Teachers' Perceptions, Attitudes and Beliefs Regarding Curriculum Integration

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Abstract

This paper summarises the results of a three-day workshop conducted between October and December of 2007 as part of a larger project dedicated to improving teacher quality at the pre-service and in-service levels. Both pre- and post-test measures were administered before and after workshop completion in order to capture changes in knowledge, attitude, and perception. For contextual relevance, findings are summarised in light of extant literature pertaining to curriculum integration.

Introduction

Several authors have documented the range of terms used interchangeably for curriculum integration (Dowden, 2007; McClure, 2007; Toren, Maiselman, & Inbar, 2008). According to Dowden (2007), terms such as integrated curriculum, interdisciplinary curriculum, multidisciplinary curriculum, fused curriculum, transdisciplinary curriculum, cross-disciplinary curriculum and integrative curriculum are all attempts to label two predominant models of curriculum integration: Beane's (1990; 1993) student-centered integrative model and Jacobs' (1989) subject-centered multidisciplinary model.

Beane (1997) defined the student-centered integrative model as being "concerned with enhancing the possibilities for personal and social integration through the organization of curriculum around significant problems and issues, collaboratively identified by educators and young people, without regard for subject-area lines" (p. 55). In contrast, Jacobs (1997) defined the subject-centered multidisciplinary model as "a curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience" (p. 8).

Several authors have reported that students from schools emphasizing integrated curriculum programs performed better on nationally standardised tests, state-implemented performance exams, and other academic outcomes than students in schools where a student-centered integrated curriculum approach was not emphasised (Anfara & Lipka, 2003; Drake & Burns, 2004; Felner, Jackson, Kasak, Mulhall, Brand, & Flowers, 1997; Mertens & Flowers, 2003; Nolan & McKinnon, 2003; Ross & Hogaboam-Gray, 1998). In her meta-analysis of 30 studies examining the effects of integrated curriculum programs on student achievement, Hartzler (2000) found overwhelming evidence to support the conclusion that students in integrated curriculum programs do better on standardised and program-developed assessments of achievement than students in traditional classrooms.

Parenthetically, prior to emphasizing curriculum integration, the traditional approach of educating students was through separate or single-subject curriculum, where subjects were divided into distinct discipline areas with the content as the focal point for the development of the curriculum. The idea behind separate subject curriculum is that each content area has a unique knowledge base, procedural skills, and attitudes and values. With this approach, subjects are taught as unique entities which theoretically enables students to gain the knowledge, skills, and attitudes of each discipline in the most effective way possible (Dehart & Cook, 1997). However, in favor of parsimony and consistent with previous authors (Dowden, 2007; Erlandson & McVittie, 2001; Toren, Maiselman, & Inbar, 2008) we also used the term “curriculum integration” to describe the range of terms encapsulating both subject-centered and student-centered integrative approaches (i.e., an emphasis on the conscious application of relevant personal and social perspectives coupled with the application of methodology and language from more than one discipline as the bases for the organization of curriculum).

The number of empirical studies that have been conducted on the effectiveness of the various forms of integrative curriculum is testament to its current empirical focus. Vars (1996; 1997) documented over 200 studies involving the topic. Although research involving teachers’ perspectives regarding the documentation, conceptualization, and implementation of integrative curriculum in their classrooms have been conducted (DeCorse, 1996; Erlandson & McVittie, 2001; Homestead, 1998; MacDougall, 1997; Mills & Lehman, 1996; Weilbacher, 2001), questions remain concerning the extent to which teachers’ attitudes and beliefs toward curriculum integration can be modified. Additionally, examining the extent to which teachers intend to integrate content from various disciplines (i.e., math, reading, social studies, technology) would significantly contribute to the empirical literature. Perhaps by identifying which subject(s) teachers view as readily viable for integration, scholars can surmise ways in which to target professional development that offers tangible methods of improving their integration.

Consistent with Hew and Brush's (2006) four factors needed to facilitate change in teachers' attitudes and beliefs – teachers' knowledge and skills, subject culture, assessment, and institution support – this study represents a summative evaluation of the qualitative and quantitative responses of various teacher perceptions, attitudes, and beliefs regarding curriculum integration following a three-day workshop. Emphasis was placed on gaining a better understanding with regard to three research questions:

1. Following workshop completion, what were the teachers' plans to integrate multiple standards across subject areas?
2. Following workshop completion, what were the subjects teachers planned to integrate multiple standards across?
3. If teachers did plan to integrate multiple standards across subjects, what were the features they liked best about doing so?

