

Pedagogical Content Knowledge and Emergentism: Making the Case for the Philosophical and the Aesthetic

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Abstract

To analyze the relationship between teachers' freedom and their required pedagogical content knowledge (PCK), I consider emergent curriculum as an extreme end of curricula with a lot of freedom and autonomy for teachers as opposed to a conventional prescribed curriculum in which teachers have less autonomy. In examining teachers' pedagogical content knowledge from predetermined curriculum toward emergent curriculum, I argue that required PCK is evolving. At the extreme level of teachers' freedom some substantially new aspects of PCK are needed. One of the most relevant aspects of pedagogical content knowledge for the emergent curriculum curricular knowledge. In emergent curriculum, the teacher acts as a curriculum developer as well, because curriculum is not determined in advance. Curricular knowledge requires teachers to be expert in fields of learning that are not necessary for teachers in other kinds of curriculum. In addition to substantive PCK, teachers of emergent curriculum have to be both philosophers and artists to be qualified enough to make decisions about curricular issues.

Keywords: emergent curriculum, pedagogical content knowledge, philosophical pedagogical content knowledge, aesthetic pedagogical content knowledge

Introduction

Teachers serve at the front line of an educational system and animate the curriculum. In any perspective on teachers' role in curriculum development—from the most teacher-proof curriculum (e.g., behavioristic) to the most flexible (e.g., Reggio-Emilia)—teachers are the only performers who perform on the stage. The best, most well designed curriculum will not be effective unless a competent teacher accompanies it. In other words, teachers' actions take curriculum from line drawing to colorful, enlivened reality. In the early decades of twentieth century, when modernism dominated social sciences, increasing numbers of educators eagerly accepted the doctrine of scientific approach called scientism. Many employed the rational, the precise, and the mechanistic, to address the problems of society, education, and human life. Curriculum development, looked at as a mechanical system, could be scientifically quantified and managed. Scientism could bring efficiency and effectiveness to the schools and their curricula. Franklin Bobbitt is credited with bringing the scientism and modernism message to education in general and to the field of curriculum in particular. His book, *The Curriculum*, published in 1918, is often considered the first book that identified curriculum as science. Basically, it was the responsibility of the curriculum developer to decide about what knowledge was significant for each subject, and to identify the objectives that would fit those subjects. Thus, one then had to develop those activities that would enable the learner to learn the content (Hunkins & Hammill, 1994). In scientific curriculum planning, the teacher is only a player with a bounded and defined role in the scenario called lesson planning (Parks, 2011). In an ideal classroom grounded in scientific curriculum planning, everything should be operationalized precisely as it was predicted. However, human influence in the form of the classroom teacher ineluctably has a degree of freedom to deviate from the preplanned curriculum. Since teachers have freedom in the classroom to do learning activities as well as determine learning objectives and also make decisions about content, their roles shift from actors enacting a script to designers. A designer or a curriculum developer probably requires more creativity, pedagogical knowledge, knowledge of content, and also pedagogical content knowledge. In this paper I elaborate on how emergent curriculum—as an extreme type of non-predetermined curriculum—requires teachers to have more freedom in the classroom and requires that they be more knowledgeable, particularly in their pedagogical content knowledge.

Emergent Curriculum

Emergent curriculum is a form of curriculum development based on the students' interests and passions as well as the teacher's. Emergent curriculum is based on the idea of *emergentism*, which refers to the dynamic process of emergence and development of the entity or phenomena (Yu-le, 2004). As opposed to emergence, being predefined refers to being complete and finished. While the curriculum theories of scientism represented by Tyler greatly accelerated the scientific process of curriculum development (Parks, 2011), they brought about the education critics to a certain extent. Emergent curriculum surfaced as an outcome of the criticism for scientism and predefined curriculum. An emergent curriculum is a constructive curriculum in which the teachers and students; teaching materials and environment; interact in the context of dialogue. It departs from the idea *everything is predefined* and maintains that everything is developing (Jones, Evans, & Rencken, 2001). Jones and Nimmo (1994) explain that emergent curriculum development requires observation, documentation, creative brainstorming, flexibility, and patience. Rather than starting with a lesson plan that requires a hook to get the children interested, emergent curriculum starts with the children's interests. They disagree to say that the teacher has no input. In fact teachers may well have a general topic they think is important for children to study and they may purposefully include certain materials or experiences related to it as jumping off points. We are the stage directors; curriculum is teacher's responsibility, not children's. People who hear the words emergent curriculum may wrongly assume that everything simply emerges from the children. The children's ideas are an important source of curriculum but only one of many possible sources that reflect the complex ecology of their lives. (Jones & Nimmo, 1994, p. 5). Thus, emergent curriculum requires a great deal of flexibility and creativity on the part of the teacher. Carolyn Edwards notes: "The teachers honestly do not know where the group will end up. Although this openness adds a dimension of difficulty to their work, it also makes it more exciting"

