USE OF THE REFLECTIVE JUDGMENT MODEL AS A REFERENCE TOOL FOR ASSESSING THE REFLECTIVE CAPACITY OF TEACHER EDUCATORS IN A COLLEGE SETTING

By

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ABSTRACT

Among the most critical professional characteristics of teacher educators is that of reflectivity. The ability to self-judge our own practice context, capability, and performance against the broader professional contexts of practice by teacher educators has been noted by the National Council for Accreditation of Teacher Education (NCATE). The capacity for teacher educators to demonstrate professional reflection and to inculcate this capacity in pre-licensure candidates in colleges of education is among the standards for accreditation in the NCATE criteria (NCATE, Standard 2). As a consequence, research designed to uncover this reflective capacity, to scale it for comparative study, and to relate it to standard measures of program quality are viewed as critical to a more realistic understanding of the capability of faculty in higher education (teacher educators) to meet the reform goals for K-12 education broadly.

The purpose of this study was to determine whether it was possible to distinguish among reflective strategies of teacher educators' divergent types or levels of reflective practice. The findings indicated that The Reflective Judgment Model (King and Kitchener, 1994) is a reliable and valid conceptual model; therefore it would be appropriate to directly compare reflective scores for teacher educators to other professions which have been studied with this same RJM. It was determined that teacher educators were more typically at the center of the epistemic scale. Given this finding, there is room for professional development work to enhance the evolution of teacher educators with respect to reflective capacity.

Keywords: Reflective Capacity, Professional Development, Reflective Judgement Model.

INTRODUCTION

The centrality of reflection remains a goal of education, especially higher education; this is evident in several recent national reports on undergraduate education, each of which reiterated the need for college graduates to think reflectively (American Association of Colleges and Universities, AAC & U, 2002; American Association of Higher Education, American College Personnel Association ACPA, and National Association of Student Personnel Administrators, 1998; ACPA, 1994, as cited in King and Kitchener, 2004, p.6).

Among the most critical professional characteristics of teacher educators is that of reflectivity. The ability to self-judge our own practice context, capability, and performance against the broader professional contexts of practice by teacher educators has been noted by the National Council for Accreditation of Teacher Education (NCATE). The capacity for teacher educators to demonstrate professional reflection and to inculcate this capacity in pre-licensure candidates in colleges of education is among the standards for accreditation in the NCATE criteria (NCATE, Standard 2). As a consequence, research designed to uncover this reflective capacity, to scale it for comparative study, and to relate it to standard measures of program quality are viewed as critical to a more realistic understanding of the capability of faculty in higher education (teacher educators) to meet the reform goals for K-12 education broadly.

Unfortunately, traditional models of professional development for educators have been built from a

cognition model in isolation from the increasingly complex practice environment where decision-making is clouded by conflicting policy and socio-cultural constraints, although numerous calls to reform have been issued repeatedly. Butler (2004) notes a further deficiency with respect to professional development, "a related criticism of the traditional model is that it is based on questionable assumptions about the nature and origins of professional knowledge, and about how to forge connections between research and practice" (p.437). In this gap, as has been noted frequently, what passes for educational development is typically disjointed, incoherent, and unconnected from authentic professional decision-making responsibilities for educators at all levels (Corcoran, 1995; Day, 1993; Livneh, 1999).

Studies Using King and Kitchener's Model

Research has consistently demonstrated a significant relationship between educational level and a person's ability to make reflective judgments. According to Friedman and others, those with more formal education are more likely than those with less education to exhibit the most complex types of thinking described in King and Kitchener's reflective judgment model (RJM) (Friedman, 2004, p. 297).

Although often compared with critical thinking, the RJM is distinct in its emphasis on the intellectual tasks involved in open-ended problem solving rather than closed-ended, the attention to epistemic assumptions, and the articulation of stages of development (Hofer, 2001). Ill-defined problems, according to King and Kitchener (2004, p. 5) are characterized by two features: they cannot be defined with a high degree of completeness and they cannot be solved with a high degree of certainty.

After twenty-five years of investigating how late adolescents and adults come to understand and make judgments about kinds of controversial problems, three observations have been made by King and Kitchener:

- there are striking differences in people's underlying assumptions about knowledge or epistemic assumptions,
- these differences in assumptions are related to the way people make and justify their own judgments about ill structured problems, and,
- there is a developmental sequence in the patterns of responses and judgments about such problems.