Method

As part of a larger project dedicated to improving teacher quality at the pre-service and in-service levels, this paper summarises the qualitative and nonparametric results of one workshop conducted between October and December of 2007. As a means of providing professional development activities to practicing teachers, the three-day workshop was designed to introduce participants to clustering standards (day one), instruct participants on how to use available technology to support student success in achieving quality learning (day two), assist them in integrating social studies with language arts and math with economics (day three), and facilitate participants' ability to accomplish more in less time while simultaneously boosting student learning in the classroom (emphasised all three days). Consistent with the framework outlined by Jaeger (1997) regarding the use of survey research in educational settings, the primary concern of the investigation was to glean a better understanding of both, how often in-service teachers plan to integrate multiple standards across subject areas, and if they do not plan to integrate multiple standards across subject areas, why not. For our purposes, "standards" were operationalised via the specific academic standards for educational outcomes developed by the state (http://doe.in.gov/Standards/AcademicStandards/PrintLibrary/index.shtml) that are grade-level specific.

A total of 42 in-service teachers attended three 5-hour sessions over a period of three days between October and December of 2007. All participants were currently licensed teachers working in either an elementary, middle, or high school in Indiana. Although surveys were administered to all participants both before and after completing the workshop, pre- and post-test matching was unobtainable. As a result, paired *t*-tests were

not conducted. However, chi-square analyses and qualitative responses are presented for a total of 36 post-workshop completed surveys collected from participants. This completion rate (85.7%) falls well above the 60-80% rate espoused by Tunks and Neapolitan (2007) with regard to survey research in the area of teacher professional development.

In order to evaluate the effectiveness of the professional development workshop, participants were asked to complete a brief questionnaire consisting of six Likert-type questions and four questions pertaining to their plans to integrate multiple standards across subject areas. Specifically, workshop attendees were asked to rate their responses on a scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) to the following statements: (a) I feel I have a thorough understanding of how to "integrate multiple standards across subject areas" in the classroom, (b) I plan to frequently incorporate technology as a learning tool as a result of this workshop, (c) Standards are useful for preparing lessons for each subject area I teach, (d) I will continue to plan units from teachers' manuals and then check for standards, (e) I will continue to trust teachers' manuals to cover the standards, and (f) I am required to use specific curriculum materials (i.e., reading or math) and do not have the freedom to create additional curriculum units.

Participants also were asked to respond to the statement: "I plan to integrate technology into other school subjects _____ (choose only one), as a result of this workshop" with available responses being: (a) less than 1 time per school year, (b) between 1 and 3 times per school year, (c) more than 4 times per school year, and (d) almost exclusively in my curriculum planning. For the purposes of this question, time was operationalised as being one lesson or integrated, thematic unit that would last for a minimum of one to two weeks. Additionally, workshop attendees were asked to respond to the question: If you plan to integrate multiple standards across subject areas less than twice per school year, what are some of your reasons for not using them more often? Participants could select all responses that applied to them from a list of the following: (a) too much time required for planning, (b) don't know where to find curriculum materials, (c) unsure about how to assess student progress and work, (d) I feel that I'm only covering breadth and not depth of material, (e) I don't feel confident designing curriculum, and (f) I have too many standards to address to spend time on integration. Workshop attendees were also asked to list which subject areas they planned to integrate multiple standards across. Finally, participants were asked to qualitatively respond to the question: "If you often integrate multiple standards across subject areas, what are some of the features that you like best about doing so?".

Results

Nonparametric and descriptive

Results of chi-square analyses as suggested by Siegel and Castellan (1988) are summarised in Table 1. Because of the inability to match pre- and post-test instruments by participant, the table summarises only those responses reported on the post-test instrument. As such, the combined "observed responses" column represents only data derived from the post-test survey (as completed by 36 participants). In addition, chi-square was selected as the statistical technique because of its ability to summarise data on an ordinal scale using smaller samples (Wiersma & Jurs, 2009). As can be seen from the table, the majority of participants agreed with the statement that they felt as though they had a thorough understanding of how to integrate multiple standards across subject areas in the classroom and that they planned to frequently incorporate technology as a learning tool as a result of workshop attendance. Additionally, the majority of workshop attendees strongly agreed with the statement that standards were useful for preparing lessons for each subject areas that they taught. However, the majority of participants did not agree with the statement they will continue to trust teachers' manuals to cover the standards. In terms of their plans to integrate technology into other school subjects after participating in the workshop, the majority of participants believed they would do so more than 4 times per school year.