(Edwards, 1993, p. 159). Once teachers see an interest *emerging*, they brainstorm ways to study the topic in depth. Webbing as a brainstorming technique is often used because of its playful and flexible nature. A web does not show everything that will be learned; but shows many things that could be learned. However, it is important to use the webbing as a tool to open the teacher to possibilities *not* a “plan.” Using webbing, teachers brainstorm many options for study sparked from the particular interest. These possibilities for study serve not as a plan but more as a road map as one teacher put it: “To get a plan, we chose an idea and brainstormed ways that children could play it – hands-on activities we could provide. Putting all the activities on a web gives you a road map full of possible journeys” (Machado, 2003, p. 193). An idea for a curriculum topic may be sparked by anything or come from anywhere. For instance, a teacher may overhear a group of students having a discussion about bugs that leads to the class sitting down and coming up with a web topic that explores all the possible directions the class could go in their quest to learn all they can about the topic of bugs. Ideas may also be sparked by offering experiences such as taking a walk through the neighborhood, visiting local businesses, or reading books. Reggio Emilia schools are one variety of school that use emergent curriculum (Edwards, 1993), where emergent curriculum in the education of 3 to 5-year-olds helps them make the connection between symbols and objects (Gonzalez-Mena, 2005). Emergent curriculum seems to capture a paradox: a plan with logic is simply inferred by the word *curriculum*, a noun derived from the Latin infinitive *currere* which means to run a course or make one’s way around a known route (Pinar, 2004; Wien, 2008). However, in opposition to the idea of curriculum as an intentional course to follow, the word *emergent* implies an unplanned process. Therefore, emergent curriculum should be interpreted in another way. In the reconceptualist movement, curriculum is redefined as a dynamic verb rather than a static noun. Curriculum is what students experience in the school not the scenario that is written in a lesson plan or teachers’ manual (Pinar, 1995).

Yu-le (2004) enumerates key characteristics of emergent curriculum including experience, creativity, and life. It is through experience, which is personal and tacit, that students connect their understanding into a meaningful concept. This is the idea that reconceptualist theorists of curriculum have about the concept of curriculum (Eisner, 2002). Aoki (2005) briefly names traditional and reconceptualist definitions of curriculum as two approaches: “curriculum-as-plan and curriculum-as-lived-experience” (p. 160). The curriculum-as-lived-experience is ‘what it is’ rather than ‘what is supposed to be’ because it is lived by the teacher and students at any given moment in the classroom. Emergent curriculum also requires the teacher to be creative and act spontaneously (Yu-le, 2004). This perspective describes teachers as artists who create their masterpieces while teaching (Eisner, 2002; Greene, 1977). Teaching is an art in the sense that teachers, like painters, composers, actresses, and dancers, make judgments based largely on qualities that unfold during the course of action. Qualitative forms of intelligence are used to select, control, and organize classroom qualities, such as tempo, tone, climate, pace of discussion, and forward movement. The teacher must “read” the emerging qualities and respond with qualities appropriate to the ends sought or the direction he or she wishes the students to take. In the process, qualitative judgment is exercised in the interest of achieving a qualitative end. (Eisner, 2002, p. 154). Life is the soul of the emergent curriculum (Yu-le, 2004). Education addresses living the complete life, hence curriculum, as the core element of education, should value and treasure life. The curriculum not only provides the students with rich knowledge but also prepares them for a remote future and, more importantly, enhances the significance and value of life. The implementation of an emergent curriculum is actually a process in which the students display their lived abilities and acquire the knowledge needed to grow into complete human beings. The implementation of emergent curriculum is actually a dynamic, nonlinear, and self-organized process. The curriculum is being created and meaning is being constructed, so the curriculum goal, content and teaching methods should vary with the specific context and different students. This process moves beyond the limitations of the fixed and rigid procedure characteristic of implementing more predetermined forms of curriculum, instead allowing for mistakes and unexpected events to happen and using these indefinite factors as important curriculum resources. Unlike predetermined curriculum, emergent curriculum development is no longer a definite and closed procedure, but a complex nonlinear activity full of variables (Yu-le, 2004). These teaching qualities could be seen as pedagogical content knowledge (Shulman, 1986) in

