heritage of human beings. Schiro (2008) supported such views where he noted that the purpose of the Academic Rationalism orientation is to help students learn the accumulated knowledge of the national culture through studying the academic disciplines. In brief, since schools cannot try to teach everything, their genuine function is to help cultivate students’ intellect in order to acquire the most powerful products of human intelligence (Eisner 1985; Eisner and Vallance 1974).

**Cognitive Process orientation**

The Cognitive Process orientation is a problem-centered approach that considers the purpose of the curriculum to be the development and refinement of students’ cognitive skills to think for lifelong learning (Eisner and Vallance 1974). Under this orientation, students learn how to learn and are provided with the opportunities to nurture and refine the variety of cognitive thinking skills that they possess (Eisner 1985; Eisner and Vallance 1974). The teacher’s role is to help students succeed in society by learning the ability to infer, to think critically, and to define and solve problems (Eisner 1985). This orientation relies neither on content nor on specific objectives (the ‘what’ of education) as with the Academic Rationalism orientation. Instead, the subscriber to this philosophy is more interested in the process and long-term sustainability of learning skills (the ‘how’ of education).
Curriculum as Technology orientation (Behavioral)

The Behavioral Orientation conceptualizes the function of the curriculum as essentially one of finding efficient means to a set of predetermined learning objectives where ‘human beings are self-correcting communication systems that modify behavior in response to information about how successfully tasks are navigated’ (Joyce, Weil, and Calhoun 2000, 22). Under this orientation, teachers provide individualized instruction and students move through the curriculum at their own pace. This orientation to the curriculum, like the Cognitive Process orientation, focuses on process (concerned with the how of education). It differs from the Cognitive Process orientation in its focus of attention. It is concerned not with processes of knowing or learning, but with the technology by which knowledge is communicated and learning is facilitated (Eisner and Vallance 1974).

Curriculum for Self-Actualization (Humanistic)

The Humanistic orientation is child centered and growth oriented, where the purpose of the curriculum is to provide each student with intrinsically rewarding experiences that contribute to personal liberation and development (Eisner and Valance 1974). This curriculum orientation is the ‘attempt to shape education so that we come to understand ourselves better, take responsibility for our education, and learn to reach beyond our current development to become stronger, more sensitive, and more creative in our search for high quality lives’ (Joyce, Weil, and Calhoun 2000, 2). Under this orientation, students and the teacher work together to design the curriculum so that students play an important role in choosing what and how to study/learn and in generating their own educational goals; students evaluate their own work; and students’ feelings are important as facts (Huitt 2001). The teacher’s role is to create an environment where learning is not directed but explored in an open, communicative, and non-threatening environment, which promotes educational development and personal growth of the individual learner (Eisner 1985; Eisner and Valance 1974).

Social Reconstruction orientation

The Social Reconstruction orientation views the purpose of the curriculum as a vehicle to facilitate societal change. Under this orientation, students are provided with learning opportunities to develop levels of critical realization and responsibility for critically analyzing social problems faced by humankind and to do something about them in order to build a new and healthy society (Eisner 1985). According to Schiro (2008), the Social Reconstructionist says that the purpose of the curriculum is to facilitate the construction of a new and more just society that offers maximum satisfaction to its members. The goal of education resides in the society and the analysis of the society provides the base for the curriculum, which emphasizes that teaching should stress societal needs over individual needs (Eisner and Vallance 1974). The teacher’s role is to include important topics (e.g., pollution, corruption, and unemployment) to help students understand the problems confronting our society.