In terms of which subject areas participants planned to integrate multiple standards across, the responses varied (see Table 2). For example, with regard to integrating multiple standards across Language Arts with Science, 20 participants planned to do so. However, only 4 participants planned to integrate multiple standards across Language Arts with Fine Arts. Overall, a majority of participants planned to integrate multiple standards across Language Arts with Science (n = 20) and Social Studies (n = 20). However, a number of participants planned to integrate Math with Science (n = 14).

Although only 10 attendees responded to the item, participant responses to the statement: "If you integrate multiple standards across subject areas less than twice per school year, what are some of your reasons for not using them more often?", varied. Of the 6 possible responses, "I feel that I'm only covering breadth and not depth of material" and "I have too many standards to address to spend time on integration" were endorsed most frequently (n = 4). Three participants endorsed the item "too much time required for planning". Finally, the items "unsure about how to assess student progress and work", "I don't know where to find curriculum materials", and "I don't feel confident designing curriculum" were endorsed by two workshop attendees.

Responses to open-ended question

A final open-ended question on the survey pertained to participants' beliefs regarding the benefits of integrating multiple standards across subject areas. In particular, workshop

attendees were asked: "if you often integrate multiple standards across subject areas, what are some of the features that you like best about doing so?" An examination of attendee responses through content analysis revealed two particular themes – time and student-centered learning.

Question	Answer Choices	Observed Responses	Chi-square Statistic
I feel I have a thorough understanding of how to "integrate multiple standards across subject areas" in the classroom	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	3 5 9 15 4	13.44*
I plan to frequently incorporate technology as a learning tool as a result of this workshop	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	2 12 18 4 0	18.22*
Standards are useful for preparing lessons for each subject area I teach	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	0 2 8 9 17	12.67*
I will continue to plan units from teachers' manuals, and then check for standards	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	7 12 7 8 2	7.06
I will continue to trust teachers' manuals to cover the standards	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	8 15 4 7 2	13.72*
I am required to use specific curriculum materials	Strongly Disagree Somewhat Disagree Agree Somewhat Agree Strongly Agree	11 7 10 6 2	7.06
I plan to integrate technology into other school subjects _____ (choose only one), as a result of this workshop	Less than 1 time per school year Between 1 and 3 times per school year More than 4 times per school year Almost exclusively in my curriculum planning	2 8 22 4	27.11*

Note: *Results significant at p<.05

Table 1: Results from chi-square analyses

In terms of time, typical participant responses included "saving time, hitting areas of content with literature based activities", "time saving", "time management", "time – incorporates more standards in less time", and "it allows you to cover more standards in less time". In terms of student-centered learning, participant responses included "I feel students obtain more knowledge during efficient teaching. If I can integrate standards across subject areas, students get more practice and opportunities for mastery of each

Subject Area				
Language Arts with	*Science with*	*Math with*	*Social Studies with*	*Fine Arts with*
Science (20)	Language Arts (15)	Health (1)	Health (1)	Language Arts (8)
Math (12)	Math (13)	Language Arts (9)	Language Arts (17)	Math (5)
Social Studies (20)	Reading (1)	Literature (1)	Literature (2)	Phonics (1)
Fine Arts (4)	Social Studies (1)	Science (14)	Math (5)	Science (4)
	Writing (1)	Social Studies (2)	Phonics (1)	Social Studies (3)
			Science (6)	

Table 2: Frequencies of subject areas participants planned to integrate multiple standards across

standard", "I feel like students are getting a more well-rounded education", "I feel it makes the experience more real-life for the student", "it makes teaching more fun. Students enjoy it as well as learn a lot" and "it allows for student interest to impact lessons".

Discussion

Commenting on the survival of curriculum integration in an atmosphere of high-stakes accountability, Vars (2001) stated that "it is possible to retain significant features of curriculum integration, teach the most important state and district standards, and do it all in a way that advances the ultimate purposes of education in a democracy" (p. 15). In our study, the participant responses to the questions regarding their level of understanding of how to integrate multiple standards across subject areas, their plan to frequently incorporate technology as a learning tool, and their plan to integrate technology into other school subjects, supported this assertion. As such, it is clear that participants can learn how to simultaneously teach standards using integrative curriculum techniques as a result of professional development. In addition, the findings in this study regarding technology integration are particularly relevant given previous research documenting how professional development positively influences teachers' attitudes and beliefs regarding technology (Shaunessy, 2005; Teo & Wei, 2001). This comes as no surprise given the extent to which professional development activities (such as workshops) alter teachers' perceptions, beliefs, and pedagogies (Ross & Bruce, 2007; Garet, Porter, Desimone, Birman, & Yoon, 2001; Penuel, Fishman, Yamaguchi, & Gallagher, 2007).