The RJM provides a theoretical framework for understanding and organizing these observations (2004, p. 5).

King and Kitchener (2004) also observed that development in reasoning has stage-like properties, but not that it evolves in a lock step, one stage at a time fashion (p. 9). For example, it is common to find an individual who relies heavily on Stage 4 assumptions while reasoning about a controversial problem but who also makes statements that are consistent with Stage 3 and Stage 5 assumptions. By contrast, someone who relies heavily on Stage 2 assumptions rarely uses assumptions of any stage higher than Stage 3 (p. 10).

King and Kitchener's (1994) general findings from their ten year, longitudinal and cross-sectional studies are as follows:

- Development in reflective judgment occurs slowly and steadily over time and the increases in scores are not an artifact of selective participation or practice.
- Stability and development are much more common than regression in reflective thinking.
- People who are engaged in educational activities tend to improve in their reasoning about ill-structured problems.
- Development typically follows the stage-related patterns described by the RJM. The consistently higher mean scores among older, more highly educated individuals in the cross-sectional studies, the consistent increase in mean scores over time in the longitudinal studies, and the more fine-grained analyses of the sequence of changes within individuals support this claim.
- Being in an educational setting seems to facilitate development; the specific components of an educational environment that make a difference could not be determined (pp. 187-188).

Additional researchers have used King and Kitchener's Reflective Judgment Model with a variety of populations. Janet Dale (2005) completed a study in which the participants were students preparing for ministry. The results of

this study indicated that differences between entering and graduating students' Reflective Judgment Interview (RJI) mean scores were not statistically significant, nor were their mean scores significant between religious and secular dilemmas. Further, students' scores did not decrease significantly as their references to faith increased (pp. 60-63).

Friedman (2004) interviewed female students using the Omnibus Personality Inventory and the Reflective Judgment Interview and found that scores on six scales of the personality inventory correlated significantly with RJI scores; these include thinking introversion, response bias, altruism, autonomy, complexity, and theoretical orientation. These findings support the conclusion that post formal reasoning, as described by King and Kitchener's model, is related to measurable personality traits (pp. 301-303).

Ilacqua and Prescott (2003) used the Reflective Judgment Model in their introductory economics courses and found that older students were more comfortable with uncertainty and complexity and more flexible in their interpretation of knowledge than the younger students (pp. 368-369).

Pirttila-Backmän and Kajanne (2001) published results which focused on Finnish adults. The RJM average stage score clearly increased during the two study periods; one initially given in the late 80's and a follow up in the mid 90's. Education, in particular, education beyond a person's primary profession/occupation was a strong predictor of development. Also, encountering diversity and exploratory orientation were related to development, but their connections were more complicated. No gender differences were found. The results support the idea that positive changes in thinking and reasoning take place during adulthood (pp. 89-91).

Pirttila-Backmän (1993) completed a Finnish cross-sectional study in which it was shown that both educational level (lower vocational, higher vocational and university) and field (technical, nursing/medical and social sciences) make a difference in the RJ scores. It was further shown that such factors as living in a complex environment, being responsible for other people and having autonomy in one's work seem to be related to the development of RJ. The lower one's education level, the more important are other life experiences (as cited in Pirttila-Backmän & Kajanne, 2001, p. 82).

Reflective judgment also appears to be related to other dimensions of development. King and Shuford (1996) found a moderate positive relationship between the kinds of assumptions students use to reason about intellectual issues and the assumptions they use to reason about moral issues. Guthrie, King and Palmer (1999) found moderate positive correlations between reflective thinking and tolerance for diversity. Participants in this study who reasoned at quasi and reflective thinking levels were much more likely to hold tolerant viewpoints with respect to race and sexual orientation than their counterparts who help pre-reflective assumptions (as cited in King & Kitchener, 2004, p. 22).

The strongest contrast between college-educated and non-college educated adults is provided by Glenn and Eklund (1991). These researchers administered the RJI to two groups of participants who were at least 65 years old but who differed in terms of their educational attainment. The first group consisted of adults with up to a high school education: their RJI mean score was 3.7, which is about half a stage higher than the overall mean score among high school seniors (3.3) and closer to the average for the college samples (3.8). The second group consisted of retired faculty members with doctorates; the RJI mean score for this group was 5.2, which is comparable to the scores earned by advanced graduate students (as cited in King and Kitchener, 1994, pp. 174).