In reviewing the literature related to the curriculum orientations of teachers (pre-service and in-service), only a handful of studies were located. For example, Jenkins (2006) measured teachers’ beliefs of a sample of 308 elementary and secondary public school teachers from the United States about their curriculum orientations and how these relate to their demographic characteristics (gender, school
level, subject specialty, and teaching experience). The results of the study indicated that teachers valued all curriculum orientations in the following order: Humanistic, Cognitive Process, Behavioral, Academic Rationalism, and Social Reconstruction. Further, significant differences were found among the curriculum orientations based on the demographic characteristics of subjects. For example, men scored significantly lower than women on the Humanistic orientation; elementary school teachers scored significantly lower than secondary school teachers on the Social Reconstruction orientation and higher on the Humanistic orientation; teachers with more than 23 years of experience scored significantly higher on the Behavioral orientation and Cognitive Process orientation than teachers with less than five years of experience; and teachers in the math/science group scored significantly lower than teachers in the other groups on the Humanistic orientation.

Another study by Cheung and Wong (2002) gathered data from a sample of 648 primary and secondary school teachers in Hong Kong to determine their predominant curriculum orientations. Their research also looked at possible correlations among the five curriculum orientations as well as the relationship between the curriculum orientations and teacher demographics of gender, school level, subject specialty, and teaching experience. Results of the study indicated that teachers valued all five curriculum orientations in the following order: Behavioral, Humanistic, Cognitive Process, Social Reconstruction, and Academic Rationalism. With regard to the demographic characteristics of participants, significant differences were found for subject specialty and teaching experience. English teachers were more Humanistic in their orientation than science teachers; experienced teachers (20 or more years of experience) were more likely to subscribe to the Academic Rationalism orientation than their colleagues with less experience. Finally, gender and school level did not have any significant differences.

A study by Ryu (1998) identified the curriculum orientations of 268 Korean secondary school home economic teachers. The results of the study indicated that most participants agreed that the Cognitive Process orientation was their predominant curriculum orientation. Lee, Adamson, and Luk (1995) surveyed 28 student teachers and found that 14 of them valued the Cognitive Process orientation more than the other four orientations. Cunningham, Johnson, and Carlson (1992) studied 152 Nebraska home economic teachers and their curriculum orientations. Results indicate that Nebraska home economic teachers agreed most strongly with the Cognitive Process orientation followed by Humanistic, Social Reconstruction, Behavioral, and lastly Academic Rationalism orientations.

Statement of the problem
Curriculum orientations are considered one of the most needed reform movements of the twenty-first century. Although there is general realization that different curriculum orientations exist within the educational system, the extent to which teachers hold these curriculum orientations is not well documented in many parts of the world (with the exception of the United States, Hong Kong, and South Korea). To the researchers’ best knowledge, no empirical studies aimed at understanding teachers’ curriculum orientations exist in the Middle Eastern part of the world, especially Jordan. If educators want to improve teaching and learning in the school system, research on teachers’ curriculum orientations is essential (Cheung and Wong 2002). The importance of considering pre-service teachers in this study is derived from the
fact that they are regarded as change agents because of their updated knowledge that they have recently acquired. Therefore, the primary purpose of this study is to identify the curriculum orientation profiles of pre-service teachers participating in the teacher education programs at the Hashemite University in Jordan.

**Research questions**

This study is guided by the following research questions:

1. What are the psychometric properties of an Arabic version of the ‘Curriculum Orientation Inventory’ for use in Jordan?
2. What are the curriculum orientations of pre-service teachers participating in the teacher education program at the Hashemite University in Jordan?

**Significance of the study**

It is well documented in the literature that the curriculum orientations of teachers (pre-service and in-service) play an important role in the success of any reform movement. Understanding the philosophy, belief system, or ways of thinking of pre-service teachers about the purpose of the curriculum has important implications for theory and practice. Information gathered from this study will add to the existing body of knowledge related to curriculum orientations of pre-service teachers in Jordan and may be used as baseline for future studies locally and internationally. Moreover, the study findings will provide higher education institutions and the Ministry of Education (MOE) with a clear picture as to the value system pre-service teachers hold regarding the purpose of the curriculum (education) and how it may impact their teaching strategies, assessment strategies, content merit, and aims for students’ learning and society sustainability. Based on that, various efforts can be adapted by the university system to train pre-service teachers to value all the five curriculum orientations for the sake of developing better students and a more healthy society. Furthermore, the MOE may have an understanding of the philosophy of their prospective teachers regarding the purpose of the curriculum (education), which may serve as an indication of their effectiveness and the effectiveness of the higher education system.

