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TEACHERS' PERCEPTIONS ON THE EFFECTIVENESS OF CURRICULUM MAPPING: THE CASE OF TURKEY'

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Abstract
The purpose of this quantitative survey study is to investigate the perceptions of teachers in Turkey about curriculum mapping process in three perspectives, short-range planning, long-range planning and standard alignment. The teachers' (n=136) perceptions on curriculum mapping are influenced by many factors. The study addresses to the factors having effects on the teachers' perceptions. The research findings demonstrate that the most influential factors are years of teaching experience, devoted time and self-knowledge. The comparative analysis indicate that the teachers who have more experience, spend more time and prior knowledge about curriculum mapping consider curriculum mapping as an effective tool for curriculum planning.

Key Words: curriculum mapping, curriculum development, curriculum planning, teachers, standard alignment.

INTRODUCTION

Developing curriculum is a comprehensive and multidimensional process, in which curriculum is planned, designed and then implemented in the classrooms (Oliva, 2009; Ornstein & Hunkins, 2009). The responsibility of curriculum development process resides in the hand of outside experts or national specialists (Dogan, 2012). This approach separates curriculum from instruction (Clandinin & Connelly, 1992), and prevents schools from having a unique structure and culture (Carl, 2009). Because of this characteristic of the process, according to Marsh (2009), the active participation of teachers in curriculum planning is limited and teachers are regarded as curriculum implementers whose role is to adapt official curriculum to their classroom.

On the other hand, there has been an inclination in the educational field from teacher-as-an-implementer to teacher-as-a-designer. This means that curriculum development processes can be at school level having different methods of implementation (Marsh, 2009). As Kelly (2004) indicates this approach to curriculum development includes a dynamic process in which there are great opportunities for effective adaptation of curriculum to each school and its students. Bolstad (2004) also states that this approach allows teachers to control their own working environment. There are a number of curriculum development models attributing teachers to an essential role as a curriculum designer. One of them is curriculum mapping. It is a new and innovative approach to curriculum development process in which curriculum planning, teacher-teacher collaboration, reflective inquiry, technology integration, and academic standards are included as important components (Benade, 2008; Indiana Department of Education, 2007; 2009; Jacobs, 1997; Jacobs & Johnson, 2009; Kercheval & Newbill, 2001; Udelhofen, 2005; Virginia Department of Education, 2000).

PROBLEM OF THE RESEARCH

Curriculum mapping has been widely used in Turkey since 2008 (Dogan, 2012) and there are some conditions justifying the use of curriculum mapping. According to Lucas (2005), teachers are the primary and most

effective practitioners in developing curriculum. However, in Turkey teachers are not provided with opportunities to develop curriculum at school level, especially in public schools (Bumen, 2006; Karakaya, 2004; Yuksel, 2004). Instead, Ministry of National Education (MoNE) and Boards of Education and Discipline (BoED) prepare curriculum for nationwide use and it is obligatory for schools to apply official curriculum (MoNE, 2007; BoED, 2005). It is a fact that there have been some differences, inconsistencies and gaps between official/written/planned/intended/formal curriculum (Hale, 2008; McNeil, 2006; Ornstein & Hunkins, 2009; Posner, 2004; Wiles, 2005) and taught/operational/experienced curriculum (English, 1980; Hale & Dunlop, 2010; Weber, 2011). In other words, Harden (2001) emphasized that what is intended to be covered in the class does not overlap what has been actually taught and/or learned. These differences cause curriculum to be inconsistent and ineffective which, in turn, affect the academic achievement and school performance of students (Lucas, 2005). In addition, the lack of teachers' responsibility in planning curriculum restrains closing the gap between official curriculum and taught curriculum. However, some private schools in Turkey adapt official curriculum to their own school settings (Demirel, 2009). Some of these schools have been trying to benefit from curriculum mapping to shape official curriculum by giving teachers responsibility to develop curriculum. In this context, it is important to have an idea and evidences about what teachers think about developing school curriculum.

From another perspective, because teachers do not have a choice of selecting the content or goals of the instruction, they have to understand what official curriculum indicates. However, for teachers, official curriculum seems to be such a vague guide which makes it impossible to examine the weakness of instructional planning (English, 1983; Jacobs, 1997). Therefore, there is a need for better ways to examine official curriculum. One of the effective ways to do so is collaboration of teachers in curriculum planning. As Uchiyama & Radin (2009) state working together is the beginning of the process of comprehension, especially in a joint intellectual effort. Since curriculum mapping provides a basis for teachers to engage in curriculum planning, it is worth of teacher-teacher collaboration (Udelhofen, 2005).