Methodology

In 2005, the authors of this current study undertook a complex study of the reflective capacity of teacher educators at a regional college in the mid-western United States. Prior findings from this research have included a consistent, event-path model describing the processes of reflection incorporated by these teacher educators in making judgments about their own practices (Wlodarsky and Walters, 2006). Further analyses revealed a strong, cognitive and performance basis to reflection and a tendency to prioritize personal experience and memory over more objective evidence when reflecting (Wlodarsky and Walters, 2007). Clearly, however, reflection on practice

seemed, in these studies, to be a typical element in professional practice for these teacher educators. It was not clear, from these earlier analyses, whether it was possible to distinguish divergent types or levels of reflective practice among reflective strategies of teacher educators, necessitating further data collection and analyses.

This current paper followed up the prior work by incorporating structured interview processes and a field-validated approach to scaling reflective practice developed by King and Kitchener (1994) that had not previously been used with teacher educators in a college setting. The Reflective Judgment Model (RJM), discussed in the literature review above, has been found reliable for linking respondent narrative regarding ill-defined problems to a validated stage of reflective capacity. A number of other professional groups, various ages and education levels of participants, as well as demographic criteria have been incorporated in research using this model. The interview subjects had previously provided survey responses and artifacts to us for analyses in the prior research studies, and had indicated a willingness to further participate in this ongoing research study. This study utilized a mixed method model, wherein the narrative data were coded separately from each other following a definitional matrix (rubric) developed for the stages of reflective practice. Following coding of one interview transcript, the authors discussed the use of the coding schema to isolate deviations in definitions within the matrix and to identify a baseline inter-rater reliability level. Following this step, they coded the remaining interview transcripts, with the codes interpreted as nominal data scale. These mathematical data were then input into SPSS and used for correlational analyses to identify patterns of response, inter-rater reliability of the coding schema and definitional matrix, and subsequently the overall and within subjects' differences on the reflective judgment scale.

Reliability and Validity

The functional reliability and validity of the questioning / instrument has been calculated and reported by King and Kitchener (1994, pp. 268-270) across thirty-two replication studies. The interrater reliabilities range from a low of .29 to a high score of .97, with twenty-four of the studies reporting reliability coefficients in the upper quartile. The current study falls within typical values for these studies (at the high end). Internal reliability of the standard questions has been calculated across the thirty-two studies (King and Kitchener, 1994, pp. 271-274) with a range in alpha coefficients from .47 to .96. Internal reliability for this current administration of the questions yielded an alpha coefficient of .93, again within but at the high end of the range of scores for the previous studies. It is noted that the inter-problem correlations from the previous studies addressed only the five standard problems from the question protocol, whereas the authors used one standard question and one discipline specific question from the psychology-disciplinary battery because of the professional knowledge of the study group; however, they confined themselves to the exact administration procedures delineated by King and Kitchener to ensure there were no threats to the reliability and validity of their questions risked by changing their original procedures. As they restricted themselves to the exact wording of the original questions, the face and construct validity of these questions established in the original King and Kitchener studies and the thirty-two replication studies cited in this section of their text is preserved. Finally, one additional study (Glenn and Eklund, 1991, cited above) utilized this structured interview procedure and questions with college faculty members, albeit retired faculty (different from our population of active faculty).

Procedures

A sample of eight teacher educators in a regional, mid-western college self-selected to participate in structured interviews with us. They were not informed about the nature of the interviews nor the RJM until after the interviews were completed. Each participant was invited to respond to an initial, ill-defined problem from the set provided by King and Kitchener (1994), following the scripted questions recommended for this interview protocol (1994, pp.102-103). Interviews were recorded digitally and transcribed completely for content analyses.

Analyses and Findings

The authors coded narrative responses for the eight interview subjects using a matrix of epistemic categories.

This matrix (Table 1) includes an ordinal scale from one to seven for levels of Knowledge and Judgment related to personal epistemology and decision-making. They worked independently on the first interview narrative to code the interview responses for both Knowledge and Judgment level. They then compared the respective coding schemes and discussed their individual use of the categories to ensure a shared conceptualization of the embedded meaning of each level. Finally, they then worked independently of each other to code and rank the narrative for the remaining seven interviewees. SPSS 16.0 was used to calculate descriptive and inferential values for the data set.