**Method**

**Study context**

The Hashemite University, where the present study took place, is the fifth official university in Jordan. The Faculty of Educational Sciences started its programs at the beginning of the academic year 1995/1996, with the establishment of the university. Within this faculty, there is the Department of Curriculum and Instruction, which has various subjects such as languages, science, math, social studies, Islamic education, and vocational education. In the first semester of 1997/1998, the teacher education program was established as part of the Department of Curriculum and Instruction. The primary stakeholders involved in the program are pre-service teachers who attend schools in their last semester prior to graduation to practice teaching as it was learned from the university courses during the past three years. In these
hosting schools, pre-service teachers teach actual classes for a period of four months, Sunday through Thursday from 7:30 am to 1:15 pm. Finally, the Hashemite University was chosen for this study because of the following achievements: (a) it is the leader in incorporating distance education tools in teaching (e.g., Blackboard), (b) it has won first places in the Qualification Testing Examinations for several years among Jordanian public and private universities for the major of teacher education, and (c) it has won prizes as a distinguished university for its academic quality locally and internationally.

**Population and sample**
The target population for this study was defined as all university graduates from the Department of Curriculum and Instruction with a major in classroom teaching who participated in the teacher education program at the Hashemite University in Jordan. The sample of this study comprised 265 pre-service teachers who attended the teacher education program for the first and second semesters of the academic years 2008/2009. A total of 259 usable instruments were returned with a response rate of 95%. The sample distribution was 37 males (14.3%) and 222 females (85.7%).

**Instrumentation**
The instrument used to collect data in this study is the Curriculum Orientation Inventory (COI) (see Appendix 1), which was designed by Cheung and Wong (2002) in an English form. Items in this instrument are used to solicit information about the beliefs, philosophy, views, or ways of thinking of teachers about their curriculum orientations, which is grouped under five dimensions comprising 30 positively worded items as follow: Academic Rationalism (6 items); Cognitive Process (6 items); Behavioral (6 items); Humanistic (6 items); and Social Reconstruction (6 items). Responses on the COI ranged from: 1 = does not represent my views at all; 2 = minimally represents my views; 3 = represents my views somewhat; 4 = represents my views fairly well; and 5 = represents my views exactly. A panel of experts established the face and content validity of the instrument. Further, exploratory and confirmatory factor analyses established the construct validity of the instrument (Cheung 2000; Cheung and Woo 2002; Jenkins 2006). With regard to the reliability of the COI, Cheung and Woo reported that the coefficient alpha of the five subscales in the context of Hong Kong varied from 0.77 to 0.83. Further, Jenkins (2006) reported that the coefficient alpha of the five subscales in the context of the United States varied from 0.61 to 0.85. These figures suggest that the instrument is suitable to measure what it purports to measure.

**Instrument translation**
To ensure equivalence of meaning of the items and constructs between the Arabic and English versions of the COI, a rigorous translation process (Khasawneh, Bates, and Holton 2005) was used that included forward and backward translation, subjective and objective evaluations of the translated items, and pilot testing. The goal of the translation process was to produce an Arabic version of the COI with items that were equivalent in meaning to the original English version. Equivalent translations emphasize functional equivalence or the equivalence of meaning of items across the
original and translated instruments rather than word-for-word duplication. Functional equivalence is seen as increasing the likelihood the instrument will operate in a new target culture much as it did in the original culture in which it was developed. The translation process is summarized below.

**Forward and backward translation**
Two translators bilingual in English and Arabic separately translated the English version of the COI into Arabic (forward translation). These translators were instructed to retain both the form (language) and the meaning of the items as close to the original as possible but to give priority to meaning equivalence and they agreed to use common language in the translation. The two translations were then compared to assess the item-by-item consistency. In the case of discrepancies or disagreements, the items were discussed and revised until consensus was reached. When the Arabic translation was finalized, the instrument was then back-translated (from Arabic to English) by two other people bilingual in English and Arabic following the same comparison and revision process.

