Measuring *Madrasah Ibtidaiyah* Teachers' Curriculum Orientation and Teaching Conception: A Rasch Analysis Approach

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ABSTRACT

Curriculum Orientation and Teaching Conception have been identified as reliable predictors of teachers' classroom practices. Based on this framework this quantitative research seeks to measure these two dependent variables on *madrasah ibtidaiyah* teachers and determine whether there are statistically significant differences in their curriculum orientation and teaching conception across demographic variables of gender, age, and teaching experience. In addition, this research also seeks to identify correlations between the two dependent variables. Data were collected through administration of adapted questionnaires to 65 *madrasah ibtidaiyah* teachers who were involved in the government funded in-service teachers undergraduate degree training program called "Dual Mode System" at STAIN Kerinci. Data were analysed by using Rasch Analysis and tests of inferential statistics.The results of data analyses shows that, over all, 1) the teachers' curriculum orientation tends to be "technological" and "academic" rather than "social reconstructionistic"; and 2) the teachers tend to conceptualize teaching as "apprenticeship-developmental" and "knowledge transmission" rather than "nurturing" or "social reform". Tests of inferential statistics show a significant difference between male and female teachers' conception of teaching, where female teachers tend to conceptualize teaching as "apprenticeship development" and "nurturing". A significant difference was also found in the teachers' curriculum orientation across the demographic variable of teaching experience where those with 11-20 years of teaching experience tend to endorse "social reconstruction" orientation less than their counterparts with 1-10 and 21-30 years 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 results are discussed with the available relevant literature and the current national program of character education in Indonesia. It is argued 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". Therefore, evaluation and reorientation of paradigm and approach in teacher education and educational objectives are suggested.

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

Introduction

Teachers come to classroom with some established beliefs about the nature of their work, students, and other aspects of their profession (Marouchou, 2011; Pajares,1992). Research (e.g. Kavanoz, 2006; Handal & Herrington, 2003; Schommer,1994; Lynch,1989; Rose & Medway,1981) have identified a relatonship 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) or "*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) or "*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) have been recognized as two psycological constructs related to teacher's professional undertaking of their duties. Thus, studying these constructs as held by teachers would provide a way for understanding their practices based on which teacher development could be designed.

Research also indicate that teacher's CO and COT are contextual and cultural in nature (Gao & Watkins, 2002; Engeström, 1999; Raymond ,1997), which means teachers in different contexts and cultural background 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 of the issue on the teachers. In addition, there is no, so far, study that tries to define the relationship between teachers' CO and COT. This study, altough limited in scale, seeks to fill this gap. Focusing on Madrasah Ibitidaiyah Teachers of The Regency of Kerinci, specifically, this quantitative research seeks to:

1. find out the dominant CO and COT held by the teachers.
2. determine whether there are statistically significant differences in their CO and COT across demographic variables of gender, age, and teaching experience. In addition, this research, and

3. seeks to identify correlations between CO and COT.

Curriculum Orientations

In the literature, CO (Cheung & Ng, 2000; Miller, 1983) has been introduced 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 fundamentally refer to the same construct. In this study CO is understood as *"a set of value premises from which decisions about curriculum objectives, content, organization, teaching strategies, learning activities and assessment modes are made"* (Ng & Cheung, 2000; p.1). Marsh (2009), Gillespie (2003), Cheung and Ng (2000), Ennis and Chen (1993), and Ennis, Chen and Ross, (1992) suggest that CO determines the type of contents,teaching strategies, assessments teachers select and their willingness to enact a curriculum. Thus, they argue, in order for a curriculum change to be effective, it must first be preeceded by change in teachers' CO.

One of the earliest attemps to map teacher's CO was made by by Eisner and Vallance (1974). The proposed a five-category model of teacher's CO, namely: *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 achievings pre-determined objective of learning. The third orientation, self-actualization, and the fourth, social reconstructionist, sees a curricula 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 benefecial 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: *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.

Young, in 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, Gillespie lists other factors which include teacher philosophy, teacher education, professional development, life experiences, curriculum, colleagues, schools and reflective practice.

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.* Refering to Gao & Watkins (2002), Engeström (1999), Raymond (1997) who suggest that CO and COT are contextual and cultural in nature, Brown and Lake (2006) tried out the inventory on New Zealand and Queensland teachers. They found that a three-factor (orientation) model with 8-items comprising academic, social-reconstruction, and technological orientations fit the teachers better. The present study uses this later model.