Although there are some international studies (including Beans, 2006; Fairris, 2008; Hinton, 2005; Huffman, 2002; Lucas, 2005; Shilling, 2011; Wilansky, 2005) investigating curriculum mapping in various aspects, such as implementation, effects on collaboration, and academic achievement, there is limited information and evidence about how teachers in Turkey perceive curriculum mapping as a curriculum planning tool. As a matter of fact, previous researches do not address the question as to which factors and variables affect the perceptions of teachers about curriculum mapping. Although these researches investigate curriculum mapping in various aspects and nearly all of them are in the US, there is a need to address how teachers in Turkish schools perceive curriculum mapping. To determine curriculum mapping as a global curriculum development approach used in every culture and by every teacher, the perceptions of teachers should be examined in different countries.

Based on the review of the available literature, in Turkey there is a lack of knowledge about the evaluation of the usefulness of curriculum mapping as a tool for curriculum planning. Thus, this study is significant because it is one of the two studies related to the current state of Turkey. Furthermore, in an effort to offer a comprehensive curriculum development model to the schools in Turkey, this study will put curriculum mapping on the stage as a new and innovative mechanism in order to enrich official curriculum and also to plan coherent and quality curriculum. Thus, the purpose of the study is to investigate and describe the perceptions of teachers about the effectiveness of curriculum mapping on three perspectives: short-range planning, long-range planning, and standard alignment.

By exploring the perceptions of teachers, school administrators can identify potential issues, strengths and/or weakness that arise in the process of curriculum mapping, and curriculum coordinators can better understand the circumstances in which teachers develop curriculum. Furthermore, Turkish researchers will become aware of this new approach of curriculum development and its effectiveness on curriculum planning.

Curriculum mapping, in its most basic definition, is a process of recording of various information/data related to what is taught in the classroom to an electronic system, similar to an agenda by teachers. Curriculum maps

originating within this process, express goals, subject matter and content covered in real class settings, but not the lesson planned (Jacobs, 1997).

In a broader sense, curriculum mapping is a comprehensive process that covers many activities such as organizing teacher training sessions and learning environment, forming a professional learning community, planning, implementing and evaluating instruction, making decisions through professional collaboration, and arranging physical and visual fields of classrooms (English, 1983; Hale, 2008; Hale and Dunlap, 2010; Jacobs, 2010; Jacobs & Johnson, 2009). With the help of technological support, curriculum mapping allows immediate changes in curriculum without time and space limitation and sharing such changes with relevant people (teachers, education specialists etc.) in a rapid manner (Allen, Hoffman, Kompella, & Sticht, 1993; Clough, James & Witcher, 1996; Hale, 2008; Huffmann, 2002; Udelhofen, 2005). Accordingly, it provides an opportunity for teachers to professionally collaborate not only with teachers from same subject and grade but also with teachers from other subjects and grades both online and under real-time conditions (Burns, 2001; Hale, 2008; Jacobs, 2003; Koppang, 2004).

The most important role of curriculum mapping in planning curriculum is that it eliminates differences between planned and taught curriculum and curricular elements (such as goals, content, learning experiences and assessment) (Christy, 2003; Glatthorn, 1999; Jacobs & Johnson, 2009; Lucas, 2005; Marzano, 2003; Marzano & Kendall, 1998). In addition, curriculum mapping is a practical system that can be used in alignment of the content in accordance with academic content standards (DeClark, 2002; Koppang, 2004; Wilansky, 2005) and that contributes to the development of vision and mission unique to the school (Hale, 2008; Jacobs, 1997; Udelhofen, 2005).

Reviewing the literature shows that curriculum mapping has been investigated in various aspects, in many different schools and countries. Huffman (2002), first available research on this topic examining the perceptions of teachers, found out that curriculum mapping is perceived as a valuable tool in school reform and in improving student learning and curriculum. The factors having effects on teachers' perceptions appeared teaching experience, professional development training taken, and time allocated for curriculum mapping. Wilansky (2005) also investigated teacher attitudes toward curriculum mapping and demonstrated that teachers think that curriculum mapping improves instruction and curriculum planning efforts in three areas of professional collaboration, standards alignment, and assessment. In addition, the use of curriculum mapping software system would enhance and facilitate the planning process in this study. Likewise, Lucas (2005) showed that curriculum mapping is particularly effective for curriculum planning and standards alignment. Shilling (2011) recognized that teachers think positively and specified numerous benefits of curriculum mapping. As for Turkish school context, Dogan (2012) demonstrated that teachers having five or more years of teaching experiences and taking one or more professional development trainings have positive views of curriculum mapping and they consider curriculum mapping as having positive effects on collaboration and standards alignment.