**Subjective evaluation**
The back-translated items were evaluated by a validation panel of three experts from the field of education who are fluent in both Arabic and English languages to ensure that the item meanings were equivalent in both the original English versions and the back-translated version. If differences in meaning were found between items, those items were put through the forward- and back-translation process again until the panel was satisfied there was substantial meaning equivalence.

**Objective evaluation**
Following the subjective evaluation, a more quantitative process was implemented in which a group of 10 fluent English speakers (faculty members who are graduates from Western countries including the United States, Britain, Canada, and Australia) rated the equivalence of meaning between the original COI items and the back-translated items. These reviewers compared the back-translated items with the original items and rated the functional equivalence of each pair using a 7-point Likert-type rating scale with anchors ranging from 1 (Not at all similar in meaning) to 7 (Very similar in meaning). Items with mean ratings below 4 would have been put through the forward-translation, back-translation and subjective evaluation process again. However, no mean ratings fell below this threshold.

**Instrument standardization**
The Arabic instrument was pilot tested with a group of 26 pre-service teachers, who were excluded from the main sample of the study. Changes recommended by the validation panel and those identified as needed during the pilot test were incorporated into the instrument. These changes occurred in the wording of some items. The internal consistency of the instrument was determined using the same group of participants used in the pilot study. The calculated coefficient alpha reliability for the COI was .90. The standards for instrument reliability for Cronbach’s alpha by
Robinson, Shaver, and Wrightsman (1991) were used to judge the quality of the scales of the instrument. These standards were: \( .80 - 1.00 = \) exemplary reliability, \( .70 - .79 = \) extensive reliability, \( .60 - .69 = \) moderate reliability, and \( < .60 = \) minimal reliability. Based on the above guidelines, the COI exhibited exemplary reliability. Therefore, this figure suggests that the instrument is suitable to measure the curriculum orientations of pre-service teachers in Jordan.

**Data collection**

The researchers met with all pre-service teachers participating in the study either on the Hashemite University campus or on the schools’ campus where the field training took place during the last two weeks toward the end of the first semester and the second semester of the academic years 2008/2009. Before handing out the COI instrument, the researcher explained to the participants the purpose of the study and encouraged them to read the statements carefully before ticking the appropriate choice. The participants were also assured of confidentiality, the voluntary nature of the study, and anonymity. Finally, instruments were handed out and collected in during those meetings. Participants were instructed that the instrument takes approximately 10–15 minutes to complete.

**Data analysis**

Prior to data analysis, pre-analysis data screening was performed to ensure the accuracy of the data and to deal with missing and incomplete data. Data were analyzed using the Statistical Package for Social Science (SPSS) version 11.5 for Windows. To answer the first research question, exploratory factor analysis (EFA) was used. EFA analysis is primarily used in the early stages of instrument development when the researcher is trying to determine the underlying structure of the instrument. Factor analysis is a multivariate statistical technique used to examine the intercorrelations among a large set of variables, and then attempts to find a smaller number of constructs that still capture those relationships (Ary, Jacob, and Razavieh 1996; Benson and Nasser 1998). The objective of EFA is to ‘reduce the number of dimensions necessary to describe the relationships among the variables’ (Gardner 2001, 243). In other words, EFA will uncover the underlying structure of the COI, thereby allowing understanding of the simple structure of the measuring instrument. There are certain steps to follow when using factor analysis. These steps include: extracting factors, deciding on how many factors to retain, and rotating factors to an interpretable and more meaningful solution.