Conceptions of Teaching

Borg (2003) defines COT as "*What teachers know, believe, and think*" (p.81), while Kember (1997) suggests that the term refer to teachers' overall view of the process of teaching. Drawing on Marton (1981), Gao and Watkins (2002) ague 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 (e.g. 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.

Several research-based models of COT have been introduced. Prosser and Trigwell (1999) develop a COT with six categories: *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.* Researching COT among teachers in China, Gao and Watkins (2002) identify five teaching conceptions which are labelled as: *Knowledge Delivery, Exam Preparation, Ability Development, Attitude Promotion,* and *Conduct Guidance*.

Pratt and associates (1998), propose a COT consisting of five perspectives, namely *transmission, 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 is 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 teacher and found that four-perspective model that combines *apprenticeship* and *developmental* fits better than the five-perspective one. The current study uses this four-perspective model of Pratt and associates' (1998) COT.

Gao (1999) and Kember (1997) suggest 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 by Cheung and Wongs (2002), Kember and Gow (1994), and Miller (1983) show that teachers may hold more than one orientation or conception which might also be contradictory to each other, and exeperience as student and student teacher is believed to play a significant role in shaping a teacher's COT (Christensen *et al,* 1995).

Method

The repspondents of this quantitative study were 65 *madrasah ibtidaiyah* teachers who were involved in the government funded in-service teachers undergraduate degree training program called "Dual Mode System" at STAIN Kerinci. Data were collected through administration of Cheung's (2000) 8-item *Curriculum Orientation Inventory* and Pratt and Collins' 11-(2001) 11-item *Teaching Perspective Inventory*. Both instruments were translated into Indonesian with some minor wording adjusments as the original versions were in English. Data were analysed by using Rasch Analysis and tests of inferential statistics and was comducted in two stages. In the first stage, the psychometric properties of the instruments and responses were evaluated for the validity and reliability the study, while the second stage sought to answer the research questions.

Specifically, the adoption of 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, Rasch analysis is sensitive to idiosyncrasies of persons and items. It, for example, gives information about the unique values of individual thresholds among categories in each item of polytomous data (Bond & Fox,2001). This way, a wider access will be available, not only for better information about person's ability and item difficulty, but also for a more precise and comprehensive identification of the nature of the persons and items. Third, Rasch analysis allows evaluation even though respondents

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 ma kers 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).

Results of Data Analyses

Initial Data Analysis

As Rasch analysis necessitates validity and unidimensionality of the measurement instrument and requires responses that fit the *Rasch Model* for the result to be meaningful, an initial analysis that looked into these issues was conducted on the data from the 65 respondents. The analysis shows that both instruments met the psychometric criteria for a meaningful measurement. All the items on the scales have positive *Point Measure Correlation* (PTMEACOR) values (Appendix C)., indicating that all the items on the scales are working in the same direction on the construct being examined Furthermore, except for item 11 of the *Teaching Perspective Inventory* whose *infit mean square* is 1.68, all other items in both scales have an *infit mean square* (INFIT MNSQ) within the acceptable range of -.50 to 1.50 (Linacre,2006). 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 groups of people (Bond & Fox, 2001).Therefore, this item is retained in this study.

The Dominant CO and COT Held By The 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 respondents is *Technological* (Mean Measure=-0,425), the second most dominant CO is *Academic* (Mean Measure=-0,146), and CO that the respondents agree with the least is *Social Reconstruction* (Mean Measure = 0,433).

