

Curriculum Orientation and Teaching Conception among Islamic Elementary Public School Teachers in Indonesia: A Rasch Analysis Approach

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Abstract

The purpose of this quantitative research was to examine whether there were statistically significant differences in Islamic elementary public school teachers' curriculum orientation and teaching conception across demographic variables of gender, age, and teaching experience. Data were collected through questionnaires from 65 Islamic elementary public school teachers. Data were analysed through Rasch analysis and tests of inferential statistics. The results of the data analysis show that, over all: 1) the teachers' curriculum orientation tended to be "technological" and "academic" rather than "social reconstructionistic"; and 2) the teachers tended to conceptualize teaching as "apprenticeship-developmental" and "knowledge transmission" rather than "nurturing" or "social reform". Tests of inferential statistics revealed a significant difference between male and female teachers' conception of teaching. A significant difference was also found in the teachers' curriculum orientation across the demographic variable of teaching experience. No significant difference was found across the variable of age. Correlations were identified between the teachers' curriculum orientation and teaching conception. The findings of this study provide evidence for policy makers, school leaders, researchers, parents, and

teacher educators that the curriculum orientation and teaching conception of the majority of the teachers seems to be incompatible with the nature of character education that necessitates teachers to be "nurturing" and "social reconstructionistic". In addition, evaluation and reorientation of paradigms and approaches in teacher education and educational objectives and further research are suggested.

Keywords: Curriculum orientation, teaching conception, Rasch analysis, psychological measurement

Introduction

Teachers come to the classroom with some established beliefs on the nature of their work, students, and other aspects of their profession (Marouchou, 2011; Pajares, 1992). Research (Kavanoz, 2006; Handal & Herrington, 2003; Schommer, 1994; Lynch, 1989; Rose & Medway, 1981) has identified a relationship between these beliefs and teachers' practices, and, consequently, student's learning. Among those beliefs are their curriculum orientation and conception of teaching. Curriculum orientation (CO) are "a set of value premises from which decisions about curriculum

objectives, content, organization, teaching strategies, learning activities and assessment modes are made” (Cheung & Ng, 2000, p.1) and conception of teaching (COT) are “specific meanings attached to teaching and learning phenomena, which are claimed to then mediate a teacher’s view of, and responses to, their teaching context” (Devlin, 2006, p.112). These have been recognized as two psychological constructs related to teacher’s professional undertaking of their duties. Therefore, studying these constructs held by teachers would provide a way for understanding their practices based on how teacher development could be designed.

Additionally, research indicates that teacher’s CO and COT are contextual and cultural in nature (Gao & Watkins, 2002; Engeström, 1999; Raymond, 1997), suggesting that teachers in different contexts and cultural backgrounds exhibit different trends in their CO and COT. However, despite the availability of research on the two constructs in other contexts, to date, no such studies have been conducted on Indonesian teachers. This has led to an absence of information on the issue for teachers. In addition, so far there is no study that has tried to define the relationship between teachers’ CO and COT. This study seeks to fill this gap. Focusing on the Islamic elementary public school teachers of the regency of Kerinci, Jambi Indonesia, this quantitative research seeks to (1) find out the dominant CO and COT held by teachers, (2) determine whether there are statistically significant differences in their CO and COT across demographic variables of gender, age, and teaching experience, and (3) to identify correlations between CO and COT.

Literature Review

Curriculum Orientations

A variety of COs have been introduced (Cheung & Ng, 2000; Miller, 1983) at least with two other different terms, namely curriculum value orientation (Marsh, 2009; Ennis, 1992; Gillespie, 2003), and curriculum conception (Klein, 1986). However, these terms essentially refer to the same construct. Marsh (2009), Gillespie (2003), Cheung and Ng (2000) suggest that CO determines the type of contents, teaching strategies, and assessments that teachers select, and their willingness to enact a curriculum. They argue that in order for a curriculum change to be effective, it must first be preceded by change in teachers’ CO.