A group of ninety-five cases were constructed for analyses from narrative quotations in the transcripts which were identified by both of the authors from the eight transcripts. Quotations identified by only one of them were discarded. Each case (quotation) was coded for Knowledge and for Judgment by each of them, yielding four scores per case. It should be noted that an individual narrative selection may have had different scores for Knowledge and for Judgment (one to seven on each scale), and may have had different scores from one to seven from each of them. The cases were coded on a scale of one to seven, corresponding to the definitional scale (Table 1).

A score was assigned when a word, phrase, or paragraph seemed to stand as a single thought, i.e. was a single, "countable" unit of thought-and when this thought was comprised of language that resonated qualitatively with the ideas contained within the descriptions in the cells in Table 1. Again, it is noted that the authors worked independently through one interview transcript, compared their coding structure for similarity and differences to solidify and stabilize the use of the definitional matrix as a rubric, and then proceeded to code the remaining seven transcripts once a high level of consistently was achieved when working through the first transcript. The final statistical analyses were calculated both with and without the scores for the first transcript, and it was found that the analyses with all eight of the transcripts was the most statistically conservative-and therefore these are the ones reported in this study.

Stage	View of Knowledge	Concept of Justification
1	1K: Absolute, Concrete; External Authority.	1J: Beliefs need no justification; No alternatives are perceived.
2	2K: Absolute but Partial; External Authority.	2J: Existence of alternative views is acknowledged however, absolute knowledge is still maintained. There is a right way to believe.
3	3K: Absolute, Uncertainty is temporary until external authority finds truth.	3J: Beliefs are justified by reference to an authority's view.
4	4K: Uncertain; ambiguous.	4J: Beliefs are justified by reasons and using evidence.
5	5K: Contextual; Subjective.	5J: Beliefs are justified within a particular context.
6	6K: Constructed from a variety of sources.	6J: Beliefs are justified by comparing evidence and opinion across different contexts.
7	7K: Constructed through a process of inquiry.	7J: Beliefs are justified probabilistically based on a variety of interpretive considerations.

Table 1. King and Kitchener's Seven Stages of Reflective Judgment

Each of the ninety-five cases included four scores (Researcher 1, Knowledge and Judgment, and Researcher 2, Knowledge and Judgment). The inter-rater reliability of the independently coded scores was calculated using Cronbach's alpha at .93 overall (Table 2). This is a very high level of consistency among the cases and scores, suggesting that the definitions and language on the reflective scale were robust to accommodate the type of language typically used by teacher educators to discuss the ill-defined problems. This supports a conclusion that this measurement scale is valid and appropriate to use in working with teacher educators and to describe reflection specific to that professional field.

Within the cases, the individual item descriptive statistics (Table 3) revealed a fairly small variability around a similar mean score of approximately 4.2 to 4.3. Overall, these scores place the group of eight participants at slightly above average on the reflective scale, or slightly to the constructivist orientation over against the objectivist orientation. The researchers expected a more highly

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.927	.930	4

Table 2. Inter-Rater Reliability

	Mean	Std. Deviation	N
1K	4.22	1.354	95
1J	4.26	1.354	95
2K	4.32	1.132	95
2J	4.34	1.107	95

Table 3. Item Statistics (Item = rating)

constructivist score, i.e. closer to a mean score of 5.0 or 6.0 given cultural perceptions of teacher educators, as well as a prior study (Glenn and Eklund, 1991) that used this scale with retired college faculty members (doctoral level) and found an overall mean score of 5.20.

Post hoc testing was performed to ascertain the relationship among the four scores used in this analysis. There were no statistically significant differences between the items based on the ANOVA (p=.549), which was expected based on the very high Cronbach score for the data set (Table 4). This finding confirms the highly similar rank scores for both Knowledge and Judgment.

Conclusions and Implications

Seeking to move from the narrow focus of this research problem as outlined above, the authors have made several observations and are struck with a number of very practical implications in relationship to these observations to this body of work.

First, facilitating and enhancing the capability of teacher educators to be reflective and to inculcate reflectivity among licensure candidates is critical to the success of the teaching profession. Consequently, identifying a reliable and valid conceptual model to operationalize and measure reflection among these groups is an important step to identifying practice solutions that are effective and sustainable. The Reflective Judgment Model incorporated in this study has been found to be appropriate and reliable, and to accommodate the cultural vocabulary of teacher educators. The matrix in Table 1, when used as a rubric to scale teacher educator reflective capacity was functional with a very high measured reliability. Were this type of scale used consistently with larger groups of teacher educators over time and in various demographic and socio-cultural environments, important variables related to the formation of reflective capacity among professional educators might be observed.