a sense that it lays at the intersection of teachers' understanding about content knowledge and pedagogical knowledge.

Pedagogical Content Knowledge

In 1986, Lee Shulman offered a new model and set of hypothetical domains of teacher knowledge. In reaction to the dominant educational research in teacher education, he argued that the relationship between teachers' understanding of subject (subject matter knowledge) and the instruction (pedagogical knowledge) that they provide for students may be "the missing paradigm" (Shulman, 1986, p. 6) in educational research. Shulman (1986) suggests a kind of content knowledge, which is called pedagogical content knowledge (PCK). PCK goes beyond knowledge of subject matter to the dimension of subject matter knowledge for teaching. It includes the most powerful representations, the most useful analogies, illustrations, examples, explanations, and any other ways of presenting a subject that would make it more comprehensive to others (students). Pedagogical content knowledge also includes an understanding of what makes the learning of specific topics easy or difficult. It may refer to students' age and backgrounds bring with them to the learning. PCK is concerned with the representation and formulation of concepts, pedagogical techniques, knowledge of what makes concepts difficult or easy to learn, knowledge of students' prior knowledge, and theories of epistemology. It also involves knowledge of teaching strategies that incorporate appropriate conceptual representations, to address learner difficulties and misconceptions and foster meaningful understanding. It also includes knowledge of what the students bring to the learning situation, knowledge that might be either facilitative or dysfunctional for the particular learning task at hand. This knowledge of students includes their strategies, prior conceptions, and even misconceptions students are likely to have about a particular domain and potential misapplications of prior knowledge. PCK exists at the intersection of content and pedagogy (Gess-Newsome, 1999, 2002; Shulman, 1986, 2004). PCK represents the combination of content and pedagogy into an understanding of how aspects of subject matter are organized, adapted, and prepared for instruction.

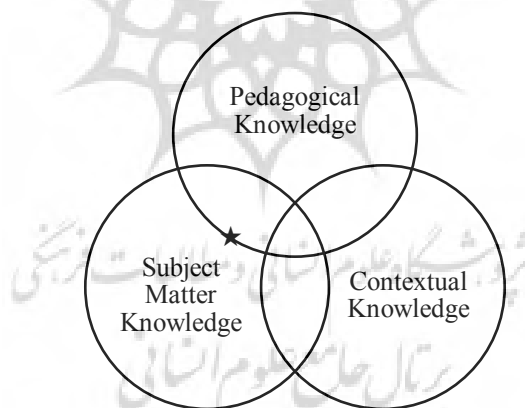


Figure.1 Knowledge needed for classroom teaching (Gess-Newsome, 1999, p. 12)

Shulman (1998) argues that having knowledge of subject matter and general pedagogical strategies, though necessary, was not sufficient for covering the required knowledge of good teachers. To specify the complex ways in which teachers think about how particular content should be taught, he argued for pedagogical content knowledge as a content knowledge that deals with the teaching process. If teachers were to be successful they would have to confront both issues (of content and pedagogy) simultaneously, by embodying "the aspects of content most germane to its teachability" (Shulman, 1986, p. 9). At the heart of PCK is the manner in which subject matter is transformed for teaching. This occurs when the teacher interprets the subject matter, finding different ways to represent it and make it accessible to learners. Teachers who demonstrate PCK can reproduce subject matter into digestible form, which can be easily learned by studentsⁱ

