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Language Program Articulation: Developing a Theoretical Foundation

Catherine M. Barrette
Kate Paesani
Editors

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Chapter 2

The Theory of Constraints Thinking Process: An Approach to the Challenges of Curriculum Articulation

Adriana Murillo

Abstract

Language program articulation presents ongoing challenges to educators, in part because the descriptive nature of much of the published work is not sufficiently generalizable to the variety of contexts in which articulation must occur. As such, this chapter addresses the issue of foreign language (FL) curriculum articulation using Theory of Constraints (TOC) Thinking Process logic and tools, which offer a generalizable, process-focused alternative to previous approaches to articulation. This business-oriented model of organizational problem solving has the potential to develop effective solutions to the challenges of FL program articulation, while facilitating communication, collaboration, and agreement among participants. To introduce the reader to the TOC Thinking Process and facilitate the understanding of each tool, the key elements of this theory are summarized. Next, the TOC Thinking Process tools are applied to the Wayne State University undergraduate Spanish program. Implications for improvements to articulation and for the language program director emerge as a result of this case analysis. A discussion of the use of the TOC Thinking Process as a theoretical model of articulation, generalizable across language programs, concludes the chapter.

Introduction

In this chapter, Theory of Constraints (TOC) Thinking Process tools (Goldratt and Cox 1992) are applied to an undergraduate language program as one method of addressing the challenges of program articulation. Using this approach to organizational problem solving, this chapter seeks to add to our knowledge about articulation and thus contribute to the development of a theoretical model of language program articulation. This process-oriented approach has been effective in resolving complex problems in both business and educational contexts. It is advantageous because it allows language program participants to look at a broader spectrum of factors than is typical of other approaches to articulation, and then to examine the causal relationships among those factors. Moreover, the TOC Thinking Process encourages the involvement of all program participants because it is couched within a framework that fosters constructive, effective communication. TOC Thinking Process tools allow participants to pinpoint problems inherent in their program, identify barriers to solving those

problems, and develop concrete solutions. Instead of focusing on the *need to communicate*, with the help of TOC Thinking Process tools, program participants can focus on the *content of the communication*. This approach therefore improves upon previous articulation efforts because it facilitates this type of communication with a purpose.

The first part of this chapter identifies key issues in language program articulation that previous descriptive and theoretical accounts have left unresolved. It also underlines the importance of well-planned articulation efforts to improve foreign language (FL) programs. The second part summarizes the key elements of the TOC Thinking Process and gives an overview of the analytical tools used to solve problems. Part three presents a case study in the application of TOC Thinking Process tools to a specific curricular context—that of the Wayne State University (WSU) undergraduate Spanish program. This section starts with a brief description of the program and the key problems and obstacles impeding successful articulation, followed by the application of TOC Thinking Process tools¹ as a way of addressing problems inherent in the articulation of this program. Implications for the role of language program directors (LPDs) are discussed based upon the results of the case study. The chapter closes with concluding remarks about the utility of the TOC Thinking Process approach and its contribution to a generalizable model of language program articulation.

Toward a Process-Oriented Model of Articulation

In spite of recent efforts toward curricular reform (e.g., Byrnes 2000, 2001; Kern 2004; Maxim, this volume) and the development of coherent goals for FL teaching and learning (e.g., ACTFL 1996), the Center for Advanced Research on Language Acquisition reports that the number of students continuing to follow FL study beyond the first year of instruction decreases by approximately half for each successive year of the language (CARLA 2004). Among the most significant reasons for this decline is the lack of articulation in FL programs (Lange 1997). As a first step toward increasing the effectiveness of articulation efforts, scholars have developed various definitions of articulation. Lafayette (1980), for example, sees articulation as the linkage between what has been learned previously with what must be learned in the future. Lange (1982) understands articulation as continuity in student learning, the linkage of curricular goals, content, instruction, and assessment within and across educational levels, and the integration of FLs with other aspects of learning. Lange proposes three dimensions of articulation: **horizontal articulation** targets the coordination of any curriculum across classes at the same level; **vertical articulation** refers to the continuity of a program throughout its length within an institution; and **interdisciplinary articulation** addresses the capability of an FL as a school subject to associate with other disciplines. Byrnes defines articulation as “the interrelation and continuity of contents, curriculum, instruction, and evaluation, with the focus of all aspects on the progress of the learner toward comprehending and communicating in a second language” (2001, pp. 163–164).