		Sum of Squares	df	Mean Square	F	Sig
Between People		476.805	94	5.072		
Within People	Between Items	.779	3	.260	.706	.549
	Residual	103.721	282	.368		
	Total	104.500	285	.367		
Total		581.305	379	1.534		

Table 4. ANOVA results for difference between items reveals no significant differences.

Further, given that the Reflective Judgment Model proved reliable for scaling teacher educators' reflective capability, it would be appropriate to directly compare reflective scores for teacher educators to other professions which have been studied with this same RJM. In many areas of educational research, traditional research lines have failed to yield fruitful and energizing results which hold promise for powerful impact on the field of practice. Findings on research with other professional groups which used the RJM may contribute to a deeper understanding of reflection among teacher educators, thereby enhancing and facilitating growth in reflection and, subsequently, enhance reflective ability among their students, i.e. licensure candidates. These findings may also open new research lines toward an understanding of the relationship of self-awareness to professional competence for teacher educators, and how these translate to licensure candidates under the direction of these teacher educators.

Second, the authors have clearly observed and cited the use of a common instrument and conceptual construct that functions reliability across a broad group of populations whose commonalities are adult-hood, continuous learning beyond necessarily formal or institutional settings, and learning in professional contexts. This "larger tent" approach to literature has been a hallmark of the adult education movement in the United States since its inception and as an approach-as the authors are finding in this paper-enriches their research and learning. They perceive that the failure to incorporate the rich traditions and literatures across the fields engaged with adult learning has become an obstacle to professional renewal and growth in their field, that of teacher education. Within their own college setting, the insularity that is produced through over-limitation of literary categories, through over-reliance on literature specific to teacher educators, and through an unnecessary delimiting of learning from multiple fields of inquiry, is at the very least intellectually stifling.

Pragmatically, there is much the authors can learn about themselves as teacher educators if they learn to first view

themselves as adult learners generally, with much in common with individuals and colleagues from many other traditions and contexts. The authors may find solutions to what they have construed as unique practice problems to teacher education from those other traditions.

Third, in this study, every participant revealed narrative from every level of the RJM. However, a clear preponderance of scores revealed an average or typical reflective level of slightly higher than 4.0. This observation supports King and Kitchener's findings, which observed that individuals would have a typical level, while occasionally responding above or below that level. However, the authors were surprised to observe that typical, cultural characterizations of teacher educators, i.e. highly postmodernist and constructivist in orientation, did not hold up in this analysis. Teacher educators were more typically found to be at the center of the epistemic scale. They were comfortable with authoritative knowledge, external authority and evidence, and objectivity and rationalism as the means to understanding. This finding would situate the field of teacher education more centrally, philosophically, than modern social preconceptions held by the general public.

Given the relatively mid-range of scores of the faculty members who participated in this study and the authors perception that they are not atypical of college faculty in other institutions, there is room for professional development work to enhance the evolution of college faculty with respect to personal reflective capacity. There was a gap observed in the response scores of their faculty members and those obtained by Glenn and Eklund (1991) in his study of very late career faculty members. To the degree that their participants are similar to the faculty studied by Glenn and Eklund, it is important to identify the types of professional development that mid- to late-career professors might engage in that would result in the kind of growth in reflective judgment required to move from the approximately 4.0 stage to the high 5.0 range. For their faculty, it may be possible to develop a trajectory of growth in reflective capacity on the King and Kitchener scale based on their current levels, the professional growth activities in which they engage, and their similarity or difference to the Glenn and Eklund study sample. In this research and the literary context they have established suggests that structured, formal learning not necessarily related to the profession of college professor or teacher educator-perhaps more classical, liberal arts, or content in nature-would contribute to increasing the reflective capacity of their faculty and other faculty who may be like these individuals. More broadly construed, and noting that the following thought is perhaps fodder for an entirely different and lengthy conversation, the ongoing concerns over the preparation or fit of teacher educators within the academy may also be ameliorated somewhat by the use of increased formal learning experiences to broaden and deepen the content knowledge of these individuals, and thereby also contributing to the creation of a more reflective faculty simultaneously.

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