One of the earliest attempts to map teacher’s CO was made by Eisner and Vallance (1974). They proposed a five-category model of teachers’ CO, including cognitive process orientation, technological orientation, self-actualization orientation, social reconstructionist orientation, and academic rationalist orientation. The cognitive process orientation focuses on developing students’ cognitive skills and intellectual capacity, while the technological one views curriculum as a means for achieving a pre-determined objective of learning. The third orientation, self-actualization, and the fourth, social reconstructionist, sees a curriculum as a medium to facilitate students in discovering and developing their unique identities. The fifth orientation, academic rationalist, sees that curriculum should contain and aim at passing on the body of knowledge that has proven beneficial in advancing human civilization to the young generation.

Later, Ennis (1992), drawing on the works of several curriculum researchers, proposed another categorization that also consists of five orientations, including disciplinary mastery, self-actualization, learning process, social reconstruction and ecological integration. Overall, these orientations basically share the nature of Eisner and Vallance's (1974) COs, except for the fifth, ecological integration, that seeks to balance the development of students and society. Additionally, Gillespie (2003) highlights the role of a teacher's initial academic training in shaping the curriculum perspective/value orientation he/she adopts. In addition to this, he lists other factors, including teacher philosophy, teacher education, professional development, life experiences, curriculum, colleagues, schools and reflective practices.

As part of an attempt to measure teachers' CO, Cheung (2000) develops a 20-item curriculum orientation inventory based on four orientations, i.e., academic, humanistic, technological, and social reconstruction. Referring to Gao & Watkins (2002), Engeström (1999), and Raymond (1997) suggest that CO and COT are contextual and cultural in nature, Brown (2006) tried out the inventory on New Zealand and Queensland teachers. They found that the academic and humanistic orientations were highly correlated. Therefore, these orientations are collapsed resulting in a three-factor (orientation) model with 8-items comprising academic, social-reconstruction, and technological orientations. The present study used this later model.

Conceptions of Teaching

Regarding the conceptions of teaching, Borg (2003) defines COT as, "What teachers know,

believe, and think" (p.81), while Kember (1997) suggests that the term refers to teachers' overall view of the process of teaching. Gao and Watkins (2002) agree that "a teacher's conception of teaching acts as a framework through which that teacher views, interprets, and interacts, with his/her teaching environment" (p.61). Within this conception, other researchers (Pajarares, 1992; Hashweh 1996; Clark & Peterson, 1986; Marland, 1995, 1998, Ho et al., 2001, Marouchou, 2011) suggest that COT affects teachers' judgement and decision making, and, consequently, their classroom practices. Additionally, several research-based models of COT have been introduced. Prosser & Trigwell (1999) developed a COT with six categories, including teaching as transmitting concepts of the syllabus, teaching as transmitting the teacher's knowledge, teaching as helping the student acquire concepts of the syllabus, teaching as helping students acquire the teacher's knowledge, teaching as helping students develop conceptions; and teaching as helping students change conceptions.

One previous study on the conceptions of teaching was done among teachers in China, by Gao and Watkins (2002) who identified five teaching conceptions which are labelled as knowledge delivery, exam preparation, ability development, attitude promotion, and conduct guidance. In addition, Pratt (1998) proposed a COT consisting of five features: perspectives-transmissions, apprenticeship, developmental, nurturing, and social reform. The transmission perspective conceptualises teaching as an act of transmitting a body of knowledge and skills by teachers to students, while the apprenticeship perspective sees teaching as facilitating learning in real situations where students are assigned authentic tasks to learn from. The developmental

perspective develops on learners' prior knowledge and aims at restructuring how students think through inquiries, questioning and 'bridging' knowledge. The nurturing perspective facilitates the development of students' self-concepts and self-efficacy which are believed to be essential for their achievement, and approaches teaching in a holistic manner; viewing teaching not just for developing students' intellectual capability. The last perspective, social reform, insists that teaching should be, in the end, aimed at social change which is more important than individual learning.

Brown and Lake (2006) tried this model in their research on New Zealand and Queensland teachers and found that a four-perspective model that combines apprenticeship and developmental fits better than the five-perspective one. The current study used this four-perspective model of Pratt's (1998) COT. Kember (1997) suggests that despite the existence of several models of COT, they basically contain teaching perspectives that span on a continuum from the most teacher-centred perspective on one extreme to the most student-centred on the other. In addition, research done by Cheung and Wong (2002), Kember and Gow (1994), and Miller (1983) showed that teachers might hold more than one orientation or conception which might also be contradictory to each other, and experience as student and student teacher is believed to play a significant role in shaping a teacher's COT (Christensen, et al., 1995).