As other chapters in this volume illustrate, Lange’s (1982) tripartite model has formed the basis of much of the scholarly and practical work on articulation over the past two decades (e.g., Byrnes 1990; Lally 2001; Lange 1997), allowing

researchers and practitioners to focus on the specific aspects of their language programs needing better articulation. Moreover, Lange's model has allowed the identification of key factors and goals related to the articulation of language programs. The tripartite model falls short, however, in providing a flexible, process-oriented, framework within which language program participants may identify, communicate about, and solve the problems specific to their own curricular context. A second, more practically-oriented model created through collaboration among the College Board, the New England Network of Academic Alliance, and the American Council on the Teaching of Foreign Languages has aimed to create an articulated, learning-outcomes framework matched with classroom-based assessments that ensure smooth transitions from middle school to high school, and from high school to college FL programs (Jackson and Masters-Wicks 1995). This model, although process oriented, focuses on practical solutions to articulation problems, rather than on the systematic identification of and communication about problems and solutions. Moreover, the learning-outcomes framework, along with more general efforts at language program coherence such as the *Standards for Foreign Language Learning* (ACTFL 1996), focuses more narrowly on setting curricular benchmarks and implementing assessment tools aimed at the secondary school context, and leaves aside questions relevant to the post-secondary context such as faculty responsibilities, institutional reward systems, and disciplinary differences.

Improving articulation has a direct and crucial influence on the quality, effectiveness, and comprehensiveness of a given language program. This chapter takes a novel approach to articulation, putting aside previous models in favor of the TOC Thinking Process (Goldratt and Cox 1992). This business model of organizational problem solving helps isolate problems inherent in existing language programs that may be impediments to articulation, proposes solutions to these problems, and provides a model for implementing those solutions. TOC Thinking Process tools facilitate communication, collaboration, and agreement among participants as they use each tool to solve problems. This flexible, process-oriented model is applicable to any level of instruction across institutional contexts, and thus provides a comprehensive approach to curriculum articulation with a novel perspective.

The TOC Thinking Process as a Model for Language Program Articulation

TOC, the precursor to the TOC Thinking Process, resulted from Goldratt and Cox's (1984) work on learning "how to think" by acknowledging the existence of cause-and-effect relationships that help us gain the knowledge necessary to solve a particular problem. TOC is a relatively new concept in the business environment. Most of the organizations that use TOC concepts initiated this process as a result of *The Goal* (Goldratt and Cox 1992), a business novel that introduces and exemplifies the utility and processes of TOC. Because *The Goal* uses a manufacturing company as the setting for the application of TOC tools, the theory has been used repeatedly to generate improvements in similar business settings, and has become exceedingly popular for dealing with physical production constraints. Yet because TOC has a much broader

scope than its perceived limitation to manufacturing contexts, Goldratt and Cox (1992) developed a generic approach for diagnosing and solving problems called the **TOC Thinking Process** (see also Gardiner, Blackstone, and Gardiner 1994). Goldratt and Cox (1992) argue that TOC Thinking Process tools are applicable to almost any problem in a given organization (e.g., manufacturing companies, universities, hospitals, service providers, and government agencies).

The TOC Thinking Process is applied to ascertain what factors are keeping an organization from achieving its goals. For instance, the goal of most business organizations is to make money, whereas the goal of not-for-profit health organizations might be to have high-quality, effective, and efficient service for patients. In educational organizations the goal may be to have more knowledgeable students who have completed their studies in an efficient and effective manner. In each context, factors such as efficiency, availability of trained staff, or funding may limit an organization's ability to achieve its goal. These factors are thus causes of undesirable effects; to overcome these undesirable effects, the causes must be diagnosed. The next step is to find a viable solution coupled with the pathway to get there. The TOC Thinking Process provides the necessary tools to develop, implement, and evaluate a solution (Goldratt 1990).

The majority of research on the TOC Thinking Process has focused on improving and expanding the model as it applies to the business context or on comparing it with other production theories (Rahman 1998). Applications to management (Bushong and Talbott 1999; Draman and Salhus 1998) and business contexts (Dettmer 1997) demonstrate the flexibility of this model to address diverse organizational problems. Likewise, applications of the TOC Thinking Process to service organizations illustrate its ability to improve workforce productivity and morale (Eden and Ronen 1990; Feather and Cross 1989).

In the area of management information systems education, the TOC Thinking Process has been used as a tool to help teach complex classes that cover a relatively large and fluid subject matter (Sirias 2002). The focus in these courses has been on using cooperative learning to stimulate students to work as a team on a specific case and solve problems. In the business education context, the TOC Thinking Process has been used in the classroom as a model for sharpening the problem-solving and analytical skills of marketing students (Cooper and Loe 2000).