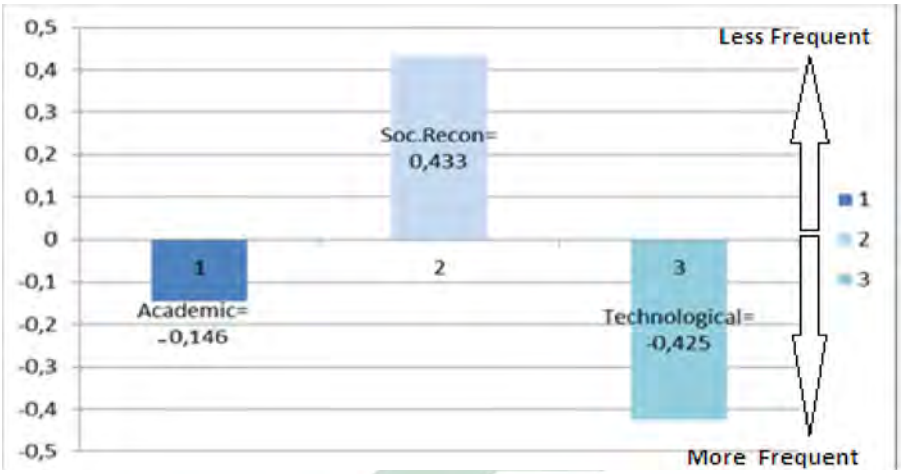

Figure 1. Measures of The Madrasah Ibtida'iyah Teachers' COs

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.

Figure 2. Measures of The Madrasah Ibtida'iyah Teachers' COTs

Respondents' CO and COT Accross Relevant Demographic Variables

Gender

Of the 65 respondents, 50 were female and 15 were male. Mann-Whitney U test shows that there is no significant difference between female and male respondents in their CO, *U*= 338.5, *Z*=-,466, *p*= >.05 (*Academic), U*=295,5, *Z*=-1,145, *p*= >.05 (*Social Reconstructionist), U*=326,5, *Z*= -, 555, *p*= >.05 (*Technological).* Significant differences were found in their COT; *Apprenticeship-Developmental: U*=200, *Z*=-2,695, *p*=, 007, and *Nurturing: U*=193, *Z*= -2,786, *p=,005,* where female respondents (*Mean Rank* = 29,08 and 28,94) tend 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 respondents was categorised into four categories. Category 1 was for those who were 20 to 29 years old. There are 9 (13,8%) respondents who fell into this category. Category 2 was for respondents who were 30 to 39 years old, and there were 19 (29,2%) the respondents 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%) respondents in category 3, and 12 (18,5%) respondents in category 4.

Result of the Kruskal-Wallis test indicated that was no significant difference in the respondents' COs accross the four age categories; *Academic: H=1,776, 3 d.f., p= >.05*; *Social Reconstructionist: H=2,628, 3 d.f., p= >.05*; *Technological: H=3,455, 3 d.f., p= >.05*. Similarly, no significant difference was found in the respondents' COT accross the four age categories: *Apprenticeship-Developmental: H=6,110, 3 d.f., p=>.05; Nurturing: H=2,295, 3 d.f., p=>.05; Social Reformist: H=4,250, 3 d.f., p=>.05;* and *Transmission: H=2,893, 3 d.f., p=>.05.*

Teaching Experience

The length of respondents' teaching experience spans from less than one year to more than thirty years. For the purpose of data analysis, their teaching experience was categorised into four categories, namely Category 1 (less than 1 year to 10 years), with 32 (49,2%) respondents in the category; Category 2 (11 to 20 years) with 7 (10,8%) respondents; Category 3 (21 to 30 years) with 24 (36,9) respondents; and category 4 (30 years and above) with only 1 respondent, hence excluded from data analysis.

Results of Kruskal-Wallis non-parametric test on the respondents' CO accross the four age categories indicated a significant difference in the *Social Reconstruction.* orientation, *H=9,021, 2 d.f., p=.011,* where respondents in Category 2 with 11 to 20 years of teaching experience, *Mean Rank= 47,71*, tended to endorse this orintation 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=,345, p=.005,* and, second, *Social Reform* COT, *r= ,289, p=,020*; and between *Tehcnological* CO and, *Apprenticeship-Developmental* COT, *r=,33,5, r=,007* and *Transmission* COT, *r=,301, p=,016.* Table 1. summarizes the results.