Methods

Participants

The participants of this study were sixty-five

Islamic elementary public school teachers' who were involved in the government funded in-service teachers undergraduate degree training program called "Dual Mode System" at the State Islamic College of Kerinci, Indonesia. Of the sixty-five Islamic elementary public school teachers, 50 were female and 15 were male. The age ranged from 20 to 50 years. In terms of teaching experience, thirty-two teachers had less than 1 year to 10 years of teaching experience, seven teachers had teaching experience of between 11 and 20 years, twenty-five teachers had teaching experience of between 21 and 30 years, and only one teachers had teaching experience of 30 years and above, hence excluded from data analysis.

Data Collection and Analysis

The data for this study were collected through the administration of Cheung's (2000) 8-item curriculum orientation inventory and Pratt and Collins' (2001) 11-item teaching perspective inventory. Both instruments were translated into the Indonesian language with some minor wording adjustments as the original versions were in English. However, the back-translation technique (Indonesian version to English version) was not employed after the English-Indonesian translation in this study. Data were analyzed by using the Rasch analysis and tests of inferential statistics (i.e. Mann-Whitney U and Kruskal-Wallis tests) and were conducted in two stages. In the first stage, the psychometric properties of the instruments and responses were evaluated for the validity and reliability of the study, while the second stage sought to answer the research questions.

Specifically, the adoption of the Rasch

analysis in this study is based on the fact that it has the necessary features needed to successfully address the quantitative research. First, it facilitates the conversion of the questionnaire's non-linear ordinal data into interval ones and measure them on a common linear logit scale (Wright, 2000). Second, the Rasch analysis is sensitive to idiosyncrasies of the subjects and items. For example, it gives information about the unique values of individual thresholds among categories in each item of polytomous data (Bond & Fox, 2001). In this way, wider access will be available, not only for better information about the subject's ability and item difficulty, but also for a more precise and comprehensive identification of the nature of the subjects and items. Third, the Rasch analysis allows evaluation even though the participants do not answer every item. Fourth, it also simplifies communication of results in the form of graphical summaries of population and detailed individual profiles in a way that would be easily understood and interpreted by educators, policy makers and the concerned public (Wright, 2000). Research also shows that Rasch analysis is easy to apply in a wide variety of situations (Connolly, Nachtman, & Pritchett, 1971; Woodcock, 1974; Wilmott & Fowles, 1974; Rentz & Bashaw, 1975; Andrich, 1975; Mead, 1976). In this study, data analysis was conducted using Rasch analysis software called WINSTEPS (Linacre, 2006).

Results

Preliminary Analyses

Bond and Fox (2001) suggest that to assess the validity of a set of measure in Rasch analysis,

one needs to examine the extent to which all the items work together to measure a single construct or variable. This information is given by two indices: Item Polarity that indicates the extent to which the items are working in the same in direction on the construct being examined, and Item Fit Statistics that shows the extent to which the items are contributing in the same meaningful or useful way to the construction of the construct. Information on item polarity is given by values denoted by Point Measure Correlation which has a range of -1 to +1. The directionality of the items is indicated by positive values (Linacre, 2006). Examination of this index for both COs and COTs scales shows that all the items have positive values, indicating that they are working in the same direction on the constructs being examined.

Pertaining to Item Fit Statistics, Linacre (2006) suggests that items that are productive for measurement would have an Outfit and Infit Mean-Square of 0.5 to 1.5. In this study, except for item 11 of the COTs scale whose Infit Mean-Square is 1.68, all other items in both scales have an Infit Mean-Square that is within the acceptable range of 0.5 to 1.5. Regarding item 11, some amount of item misfit is not unexpected in Rasch analysis. Smith (1991) suggests that up to 5% of items are expected to misfit by chance. Misfitting items could be associated with those items behaving differently with different group of people (Bond & Fox, 2001). Therefore, item 11 is retained in this study.