In exploratory factor analysis, there are two methods of extraction: common factor analysis and principal component analysis. Principal component analysis is used for prediction (Hair et al. 1998; Nunnally and Bernstein 1994). It is less appropriate for exploratory use because a) it does not account for error variance and attempts to explain everything by placing ones on the diagonal of the correlation matrix as an estimate of communalities (meaning that all variance, even error, is appropriate to explain); and b) it attempts to ‘represent all of the variance of the observed variables’ (Floyd and Widaman 1995, 294). On the other hand, principal axis factoring (or common factor analysis) was more appropriate to use in this study because the purpose of the analysis is to uncover the underlying structure of the instrument. This method has the advantage of accounting for error variance when extractions
are made, uses squared multiple correlations of each variable with the remainder of the variables when calculating initial communalities, and places communalities on the diagonal of the input correlation matrix ‘to represent only the common variance of each variable’ (Floyd and Widaman 1995, 292) and to remove the unique (error) variance. Further, principal axis factoring produces more accurate estimates of cross-loadings, communalities, factor loadings, and factor correlations than does principal component analysis (Fabrigar et al. 1999).

The overall measure of sampling adequacy (MSA) for the whole data set was used to determine the appropriateness of factor analysis. Hair et al. (1998) suggested values above .90 to be excellent while values below .60 should be deemed unacceptable. When determining the number of factors to extract, the visual scree plot and an eigenvalue greater than or equal to one was used (Benson and Nasser 1998). An eigenvalue represents the total variance explained by the factor (Benson and Nasser 1998). Moreover, visual scree plots were consulted to determine the number of factors to extract. Once the factors have been extracted, the next step is to rotate them as an aid in the interpretation of those factors. The main goal behind factor rotation is to produce a simple structure (Gorsuch 1997) where each variable has the highest loading on its major factor, and the lowest loading on the remaining factors. Because the latent constructs in this study are expected to be correlated, a restriction placed on factors by orthogonal rotation, oblique rotation with direct oblimin was performed. With oblique rotation, the factor pattern matrix was used because the values are ‘standardized regression weights (betas) reflecting the relationship between the variable and a factor, after partialling out the relationship between the variable and the remaining factors’ (Benson and Nasser 1998, 27). The pattern matrix was more appropriate to examine than the structure matrix because ‘we are interested in the unique variance accounted for by each factor’ (Morgan and Casper 2000, 310). Finally, items were considered for retention on factors when they have a loading value above .30.

To answer the second research question, descriptive statistics including means and standard deviations were utilized to report mean data overall and for each dimension. The mean is the ‘most widely used measure of central tendency, it is the sum of all the values in distribution divided by the number of cases’ (Ary, Jacobs, and Razavieh 2002, 128). The standard deviation basically indicates the variability between the values in distribution around the mean.

Results

Construct validity of the COI

The first research question asked, ‘What are the psychometric properties of an Arabic version of the “Curriculum Orientation Inventory” for use in Jordan?’ Principle axis factoring was performed utilizing the oblique rotation method to uncover the underlying structure of the COI. Before conducting EFA, the data were screened in several ways to ensure their normality and appropriateness for factor analysis. With respect to normality, visual inspection of the histogram, mean, median, mode, skewness, and kurtosis for each item and for the whole data shows that the data were normally distributed. With regard to the appropriateness of the data for factor analysis, two statistical tests (overall MSA and the Bartlett Test of Sphericity) were conducted. The MSA is an index used to determine the appropriateness of the data for factor analysis (Hair et al. 1998). The MSA assesses the degree of intercorrelations among variables and
provides information about the appropriateness of the data for factor analysis. An MSA value above .85 is considered meritorious. On the other hand, the Bartlett Test of Sphericity measures the ‘overall significance of all correlations within a correlation matrix’ (Hair et al. 1998, 88). The null hypothesis states that there is no factor structure for the data at hand and then the goal is to reject the null hypothesis. A p-value below .05 indicates that there is a factor structure for the data and it is appropriate to run factor analysis. The results of the MSA (.91) and the Bartlett Test of Sphericity ($p < .05$) indicated that the data were suitable for factor analysis. Another indication of the factorability of the data set was the item-to-respondent ratio, which was about 8:1. As a general rule, the minimum item-to-respondents ratio should be 5:1 (Hair et al. 1998). It is also desirable to have at least three items loading on each factor, which was satisfied in the present investigation.