Other studies have addressed the academic achievement of students. Shanks (2002) compared the student achievement of schools using and not using curriculum mapping and concluded that students with curriculum mapping score higher than without curriculum mapping. Moreover, Fairris (2008) indicated that the schools implementing curriculum mapping in higher degree are successful in the Benchmark Examination and Lenz, Adams, Bulgren, Pouliot & Laraux (2002) suggested that using curriculum maps enhance disabled student learning.

Past studies suggested that for effective curriculum mapping implementation there needs professional trainings, teacher-teacher support and collaboration (Beans, 2006); that principals in the school should responsible for the management of the mapping process (Habegger, 2007); that a software and related training is necessary for teachers to fully understand and implement curriculum mapping (Mathiessen, 2008); that curriculum mapping process improves collaboration and professionalism among teachers (Browne, 2009; Uchiyama & Radin, 2009); that administrative leadership influences teachers perceptions and administrative responsibilities in implementing curriculum mapping affect the whole process (Lyle, 2010).

On the other hand, the effects of curriculum mapping on teaching activities have been examined by Hinton (2005). He found out that the lack of support, consensus and faith among faculties prevent curriculum mapping from being a fruitful process. Curriculum mapping is seemed to be an isolated curriculum development activity not having influences on teachers' choices of teaching methods and techniques. The researches relating to curriculum mapping suggest a number of themes including attitudes of teacher, effects on student achievement, teacher-teacher collaboration, and leadership roles. In addition, they do not only have positive results but also negative findings about curriculum mapping process.

To guide the study, the following research questions are identified:

- Which factors have effects on the teachers' perceptions about curriculum mapping?
- Do teachers' perceptions of the effectiveness of curriculum mapping differ according to years of teaching experience?
- Do teachers' perceptions of the effectiveness of curriculum mapping differ according to amount of time teachers devote to curriculum mapping in a week?
- Do teachers' perceptions of the effectiveness of curriculum mapping differ according to teachers' self-assessment of knowledge about curriculum mapping?

METHOD

Design of the Research

This study is employed on quantitative design within, descriptive, and cross-sectional survey that is suggested by Creswell (2012). This survey is administered to a sample to describe and examine teachers' perceptions of curriculum mapping by researcher.

Sample of Research

A convenience sampling method was used to recruit target population for this study because the participants are eager and convenient for the researcher and available to be studied (Creswell, 2012). The participants were a group of teachers from seven middle and high schools using curriculum mapping. The number of schools was identified by the researcher via telephone calls and e-mails to school administrators. The researcher offered all the schools to participate in this study. The three schools were volunteers from Istanbul, Ankara and Izmir. Thus, the number of the teachers in these schools is 186 in total; the sample of the study contained 136 teachers (73% rate). The descriptive statistics about the sample are provided in Table 1. All of the participant teachers speak English either as a native speaker or as a second language fluently. Most of the teachers instruct in English regardless of the content taught.

Table 1: Demographic Information of the Sample

Variables	Categories	Frequency	Percent
Instruction Level	Middle and Secondary	10	7.4
	High School	126	92.6
Education Level	Undergraduate Degree	51	37.5
	Graduate Degree	85	62.5
Teaching Experiences	1-5 years	11	8.1
	6-10 years	31	22.8
	11-15 years	40	29.4
	16-20 years	18	13.2
	25 and more years	36	26.5
Subject Areas	Quantitative Areas (Maths, Science etc.)	38	27.9
	Qualitative Areas (Literature, History etc.)	25	18.4
	Foreign Languages	50	36.8
	Art and Sports	16	11.8
	Not Specified	7	5.1

Instrument and Procedures

The data gathering instrument was Curriculum Mapping as a Planning and Alignment Tool Survey developed by Lucas (2005). The developer of the survey has granted permission to use the survey. The survey required approximately 15 minutes to complete and consisted of three main parts. The first part was short-range planning efforts, which investigated the use of periodic short-range instructional unit designed to accomplish specific learning objectives. The second part was long-range planning efforts emphasizing on the overall strategy for facilitating student achievement by establishing long-range planning in an efficient manner. The last part of the survey was standard alignment efforts, dealing with the link among national standards and curriculum, methods, and assessment. It had totally 24 items, ten items for short-range planning, eight items for long-range planning, and six items for standard alignment. The survey was a five point Likert type having the choices of strongly disagree, disagree, undecided, agree, and strongly agree.