Table 1

COs and COT Correlations

CO / COT	Apprenticeship Developmental	Nurturing	Social Reform	Transmission
Academic	*r=,345* *p=,005*	n.s.	*r=,289* *p=,020*	n.s.
Social Reconstruction	n.s.	n.s.	n.s.	n.s.
Technological	*r=,335* *p=,007*	n.s.	n.s.	*r=,301* *p=,016*

n.s.= not significan at *p=,05*

Discussion

Two of the significant findings in this study are the information about the respondents' CO and COT. As previously noted, overall, the CO and COT that received the most endorsement by the respondents were *Technological* and *Transmission* and *Apprenticeship-Developmental* respectively. The prevalence of these CO and COTs amog the respondents is supported by results of the correlational tests presented in the previous section where *Techonological* CO correlates 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 contiuum from 'teacher-centred/content-orientated'

on one extreme to 'studentcentred / learning orientated' on the other, with 'student teacher interaction/ apprenticeship' conception in between, it is clearly observable that the CO and COTs are situated in the 'teacher-centred/content-orientated' extreme of the continuum. In this case it seems 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 implnememented in New Zealand then that required teachers to meet certain standards in their work. These, they claim, created a situation that led teachers to favour the *technological* and *transmission* CO and COT as they provided a clear and compatible framework for teacher to deal with such a policy. This explanation might also apply to the context of the current study. The school based management and curriuclum 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 respondents. In addition, as suggested earlier that exeperience as student and student teacher is believed to play a significant role in shaping a teacher's COT (Christensen *et al,* 1995), 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 confirm the sugesstion made by Cheung and Wongs (2002), Kember and Gow (1994), and Miller (1983) that teachers may hold more than one orientation or conception which might also contradictory to each other.

In relation to the status of the respondents as *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 values oriented endeavour, *madrasah* 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 inclined themselves to the *Social Reconstruction* CO and *Nurturing* and *Social Reform* COTs as well. Thus, the current policy that presents the character education as a non-subject -but integrated into school subjects, program at schools (Kemendiknas, 2010) could be challenged by the teachers' CO and COT issues. Systemic efforts, then, should be made to reach into teachers' beliefs to make them accomodating to the program.

The finding that shows the female respondents tend to endorse the *Apprentice-Developmental* and *Nurturing* COTs more that their male counterparts seems contradictory to findings on the same issue in other contexts. Research by Ha and Xu

(2002), for example, found that female Hong Kong teachers emphasized a significantly higher value on social responsibility.

Interestingly, in this study it was found that respondents' with 11 to 20 years of teaching experience tended to endorse the *Social Reconstruction* CO less than respondents with less than 1 to 10 years of teaching experience and with 21 to 30 years of teaching experience. This finding concords with Gillespie (2003) but contradicts Ng and Cheung'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 may be due to the small sample size and the different model of CO used Ng and Cheung's research. Further inquiry is needed into this issue. Nonetheless, the finding of this study regarding the demographic variable of teaching experience seems to suggest that changing teacher's CO may take time.

Last but not least, this study identifies significant correlations among COs and COTs. The *academic* CO correlates with *apprenticeship* and *social reform* COTs, and the *technological* CO correlates with the *apperenticehisp-developmental* and the *transmission* COTs. A possible salient feature of these correlation is their partly similar focus or nature. Both *academic* CO and *apprenticeship-developmental* COT, for example, stress on developing intellectual abilitites. However, the *academic* CO and the *social reform* COT are two perspectives from two opposite paradigm, one focuses on the development of student's intellectual abilitites while the other 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 and Wongs, 2002; Kember and Gow,1994; Miller,1983)

Conclusions and Recommedations

This study seeks to find out the dominant CO and COT held by the teachers, to determine whether there are 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 following conclusions are drawn on these purposes:

1. The results of data analysis show the CO and COT that received the most endorsement by the respondents are *Technological* and *Transmission* and *apprenticeship-developmental* respectively. Thus, the are the dominant CO and COTs among the respondents.
2. Test of inferrential statistics found that there is no significant difference in the respondents' CO accross the demographic variable of age and gender. However, it was found that female respondents 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 respondents' with 11 to 20 years of teaching experience tended to endorse the *Social Reconstruction* CO less than respondents with less than 1 to 10 years of teaching experience and with 21 to 30 years of teaching experience

3. Significant correlations were identified among the *academic* CO and *apprenticeship* and *social reform* COTs, and among the *technological* CO and the *apperenticehisp-developmental* and the *transmission* COTs.

Based on the findings of the study, the researchers are pleased to recommend the following:

This study shows that the dominant CO and COTs held by respondents are *Technological* and *Transmission* and *apprenticeship-developmental* that could be less compatible with moral and values oriented nature of *madrasah* schooling and the national program of chracter education. Therefore, systemic efforts, should be made to reach into teachers' beliefs to make them accomodating to characteristic of *madrasah* and to the character education program.

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