To justify the application of factor analysis, it is important to ensure that the correlations of the data matrix for the variables have a substantial number of correlations above .30 (Hair et al. 1998). Visual inspection of the data matrix revealed a substantial number of correlations greater than .30. Moreover, the anti-image correlation matrix (with negative partial correlations) indicated a low partial correlation between the variables. The anti-image correlation matrix is important to consider because it includes information about partial correlations. Low partial correlations suggest ‘true’ underlying factors exist because the variables can be explained by the factor that loads on each variable. Finally, there are certain assumptions associated with factor analysis. These assumptions are multivariate normality, homoscedasticity, and linearity. According to Hair et al. (1998), these assumptions are more conceptual than statistical. Only multivariate normality is necessary if a statistical test is applied to the significance of the factors. The Bartlett Test of Sphericity with $p < .05$ confirmed this assumption.

Exploratory factor analysis procedures were completed for the purpose of identifying the latent constructs underlying the data. The criteria for determining how many factors to extract included the eigenvalue greater than one rule and a visual inspection of the scree plot (Ary, Jacobs, and Razavieh 1996). The initial analysis was run without specifying how many factors to retain. This procedure resulted in five factors explaining 65.78% of the common variance (see Table 1). These factors paralleled those suggested by Cheung and Woo (2002) to assess curriculum orientations of teachers.

Items were retained on factors if they had a minimum loading of .40 but were not retained if they had a cross-loading above .20. Using these criteria, 29 items of the original 30 items were retained on the COI as was suggested by previous research (Cheung and Woo 2002; Jenkins 2006). In sum, loading of items was characterized by interpretable simple structure, meaning that it has high loadings on one factor and minimum cross-loadings on the rest of the factors. Factor loadings for items retained in this solution ranged from .59 to .95 with an average loading of .70 on the major factor and .05 on the rest of the factors. All factors had an acceptable reliability ranging from .85 to .97, with an average alpha of .90.

**Curriculum orientations of pre-service teachers**

The second research question asked, ‘What are the curriculum orientations of pre-service teachers participating in the teacher education program at the Hashemite University in Jordan?’ Means and standard deviations were used to accomplish this
research question. Table 2 presents means and standard deviations for each curriculum orientation ranked by the highest mean value. The scoring and interpretation of pre-service teachers’ categorization of their curriculum orientation was based on means. Means for this part of the study were interpreted using the following scale: 0.00–1.49 = no orientation, 1.50–2.49 = minor orientation, 2.5–3.49 = moderate orientation, 3.50–4.49 = high orientation and 4.5 and above = very high orientation. As shown in the table, the mean of the Cognitive Process orientation is higher than all other means (3.77), followed by the Social Reconstruction orientation (3.74), and the Humanistic orientation (3.68). These values indicate that pre-service teachers are highly oriented toward these three curriculum orientations in order of significance. However, pre-service teachers are moderately oriented toward the Behavioral orientation (3.29) and Academic Rationalism orientation (3.18). Overall, these results indicate that pre-service teachers in Jordan value all curriculum orientations to various extents.

**Discussion**

The primary purpose of this study was to determine the curriculum orientations of pre-service teachers in Jordan and how these curriculum orientations varied across gender. In order to conduct this study, rigorous procedures were performed to establish a valid and reliable Arabic version of the Curriculum Orientation Inventory for use in Jordan. The results of the factor analysis indicated that five latent factors with 29 items emerged from the Jordanian data that closely matched those factors.
found in the original COI (Cheung and Woo 2002). These results are consistent with another cross-cultural instrument validation research done with the COI. For example, Jenkins (2006) validated the COI in the United States with a sample of 308 elementary and secondary public school teachers. The results of the factor analysis showed that the five factors with 30 items were valid and reliable in the United States (reliabilities ranging from .61 to .85) and were similar to the original factors found in the COI. Taken together with the results of the present study, these findings suggest that the constructs assessed by the COI may be robust across cultures.