As for the validity of the survey, the developer use content validity. The survey instrument stems were adapted from the planning criteria developed by the South Carolina Department of Education. They are all based on the Model Standards for Beginning Teacher Assessment and Support Consortium and the National Board of Teaching Standards. In addition, panels of school testing service experts, having Ph.D. degree, review the survey for content validity. Their comments and suggestions were used to refine the final form of the survey. As far as reliability of the survey is concerned, the developer did not provide any data.

In addition to the original items in the survey, eight items were added at the beginning of the survey to obtain descriptive information about the teachers. The items asked for instruction level, education levels of teachers, years of teaching experience, subject areas, amount of professional development training teachers have taken, amount of time teachers devote to curriculum mapping in a week, amount of time teachers have used curriculum mapping, and teachers' self-assessment of knowledge about curriculum mapping. After the application of the survey to the schools in Turkey, the reliability coefficient was calculated as follows: Short-range effort's Alpha is .963, Long-range efforts's Alpha is .964, Standard alignment's Alpha is .970. According to George & Mallery (2003), because these results are high, it can be appropriate to use in this study.

First of all, the researcher adapted the survey items to a web-based questionnaire and uploaded the form to SurveyMonkey. The links related to SurveyMonkey were sent to the school administrators. Then, the administrators have sent the link of the survey to the teachers. The survey link was available from 25th January to 1st April, 2012. While the link was online, the school administrators sent reminders to teachers once a week so that they filled the survey. As a result, at the date of 2nd April, the link became offline. All the responses to the survey were confidential. Neither the names of the teachers nor the schools were collected from the survey. There were no anticipated risks or discomfort from participation in this research. After the link became offline, the data was collected and analyzed using SPSS 20. The statistical analysis of the data was made, firstly, using Sample K-S to test homogeneity and then Kruskal-Wallis H and Mann-Whitney U tests were used.

FINDINGS

Because the data was not normally distributed, the non-parametric tests were used to compare the related groups. Based on the findings from Mann-Whitney U and Kruskal-Wallis H, education level of the teachers, subject areas, amount of professional development training teachers have taken, amount of time teachers have used curriculum mapping do not have any effect on the teachers' perceptions about curriculum mapping. Therefore, the comparative analysis were made for the three variables: teaching experiences, amount of time teachers devote to curriculum mapping in a week and teachers' self-assessment of knowledge about curriculum mapping (shown in the following tables).

Table 2: Kruskal-Wallis H Test Results for Teaching Experience Comparison

Factors	Variables	Groups	Mean Rank	x^2	df	p
Teaching experiences	Short-Range Planning	1-5 years	40.68	17.89	4	.001
		6-10 years	86.89			
		11-15 years	76.09			
		16-20 years	57.50			
		25 and more years	58.24			
	Long-Range Planning	1-5 years	48.00	13.25	4	.010
		6-10 years	81.76			
		11-15 years	76.98			
		16-20 years	67.94			
		25 and more years	54.21			
	Standard Alignment	1-5 years	46.14	15.45	4	.004
		6-10 years	89.71			
		11-15 years	65.94			
		16-20 years	66.17			
		25 and more years	57.75			

After looking for variances, Mann-Whitney U test results show that there are statistically significant differences between the teachers having 6-10 years teaching experience and those of having different years of teaching experiences.

Table 3: Kruskal-Wallis H Test Results for Devoted Time Comparison

Factors	Variables	Groups	Mean Rank	x^2	df	p
Amount of time teachers devote to curriculum mapping in a week	Short-Range Planning	None	42.76	14.52	3	.002
		1 Hour	76.27			
		2 Hours	65.54			
		3 Hours	60.50			
	Long-Range Planning	None	42.28	14.90	3	.002
		1 Hour	76.50			
		2 Hours	64.63			
		3 Hours	61.73			
	Standard Alignment	None	47.00	12.71	3	.005
		1 Hour	77.17			
		2 Hours	59.46			
		3 Hours	61.18			

After looking for variances, Mann-Whitney U test results show that there are statistically significant differences between the teachers who do not devote any time to curriculum mapping in a week and those of devoting one or more hours to curriculum mapping in a week.