The assessment of Reliability in Rasch analysis is conducted by examining item ordering, that is by examining the consistency between empirical item order and the theoretical or experimental basis for item development (Bond and Fox, 2001). Two indices were used to evaluate this. First, Item Reliability Index, and,

second, Item Separation Index. Item Reliability Index indicates the reproducibility of item ordering, whereas Item Separation Index shows the extent to which the items are separated to define a continuum of increasing intensity. The Item Reliability Index of the COs and COTs scales are .93 and .91 respectively. These are considered very high, suggesting that a high probability of a similar order of item difficulty would be produced if the sets of scales are administered to other comparable samples. Item Separation Index of 3.58 for the COs scale indicates that the items can be classified into 3.5 levels of difficulty, while Item Separation Index of 2.95 for the COTs scale indicates that the items can be classified into almost 3 levels of difficulty.

The Dominant CO and COT Held by Teachers

Information on the dominant CO held by the teachers is visualized in Figure 1. The information is presented in logit scale along with the mean measure of each of the COs. A higher location for a CO on the scale indicates a lower endorsability or agreement by the teachers with that CO, therefore, a less dominant CO. In contrast, a lower location for a CO on the scale indicates a higher

endorsability or agreement by the teachers with that CO, therefore, a more dominant CO.

Figure 1. shows that the most dominant CO held by the participants is technological (Mean Measure=-0,425), the second most dominant CO is academic (Mean Measure=-0.146), and CO that the participants agree with the least is social reconstruction (Mean Measure = 0.433).

Information on the dominant COT held by the teachers is visualized in Figure 2. Similar to that of CO, the information is also presented in logit scale along with the mean measure of each of the COT. Interpretation of locations of the COTs on the logit scale also follows that of CO. Figure 2 indicates that, overall, the teachers held two almost equally dominant COTs, i.e., transmission (Mean Measure -0.254) and apprenticeship-developmental (Mean Measure=-0.243). They seem to favour nurturing (Mean Measure=0.153) and social Reformist (Mean Measure: 0.253) less than the previous two COTs.

Participants' CO and COT Across Relevant Demographic Variables

Gender. Of the 65 participants, 50 were female and 15 were male. Mann-Whitney U test

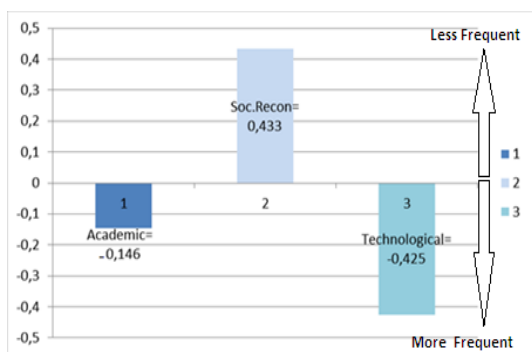


Figure 1. Measures of Islamic elementary public school teachers' COs

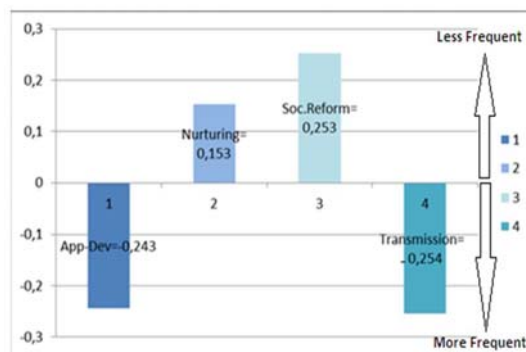


Figure 2. Measures of Islamic elementary public school teachers' COTs

showed that there was no significant difference between female and male participants in their CO, $U=338.5$, $Z=-.466$, $p>0.05$ (Academic), $U=295.5$, $Z=-1.145$, $p>0.05$ (Social Reconstructionist), $U=326.5$, $Z=-.555$, $p>0.05$ (Technological). Significant differences were found in their COT; Apprenticeship-Developmental: $U=200$, $Z=-2.695$, $p=, 0.007$, and Nurturing: $U=193$, $Z=-2.786$, $p=, 0.005$, where female participants (Mean Rank = 29.08 and 28.94) tended to endorse the two conceptions more than their male counterparts (Mean Rank =43.67 and 44.13).