Although the finding that eight participants responded either *strongly disagree* (3) or *somewhat disagree* (5) to the statement, "I feel I have a thorough understanding of how to integrate multiple standards across subject areas in the classroom" was particularly

worrisome, it could perhaps be an artifact of either their subject (physical education for example, which may not easily be amenable to multiple standards and integrated curricula) or the wording of the question (perhaps "thorough" wasn't an adjective participants were comfortable with). Future studies could explore this qualitatively.

Wixson, Dutro, and Athan (2003) commented that "the story of standards is a national story, a state story, a story of specific disciplines, and a story of philosophical and theoretical shifts and differences that have an impact on views of teaching and learning across disciplines" (p. 69). The responses of teacher participants who attended this workshop suggest a certain degree of confusion with regard to local, state, and national standards. On one hand, the teachers in our study either agreed (22%), somewhat agreed (25%), or strongly agreed (47%) with the statement that "standards are useful for preparing lessons for each subject area I teach". In contrast, 63% of the teachers in our study either strongly disagreed (22%) or somewhat disagreed (41%) with the statement that they "will continue to trust teachers' manuals to cover the standards".

Part of the reason for such a discrepancy with regard to teachers' manuals and academic standards may have to do with the availability of numerous teachers' manuals that are available to practicing teachers for purchase via websites such as "www.eBay.com", "www.Amazon.com", "www.Half.com", and "www.Yahoo.com". Although these teacher's manuals provide a wealth of information with regard to pedagogical practices, there is no guarantee that the academic standards espoused by any one state will be adequately addressed within their content. Furthermore, in many instances, teachers who participated in the workshop had been exposed to teacher manuals that were developed solely for use in his/her school. Consequently, relying on teacher manuals to adequately cover requirements of the state posed serious difficulties for these teachers, particularly when standards were not even discussed in their manuals.

Similarly, various endorsed responses to the question "if you integrate multiple standards across subject areas less than twice per school year, what are some of your reasons for not using them more often" echoed this confusion and apparent discrepancy. These inconsistent responses and endorsed items demonstrated Smith and Southerland's (2007) assertion that "it is important to recognise that teachers tend to perceive standards only in terms of content; they do **not** look to these documents for description of **how** that content should be taught. For the message of these tools to be heard, these misconceptions about curriculum standards must be explicitly dealt with in our work with teachers" (p. 418, emphasis added). Subsequently, just knowing the academic standards for any one grade (or subject) may not be enough. Teachers need to know the pedagogical techniques that foster learning and ultimately lead to the acquisition of student learning espoused by the academic standards of their state.

Finally, the teachers' responses to the open-ended question regarding what they liked best about integrating multiple standards across subject areas were, in some respects, very similar to those reported by Weilbacher (2001). In his qualitative analysis of four middle school teachers responses to various questions, Weilbacher identified three reasons the teachers choose to use curriculum integration including its ability to develop relationship with students, its ability to make learning more relevant to students, and its ability to bridge traditional academic disciplines with students and their communities. These reasons closely resembled our teachers' "student-centered" responses. However, Weilbacher also reported responses that were dissimilar to the teachers in our study. Although our teachers reported that integrating multiple standards across subject areas saved time, Weilbacher reported that for his teachers, "a difficulty with time management was the major reason that they discontinued their work in curriculum integration" (p. 22). In addition, he reported that for the teachers in his study, the required time commitments to successfully implement curriculum integration as the major planning method in their classrooms took an emotional and familial toll. However, he further added that the teachers in his study did not completely abandon integrated curriculums altogether. Rather, the teachers in his study reported that they used the method whenever then saw its benefits outweighing its costs.

Bolak, Bialach, and Dunphy (2005), reflecting on their experiences implementing and designing an integrated arts/core curriculum program using thematic units, believed that it energised teachers and students alike. Further, they believed that integrated curriculums "provide instruction that engages students, keeps them excited, and keeps them learning" (p. 19). Given the degree to which the teachers in our study planned to integrate multiple standards across a variety of subjects, curriculum integration, at least for these teachers, will continue to be a viable method in the learning process for both students and teachers alike. Perhaps as teachers become more familiar with their various local, state, and national content standards and techniques for integrating various curriculums, teachers will exemplify Vars' (2001) comment that "it is possible to retain significant features of curriculum integration, teach the most important state and district standards, and do it all in a way that advances the ultimate purposes of education in a democracy" (p. 15).

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