With regard to the curriculum orientations of Jordanian pre-service teachers, results indicated that pre-service teachers valued each of the five curriculum orientations to various degrees with means on a 5-point scale ranging from a low of 3.18 to a high of 3.77. As indicated by previous research (Cheung and Woo 2002), the five curriculum orientations are mutually harmonizing rather than mutually exclusive, meaning that teachers may value multiple orientations toward the curriculum. To elaborate on these results, it appears from the data that pre-service teachers in Jordan value with high degree the Cognitive Process orientation followed by the Social Reconstruction orientation and the Humanistic orientation. It is obvious that pre-service teachers’ first concern is the Cognitive Process orientation, where they perceive the primary purpose of the curriculum is to develop students’ cognitive skills such as memorizing, hypothesizing, problem-solving, analyzing and synthesizing, which can be applied to learning virtually anything (lifelong learning). Moreover, pre-service teachers emphasize that the curriculum should also focus on fostering students’ ability to critically analyze societal problems (e.g., pollution, population explosion, and energy shortage) and to take actions to establish a new and healthy society (problem-based approach). Further, pre-service teachers valued the Humanistic orientation in that the goal of the curriculum should focus on students’ personal development (e.g., self-confidence, motivation, and self-concept) and on their interests and needs in a learning environment filled with love and emotional support. These results are consistent with previous research emphasizing the Cognitive Process as the most favored orientation followed by the Humanistic and Social Reconstruction orientations (Lee, Adamson, and Luk 1995). Further, these results closely match the views of Miller (1983) in that ‘most teachers do not adhere to one orientation. In fact, many teachers whom I have worked with tell me they like to draw on several orientations. In most cases, they work from a cluster of two or three orientations’ (181). These results and views are also justified by the fact that the educational system in Jordan emphasizes the mind of the learner, the learning environment, and the society at large. In other words, individual and societal needs are equally considered.

The other curriculum orientations that pre-service teachers are moderately oriented toward were the Behavioral and Academic Rationalism orientations. It appears that pre-service teachers moderately perceived that the purpose of the curriculum should focus on finding efficient means to a set of predetermined learning objectives, such as the use of the internet and mastery learning. Lastly, pre-service teachers perceived the purpose of the curriculum to allow students to acquire the most important products of the national culture. It is obvious that these two orientations are valued last according to pre-service teachers. These results closely agreed with previous research (Jenkins 2006). In sum, Jordanian pre-service teachers draw from multiple orientations to form their curriculum beliefs.
Conclusion and recommendations

Based on the above discussion, the researchers concluded that all curriculum orientations are valued to various degrees. A number of practical and theoretical recommendations are provided for the field of study. From the practical standpoint, the Ministry of Education should take immediate reform initiatives which emphasize the curriculum orientations of all teachers in Jordan. For example, the MOE could first use the COI to assess and evaluate the curriculum orientations of all teachers (primary and secondary levels). Second, the MOE could hold regular workshops to train and install the values provided by the five aforementioned curriculum orientations in each teacher’s mind and to refine the curriculum, the guide, and the supporting materials as it sees fit. Third, the MOE may adjust the promotional system of teachers and base it on their ability to value all the curriculum orientations to various degrees.

The university systems in Jordan should make sure that their programs of classroom teaching emphasize important values related to each curriculum orientation. It is recommended that university administrators require each Dean from the college of education to conduct needs assessment of their programs. Based on that, committees, seminars, and workshops could be utilized to incorporate each orientation to various degrees in the development of curriculum materials. All that could lead to improvements in the teacher education program. Moreover, teachers could benefit from understanding their own orientation and take initiatives to reinforce or enhance it. Further, teachers could start to evaluate their own teaching practices related to each curriculum orientation.

From the theoretical standpoint, longitudinal studies should investigate changes in the curriculum orientations of pre-service teachers over time (during practicum training vs. during in-service teaching). Moreover, additional research is needed to investigate the curriculum orientations of primary and secondary in-service public school teachers in Jordan. Further, demographic variables could be investigated to determine differences in curriculum orientations based on gender, school type, subject taught, and teaching experience. Comparison studies could be undertaken to determine curriculum orientations of private and public school teachers in Jordan.