Age. For data analysis purpose, the age of the participants was categorised into four categories. Category 1 was for those who were 20 to 29 years old. There were 9 (13. 8%) participants who fell into this category. Category 2 was for participants who were 30 to 39 years old, and there were 19 (29. 2%) the participants in this category. Those who were 40 to 49 years old and 50 and over were in category 3 and 4 respectively. There were 24 (36. 9%) participants in category 3, and 12 (18. 5%) participants in category 4.

Result of the Kruskal-Wallis test indicated that was no significant difference in the r participants' COs across the four age categories; Academic: $H=1.776$. 3 d.f., $p>0.05$; Social Reconstructionist: $H=2.628.3$ d.f., $p>0.05$; Technological: $H=3.455.3$ d.f., $p>0.05$. Similarly, no significant difference was found in the participants' COT across the four age categories: Apprenticeship-Developmental: $H=6.110$. 3 d.f., $p>0.05$; Nurturing: $H=2.295$. 3 d.f., $p>0.05$; Social Reformist: $H=.250$. 3 d.f., $p>0.05$; and Transmission: $H=2.893.3$ d.f., $p>0.05$.

Teaching Experience. The length of

participants' teaching experience spans from less than one year to more than thirty years. For the purpose of data analysis, their teaching experience was categorized into four categories, namely Category 1 (less than 1 year to 10 years), with thirty-two teachers in the category; Category 2 (11 to 20 years) with seven teachers; Category 3 (21 to 30 years) with twenty-five teachers; and category 4 (30 years and above) with only one teacher, hence excluded from data analysis.

The results of Kruskal-Wallis non-parametric test on the participants' CO across the four age categories indicated a significant difference in the Social Reconstruction category. Orientation, $H=9.021.2$ d.f., $p=0.011$, where participants in Category 2 with 11 to 20 years of teaching experience, Mean Rank= 47.71, tended to endorse this orientation less than those in Category 1 (less than 1 year to 10 years), Mean Rank= 33.20, and Category 3. (21 to 30 years), Mean Rank=25.52. No significant difference, however, was found in the other COs and COT as well.

Correlation Between COs and COT

Significant correlations were found between Academic CO with, first, Apprenticeship-Developmental COT, $r=0.345$, $p=0.005$, and, second, Social Reform COT, $r= 0.289$, $p=0.020$; and between Technological CO and, Apprenticeship-Developmental COT, $r=0.33.5$, $r=0.007$ and Transmission COT, $r=0.301$, $p=0.016$.

Discussion

Two of the significant findings in this study were the information about the participants' CO

and COT. As previously noted, overall, the CO and COT that received the most endorsement by the participants were technological and transmission and apprenticeship-developmental respectively. The prevalence of these CO and COTs among the participants was supported by results of the correlational tests presented in the previous section where technological CO correlated with both transmission and apprenticeship-developmental. Putting the technological CO and transmission COTs into Kember's (1997) multiple level model of COT that conceptualizes teacher's teaching conception to span on an continuum from 'teacher-centred/content-orientated' on one extreme to 'student-centred / learning orientated' on the other, with 'student teacher interaction/ apprenticeship' conception in between, it is clearly observable that the CO and COTs were situated in the 'teacher-centred/content-orientated' extreme of the continuum. In this case, it seemed that their CO was consistent with their COTs.

Similar findings were also identified by Brown and Lake (2006) in their study on New Zealand teachers. They associated the findings with conformity, accountability, and school-based management/curriculum policy, and external certification program implemented in New Zealand that required teachers to meet certain standards in their work. These, they claimed, created a situation that led teachers to favour the technological and transmission CO and COT as they provided a clear and compatible framework for teachers to deal with such a policy. This explanation might also apply to the context of the current study. The school based management and curriculum development, the national exam, and teacher certification program

that are now implemented in Indonesian system of education might, to some extent, contribute to the prevalence of the CO and COT among the participants. In addition, as suggested earlier, experience as a student and student teacher is believed to play a significant role in shaping a teacher's COT (Christensen et al., 1995). Also the technological and transmission CO and COT might mirror the kind of teaching they have been exposed to as student or student-teacher. The existence of the apprenticeship-developmental as another prevalent COT confirms the suggestion made by Cheung & Wong (2002), Kember & Gow (1994), and Miller (1983) that teachers might hold more than one orientation or conception which might also be contradictory to each other.