Table 4: Kruskal-Wallis H Test Results for Self-Knowledge Comparison

Factors	Variables	Groups	Mean Rank	x^2	df	p
Teachers' self-assessment of knowledge about curriculum	Short-Range Planning	1 (very little)	22.33	11.36	4	.023
		2 (little)	55.68			
		3 (average)	65.03			
		4 (more)	67.51			
		5 (much more)	110.13			
	Long-Range Planning	1 (very little)	24.67	11.53	4	.021
		2 (little)	52.58			

mapping		3 (average)	62.99			
		4 (more)	71.38			
		5 (much more)	103.25			
	Standard Alignment	1 (very little)	35.50	7.38	4	.117
		2 (little)	51.24			
		3 (average)	64.86			
		4 (more)	70.19			
		5 (much more)	90.75			

After looking for variances, Mann-Whitney U test results show that there are statistically significant differences between the teachers who have very little knowledge about curriculum mapping and those of having average and much more knowledge about curriculum mapping.

DISCUSSION

Generally the results of the study indicate three important points related to the effectiveness of curriculum mapping. The first one is that compared to the lower and higher experienced teachers, the teachers having 6-10 years of teaching experiences consider curriculum mapping as an effective tool for short-range planning, long-range planning and standard alignment. Secondly, the teachers who devote at least one hour to curriculum mapping in a week have positive perceptions towards curriculum mapping in regard to short-range planning, long-range planning and standard alignment. The third result of the study indicates that compared to the teachers having very little knowledge about curriculum mapping, the teachers having average and much more knowledge about curriculum mapping consider this approach as an effective tool for short-range planning, long-range planning and standard alignment.

The reason why 6-10-year-experienced teachers perceive curriculum mapping as an effective tool for curriculum planning can be attributable to their characteristics in their career cycle. Because they are in competency phase of their careers, they tend to learn new teaching and learning approaches, develop their teaching skills, and are open to new challenges and experiences (Bakioğlu, 1996; Huberman, Thompson & Weiland, 1997; Lynn, 2002; Oplatka, 2005). This finding is also supported by Tan, Fincher, Manross, Harrington & Schempp's (1994) research which found out that the advanced beginner (6-10 years) teachers have every confidence of making decision about curriculum and instruction. They are able to revise and improve their curriculum during school years. In addition, other researches on curriculum mapping showed that the teachers (having 6-10 years experiences) consider this approach as an efficient way of standard alignment (Lucas, 2005; Lyle, 2010).

Teachers spending more time on curriculum mapping perceive it as an effective tool for curriculum planning and standard alignment. Mathiessen (2005) demonstrated that this result is persistent with his research findings. As cited in Kitsantas & Baylor (2001) the more teachers working on curriculum design and planning, the more they understand the process. Thus, the experience the teachers obtain while using curriculum mapping have considerable impacts on their perception.
Self-knowledge or prior knowledge about curriculum mapping influences the teachers' perception. Huffmann (2002) and Lucas (2005) supported that teachers having relatively higher knowledge see curriculum mapping as an effective tool. This is because knowledge enables teachers to see curriculum and its planning from other perspectives (McGehee & Griffith, 2001). Furthermore, as Wilansky (2005) revealed that curriculum mapping knowledge provides teachers with the abilities to see the connection of the curricular elements, the importance of national standards and adaptation of curriculum according to standards.

CONCLUSIONS

Curriculum mapping is a curricular concept which is used intuitively by teachers. All teachers map their curricula according to predetermined principles, curriculum handbooks or national frameworks. What makes curriculum mapping important resides in its collaborative and lively nature. Because curriculum mapping offers

an environment in which teachers develop their curricula by working with their colleagues, they have opportunities to share opinions about curricula. This enables teachers to have different perspectives on what they plan, teach and assess. In general curriculum mapping is considered as a modern way of developing curriculum. However, it is not only a method but also a process including teacher collaboration and academic initiatives. Thus, it is important to reveal what teachers think about this process. The current research indicates that there are seven factors affecting the process of curriculum mapping. As it is expected, teachers' experiences are crucial in this process. If a teacher wants to map curriculum, the best way will be to work with experienced teachers. Maybe these long-serving teachers can be teacher-leaders to facilitate the process. In addition, teacher-leaders may have the responsibilities to keep curriculum alive by providing continuous curricular feedback for teachers, small in service trainings and instructional leadership. It is important to note that using curriculum mapping ensures coherency in both daily and yearly planning. The very advantage of this dual planning is that teachers have a structure for planning curriculum according to academic standards.

All in all, curriculum mapping is a new method to develop curriculum in Turkey. It takes some time for teachers to adapt the changes in their daily routines, which, in turn, have positive effects on their professional development, instructional choices and dialogue with other teachers.

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