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Appendix 1. The Curriculum Orientation Inventory (COI) scales and items

<table>
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<th>Orientation</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Rationalism</td>
<td>(1) Allowing students to acquire the most important products of our culture is a top priority of the school curriculum.</td>
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<td></td>
<td>(2) The most important curriculum contents for primary school students should be subject knowledge.</td>
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<td></td>
<td>(3) Curriculum should require teachers to transmit the best and the most important subject contents to students.</td>
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<td></td>
<td>(4) It is important to assess the extent to which students have acquired the best subject knowledge.</td>
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<td></td>
<td>(5) Subject knowledge is the basis for designing a high-quality school curriculum.</td>
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<td></td>
<td>(6) Curriculum should stress refinement of students’ intellectual abilities.</td>
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<tr>
<td>Cognitive Process</td>
<td>(1) The basic goal of curriculum should be the development of students’ cognitive skills, such as memorizing, hypothesizing, problem-solving, analyzing and synthesizing, which can be applied to learning virtually anything.</td>
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<tr>
<td></td>
<td>(2) Methods of enquiry are the most important content for primary school curricula.</td>
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<td></td>
<td>(3) Curriculum should first let students master the cognitive skills (e.g., deducing, analyzing, critical thinking) and then the teacher may teach conceptual knowledge.</td>
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<td></td>
<td>(4) During the teaching-learning process, it is important to give students opportunities to think about problems.</td>
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<td>(5) Assessing students’ levels and forms of thinking as well as their ability to explore knowledge is most important.</td>
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<td></td>
<td>(6) Curriculum should require teachers to teach thinking skills systematically.</td>
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<tr>
<td>Social Reconstruction</td>
<td>(1) Assessment of students should emphasize civic awareness, problem-solving skills, and decision-making skills.</td>
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<td></td>
<td>(2) Students learn best when permitted to analyze, investigate and evaluate authentic societal problems.</td>
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</table>

(Continued)
### Appendix 1. (Continued)

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Items</th>
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<tbody>
<tr>
<td><strong>Orientation Items</strong></td>
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<tr>
<td>(3) Existing problems in our society, such as pollution and population explosion, should be the organizing center of curriculum.</td>
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<tr>
<td>(4) Curriculum contents should focus on societal problems such as pollution, population explosion, energy shortage, racial discrimination, and crime.</td>
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<tr>
<td>(5) The most important goal of the school curriculum is to foster students’ ability to critically analyze societal problems.</td>
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<tr>
<td>(6) Curriculum should let students understand societal problems and take action to establish a new society.</td>
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<tr>
<td><strong>Humanistic</strong></td>
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<tr>
<td>(1) Teachers should select curriculum contents based on students’ interests and needs.</td>
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<tr>
<td>(2) Students’ interests and needs should be the organizing center of curriculum.</td>
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<tr>
<td>(3) During the teaching process, teachers should frequently check whether students are provided with opportunities to integrate their affective, cognitive, and psychomotor developments.</td>
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<tr>
<td>(4) Students learn best in learning environment filled with love and emotional support.</td>
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<td>(5) In addition to academic achievements, instructional assessment should also emphasize students’ personal development such as self-confidence, motivation, and self-concept.</td>
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<td>(6) Curriculum should try to provide satisfactory learning experiences for each student.</td>
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<tr>
<td><strong>Behavioral</strong></td>
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<tr>
<td>(1) Selection of curriculum content and teaching activities for every school subject should be based on the learning objectives.</td>
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<tr>
<td>(2) Teaching should focus on finding efficient means to a set of predetermined learning objectives, such as the use of internet and mastery learning.</td>
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<tr>
<td>(3) For curriculum design, the main function of instructional assessment is to find out the extent to which students have attained the intended learning objectives.</td>
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<tr>
<td>(4) Learning should occur in certain systematic ways.</td>
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<tr>
<td>(5) Curriculum design should start with stating learning objectives.</td>
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</tbody>
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