Pedagogical Content Knowledge in Emergent Curriculum

Teachers' participation in curriculum development is a key indicator for teachers' freedom. Therefore, to analyze that how changes in curriculum—especially changes in teachers' role in curriculum development—will cause changes in level or form of pedagogical content knowledge, a brief study in the history of teachers' participation in curriculum development would be an inspiring path. Teacher involvement in curriculum development is not a new idea in education. There is a significant historical record concerning both theory and practice. Writing on the idea can be found as early as 1903 with Dewey's article entitled "Democracy in Education," in which he argues for teachers taking an active role in decision making about textbooks, curriculum, and other issues engaged in the work of teaching (Dewey, 1903). One example of teacher participation in curriculum development at the building level occurred from 1896 to 1903 at the Laboratory School of the University of Chicago, which became known as the Dewey School (Bennett, 2002). Tanner and Tanner (1995) asserted, "the Laboratory School appears to have pioneered in collaborative decision making and teacher reflection" (p. 65). Bennett (2002) simply describes that in all large scale efforts to involve teachers in curriculum development—including projects at the school level (e.g., the Dewey School, 1896-1903), at the system level (e.g. the Denver Curriculum Revision Project, 1923-1928), and at the state level (e.g., the Virginia Curriculum Revision Program, 1931) though the projects were designed as team projects, teachers needed more knowledge in different domains. In recent years, there has been a trend to encourage what is fondly called school-based (or teacher-based) curriculum development (Hofstein, Carmeli, & Shore, 2004). For many years, teachers were exposed to top-down experiences in which the teachers passively received knowledge and curricular ideas. In contrast, the emphasis in school-based curriculum development program was on the active participation of the teachers in their learning and on coaching them to adopt, whenever necessary, bottom-up strategies. The school is a social institution. It involves complex transactions with the environment, exchanging ideas, resources, and people through a network of communication systems. The ability of a school to respond rather than merely adjust uncritically to the demands of the environment depends upon its reasonable freedom to build up its own curriculum on an exchange basis. Centre for Educational Research and Innovation (CERI) points out that this reasonable freedom requires a higher level of knowledge for teachers to perform in a desirable state of teaching (CERI, 1979). Other researchers also confirm this idea that since teachers have more freedom in the classroom they should be able to make proper decisions. It means they have to be more capable, more qualified, more knowledgeable, and more competent (CERI, 1979; Hofstein et al., 2004; Lampert, 1985; Marsh, 1990; May, 1993; Skilbeck, 1984; Xu & Wong, 2011). Yu-le (2004) believes that the traditional role of the teacher as passive knowledge transmitter cannot meet the need of the emergent curriculum, because the teacher in an emergent curriculum must be an active curriculum researcher and creator. Teachers not only need to consider what to teach and how to teach, but also why to teach. The teacher begins the curriculum research and innovation rooted in the authentic educational settings, and, in the process, the teacher turns into a researcher. In the teacher-proof strategy adopted in the predefined curriculum, the teacher is excluded in the curriculum development and has no right to sound their voice, no right to alter the curriculum, and no need to consider the issues related to the curriculum. Instead, what the teacher needs to do is just faithfully and effectively implement the curriculum (Yu-le, 2004). The teacher in an emergent curriculum context is both a curriculum developer and a scientist at the same time that has both components of pedagogical content knowledge. Gess-Newsome (1999) in a conceptual map simply shows relationships between and among different domains of teacher knowledge with PCK. This graph was designed to demonstrate teacher's required knowledge to teach science but almost any other subject can be replaced in the same graph.