In relation to the status of the participants as Islamic elementary public school teachers or Madrasah teachers and the current national program of character education, the prevalence of technological CO and transmission and apprenticeship-developmental COTs might be rather against expectation and would not contribute a lot to the program in schools. This is because as a moral and value oriented endeavour, Islamic elementary public school education and the character education program require teachers to act beyond the technological CO and transmission and apprenticeship-developmental COTs. They also have to act as a role model to their students or incline themselves to the social reconstruction CO, and nurturing and social reform COTs as well. Thus, the current policy that presents character education as a non-subject that is integrated into school subjects, and programs at schools (Ministry of National Education, 2010) could be challenged by the teachers' CO and COT issues. As a result,

systemic efforts should be made to reach into teachers' beliefs to make them accommodating to the program.

The findings of this study also indicated that the female participants had more apprenticeship-developmental and nurturing COTs than their male counterparts who seemed to stand alone in the field. Review of relevant available literature does not find any previous study that looked into the gender issue in CO and COT. However, the researchers are of the opinion that no explanation on why such absence exists is appropriate to be discussed here. Rather, this finding might fill the gap of information in the field and might serve as a trigger to further research on the issue, particularly on the core-psychological aspects related to gender which is beyond the scope of this study.

Interestingly, in this study it was found that participants' with 11 to 20 years of teaching experience tended to have more Social Reconstruction CO than participants with less than 1 to 10 years of teaching experience and with 21 to 30 years of teaching experience. This finding supports Gillespie's (2003) study, but contradicts and Cheung & Ng's (2000) finding in their research of Hong Kong student-teachers' CO that concluded that background knowledge and teaching experience are not related to CO. The difference might be due to the small sample size and the different model of CO used Cheung & Ng's (2000) research. Further inquiry is needed into this issue. Nonetheless, the finding of this study regarding the demographic variable of teaching experience suggests that changing teachers' CO might take time.

Finally, the findings of this study indicated significant correlations among COs and COTs. The academic CO correlated with apprenticeship

and social reform COTs, and the technological CO correlated with the apprenticeship-developmental and the transmission COTs. A possible salient feature of these correlations is their partly similar focus or nature. Both academic CO and apprenticeship-developmental COT, for example, stress on developing intellectual abilities. However, the academic CO and the social reform COT are two perspectives from two opposite paradigms, one focuses on the development of student's intellectual abilities while the other one focuses on social change. This, again, seems to lend support to the idea that teachers may have more than one, even contradictory, CO or COT (Cheung & Wongs, 2002; Kember & Gow, 1994; Miller, 1983)

Conclusions and Recommendations

The purpose of this study was to examine the dominant CO and COT held by the teachers, to determine whether there were statistically significant differences in their CO and COT across relevant demographic variables of gender, age, and teaching experience, and to identify correlations between the CO and the COT. The results of data analysis showed the CO and COT that received the most endorsement by the participants were technological and transmission and apprenticeship-developmental respectively. Thus, they were the dominant CO and COTs among the participants.

Tests of inferential statistics revealed that there was no significant difference in the participants' CO across the demographic variable of age and gender. However, it was found that female participants tended to endorse apprenticeship-developmental and nurturing COT

more than their male counterparts. Another significant difference was found in the demographic variable of teaching experience where participants with 11 to 20 years of teaching experience tended to endorse the social reconstruction CO less than participants with less than 1 to 10 years of teaching experience and with 21 to 30 years of teaching experience. Additionally, significant correlations were identified among the academic CO and apprenticeship and social reform COTs, and among the technological CO and the apprenticeship-developmental and the transmission COTs.

However, further research is needed on the issue of gender and CO and COT to enrich the information on the issue in the field and on the contribution of teaching experience on teacher CO and COT. The findings of this study show that the dominant CO and COTs held by participants were technological and transmission and apprenticeship-developmental that could be less compatible with moral and values oriented nature of Islamic schooling and the national program of character education. Therefore, systemic efforts should be made to reach into teachers' beliefs to make them accommodating to characteristics of Islamic (madrasah) schooling and to the character education program.

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