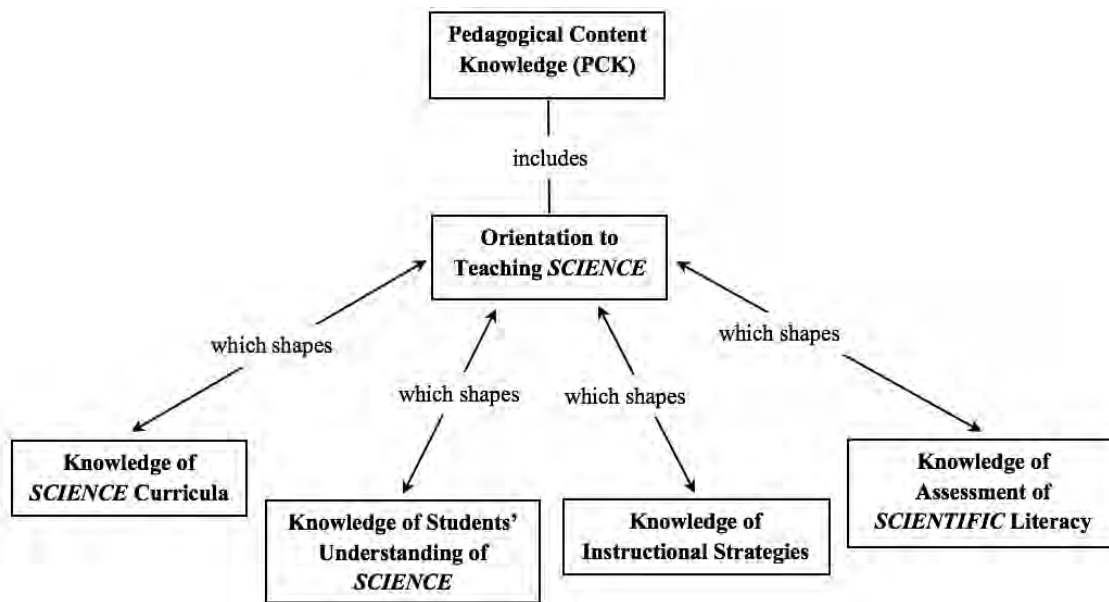


Figure.2 PCK Components (Gess-Newsome, 1999, p. 99)

Since the main focus of this paper is on the curriculum and PCK, the discussion will be centered on what is called “Knowledge of Subject Curricula.” Basically three foundations form the basis for every curriculum: psychological, sociological, and philosophical foundations (Bristow, 1948). In every curriculum, even among the most predetermined curricula, teachers need a minimum level of psychological and sociological knowledge, but usually teachers lack philosophical foundations (Curtis, 2008). In an emergent or school based curriculum development, teachers have to be both researchers and curriculum developers. This involves them in theoretical decision-making that cannot be properly done without mastery in theoretical knowledge in curriculum studies, philosophical foundations, and even critical analysis. Teachers in an emergent curriculum are supposed to be educational philosophers. It does not mean that they have to be theorists who have their own philosophical theories, but they have to be eclectic (May, 1993; Schwab, 1971; Shulman, 1984). Eclecticism includes both theory and practice of taking and combining elements from many different educational philosophies, curriculum theories, as well as merging or adopting other educators’ practices. This does not simply mean mixing whatever teachers find valuable, but a philosophical pedagogical content knowledge is needed to analyze the possibility of synthesizing those elements regarding to their theoretical paradigms. Lack of this knowledge may result in paradoxical combinations or more probably not having synergistically the best composition.

Eisner (2002) argues for the role of theories in teaching. Having the assumption that teachers should be curriculum planners, he emphasizes the notion that teachers must be eclectic, polyfocal (be able to use different ideological lenses), and employ curriculum theories deliberately (Eisner, 2002). Schwab in his writings has pointed to the necessity of being practical for curriculum developers using the term “Arts of Practical” (Schwab, 1971, p. 14). Though he draws a line between teaching and curriculum development as a practical theorist, not a practitioner (a curriculum planner or a teacher), Schwab’s points are very helpful to imagine a teacher in emergent curriculum. He states that curriculum planners should have mastery in theories of curriculum to enable them to have a wide perspective toward curriculum theories, rather than being drawn into a single ideology. Deliberation in Schwab’s perspective means that each theory can potentially be employed in curriculum. This deliberation cannot come into being unless curriculum planners know different aspects of theories, critics, conflicts, strengths, and weaknesses of various theories. This requires a high level of philosophical knowledge and familiarity with educational ideology as well as curriculum theories. Curriculum development in an emergent curriculum context is heuristic rather than being algorithmic. Teachers are not supposed to have a formula to plan their actions in the classroom, but they have to, instead, make decisions in a continuous circle of action-decision. Stacey (2011) suggests a

continuous circle to demonstrate how teachers in emergent curriculum act. She describes the circle: Beginning with observation and formulation of questions, emergent curriculum follows a continuous cycle of observation, reflection, and response. The reflective piece of this cycle allows time for teacher to discuss what the children are doing and to develop a response. (Stacey, 2011, p. 6)

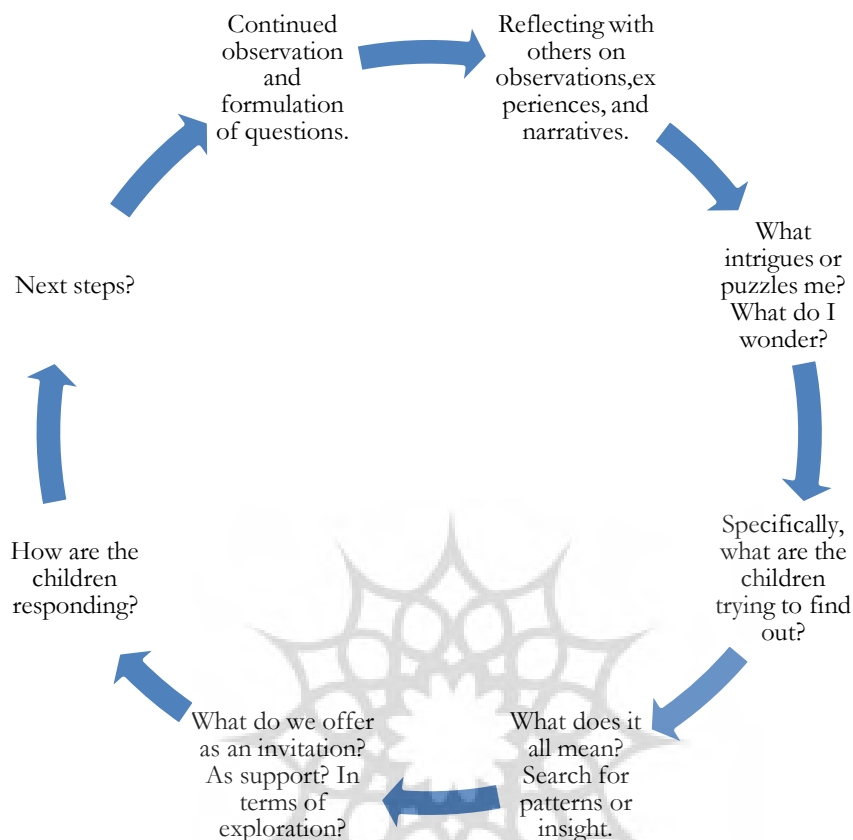


Figure.3 A Continuous Cycle (Stacey, 2011, p. 6)

In emergent curriculum, teachers are making decisions continuously. One of the most important and challenging issues that teachers have to decide is the topic. Here “topic” is used to cover a variety of traditional curriculum elements such as objectives, content, and learning activities. Topic also includes different suggestion by those curriculum theorists who prefer their own definitions and vocabulary; e.g., Elliot Eisner (2002) suggests “expressive outcomes” instead of educational objectives. One of the most challenging tasks of a teacher is picking an issue among lots of events that are happening in the classroom, whether the teacher has had the chance to observe it or not. Whatever teachers select among their observations is based on their ideological perspective and their knowledge of curriculum foundations. Even those issues that are neglected or ignored represent a specific way of observation in the classroom. This issue is also problematic in other models of curriculum development where Eisner (2002) beautifully describes it using the term of “Null Curriculum”: It is my thesis that what schools do not teach may be as important as what they do teach. Ignorance is not simply a neutral void; it has important effects on the kinds of options one is able to consider, the alternatives that one can examine, and the perspectives from which one can view a situation or problems. The absence of a set of considerations or perspectives or the inability to use certain processes for appraising a context biases the evidence one is able to take into account. A parochial perspective or simplistic analysis is the inevitable progeny of ignorance. (Eisner, 2002, p. 83) This point also emphasizes the philosophical knowledge of a teacher for teaching in emergent curriculum. Emergent curriculum involves a democratic relationship between teacher and students as well as a democratic relationship among students. Democracy in curriculum can also be interpreted as a democratic interaction among subjects. A participatory democracy, in addition to collective decision-

making and resolution, addresses the process of active inclusion of all members in the on-going development of a community. In a participatory democracy within a classroom setting, students simultaneously have individual autonomy and responsibility to the community (Steve & Anthony, 2008). These seemingly competing concepts can be unified when existing in a caring, respectful environment, one where there is a strong desire on the part of individuals to develop and strengthen their own community for the betterment of all members. A participatory democracy in the classroom promotes learning in an active, practical, and relevant context. The community is in a continual state of renewal as its members grow within its influence while also influencing the community's growth. A teacher's role as an authority in the classroom is also institutionalized, as well it should be. The teacher is an adult and children intuitively and sensibly view adults as authority figures due to their upbringing, again for good reason (Steve & Anthony, 2008). In emergent curriculum, though teacher-students interaction should determine the curriculum decisions, the teacher basically has the ultimate authority. This authority and continuity in addition to spontaneous decision making and, of course, a heuristic method of teaching enforce the notion of the role of teacher as artist. Eisner (2002) presents four senses for his claim that teaching is an art. First, he describes teaching as an art because teaching can be performed with such skill and grace for both students and the teacher. This dimension of teaching can be justifiably characterized as aesthetic. There are many classes in which one can find teachers' performance, learning activities, questions, lectures, and dialogues as a form of artistic expression. The second sense of teaching as an art is the emergence and qualitative forms of intelligence that are used to control, select, and organize the classroom. The third sense of being an art is that teachers' activities are not dominated by prescriptions or routines but are influenced by qualities and contingencies that are unpredictable. The fourth sense of teaching as an art is that the ends it achieves are often created in the process (Eisner, 2002). It is in these four senses, teaching as a source of aesthetic experience, as dependent on the perception and control of qualities, as a heuristic or adventitious activity, and as seeking emergent ends, that teaching can be regarded as an art (Eisner, 2002, p. 155). Emergent curriculum is also known as a holistic perspective toward the students (Steve & Anthony, 2008). The need for a holistic rather than a reductionist approach to curriculum leads us to the idea of en-activism. "In en-activism, instead of seeing learning as coming to know, one envisages the learner and the learned, the knower and the known, the self and the other, as co-evolving and being co-implicated" (Steve & Anthony, 2008, p. 1009). In this situation, context is neither the setting for a learning activity, nor the place where the student is. Instead, the student literally is part of the context. With en-activism the complexity of learning is emphasized. En-activism regards learning as contextualized, active, and integrated. It focuses on the social aspects of the learning environment, in which knowledge is shared among participants. Although at times we may wish to focus on a single element of learning for the purpose of clarity, we can never ignore its interconnectivity to the whole, and its inextricable attachment to the environment and culture. Learning is doing and vice versa. It is about a way of being in the world and not just responding to the world. En-activism is the practitioner's response to the complex view of student learning. Integration of the learning experience is at the heart of an en-activist approach. However, integration, within this way of thinking, is not something that is preplanned or grafted onto a learning activity. Rather, it is revealed. The world is naturally integrated. Division into arbitrary or artificial categories or disciplines has been the work of reductionist thinkers (Steve & Anthony, 2008). Many educators have worked hard to separate knowledge into isolated subjects. Once we see knowledge as divisible into separate, isolated areas, it is very difficult to locate and recognize the connections again. En-activism, on the other hand, embraces the whole. Since the real scientific world in academia, where real scientists work, is a separated organization, performing a holistic curriculum from the content aspect seems difficult for teachers.

Conclusion

When teachers have more freedom in the classroom, they have more responsibility for their decisions and their actions. This responsibility requires that they have a deeper level of pedagogical content knowledge. I have considered curricular knowledge as the most related aspects of pedagogical content knowledge to the type of curriculum in general, and to curriculum freedom in specific. In emergent curriculum, the teacher is

a curriculum planner as well, because curriculum is not determined before class. The curricular knowledge critical to PCK in emergent curriculum requires teachers to be knowledgeable in fields of knowledge that are not necessary for teachers in more predetermined kinds of curriculum. In emergent curriculum, teachers have to be philosophers to be qualified enough to make decisions about curricular issues. This theoretical knowledge is necessary because philosophy is one of the foundations of curriculum. Teachers in emergent curriculum also should be artists, because of the nature of continuous, spontaneous, heuristic, and aesthetic aspects of the curriculum. In conventional teacher education programs, teacher educators tend to read the theory, digest it, and come up with implications for teachers to utilize in their teaching. In other words, teacher educators and curricular researchers are informed by theories and teachers are merely practitioners. Considering new qualities in pedagogical content knowledge provides opportunities to disrupt the false dichotomy of theory-practice and scholar-practitioner in teaching and teacher education.

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