The TOC Thinking Process has also been used to solve problems within the K-12 educational setting. TOC for Education (TOCFE) and TOC for Schools are two organizations created specifically to apply TOC logic-based tools within this context. The Web sites for each of these organizations (www.tocforeducation.com, www.tocforschools.com) provide examples of success stories of the TOC Thinking Process applied to (1) administration or school management; (2) behavior management, including conflict resolution, responsible decision-making, and peer mediation; and (3) the content of teaching and learning. For instance, according to TOCFE, the continuous use of TOC Thinking Process tools can improve the content of teaching and learning as participants redesign their curricula. The tools allow participants to analyze the relationships between information and ideas and

to identify objectives, problems, and solutions. The TOC Thinking Process tools have enormous applicability at the district, school, or classroom level because they can be used to help identify problems, test solutions, ensure consensus, foresee possible negative outcomes, and implement agreed-upon solutions.

The TOC Thinking Process can be extended to develop effective solutions to the challenges of post-secondary foreign language program articulation as well. Like the business, service, and educational contexts to which the TOC Thinking Process has already been applied, post-secondary FL program articulation is a complex process involving numerous factors and stakeholders. Successful articulation requires the collaborative identification of impediments to a coherent curriculum and the development and implementation of solutions, each stage dependent upon effective communication among program participants. As such, the TOC Thinking Process can be effectively applied to the context of post-secondary FL program articulation because it (1) provides tools for effective communication and ensures consensus, (2) enables the development of concrete solutions that address a core problem, (3) accommodates numerous factors, and (4) leads participants to develop an implementation plan in line with program goals.

TOC Thinking Process Essentials

The TOC Thinking Process starts with the premise that to improve a situation, one must answer three very important questions: (1) What to change?, (2) What to change to?, and (3) How to change? (Noreen, Smith, and Mackey 1995). The TOC Thinking Process provides analytical tools intended to address each of these questions in an integrated problem-solving methodology. The role each tool plays in the process is summarized in Figure 1.

Figure 1
The TOC Thinking Process

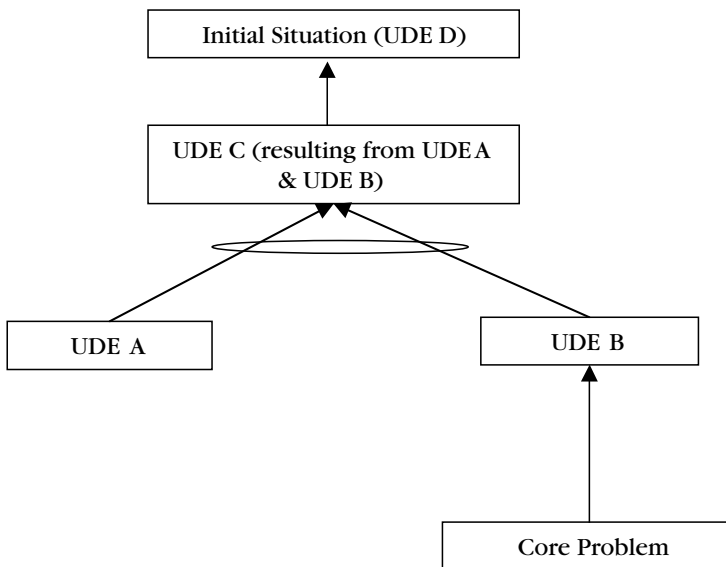


The Current Reality Tree (CRT; see Figure 2) is the tool used to answer the question “What to change?,” and serves to describe the existent problem and diagnose its causes. In the CRT, this problem is also referred to as the **initial situation**. Its central purpose is to understand how the various causes of the problem relate to one another and to narrow them down to a few causes or core problems. The **core problems** are the aspects of the initial situation that become the focus of efforts to

improve that situation. The CRT is thus valuable in assuring agreement among the people involved in solving the problem. The process of creating a CRT begins with a list of symptoms, or **Undesirable Effects** (UDEs), describing the initial situation. This list of UDEs is developed using collective intelligence—in other words, the experience and intuition of the individuals involved.

The basic goal of generating and analyzing the list of UDEs is to find a pattern of symptoms with a single common cause. Related symptoms contributing to a particular aspect of the situation are tied together using cause-and-effect logic. By systematically identifying these relationships among the UDEs, a formal cause-and-effect map, or CRT, can be assembled. This map is presented in the form of a tree structure consisting of connected clusters of statements associated with the initial situation. Circles clustering two statements in the map indicate that both factors are required for the indicated outcome to occur; the presence of only one of these factors is not sufficient.

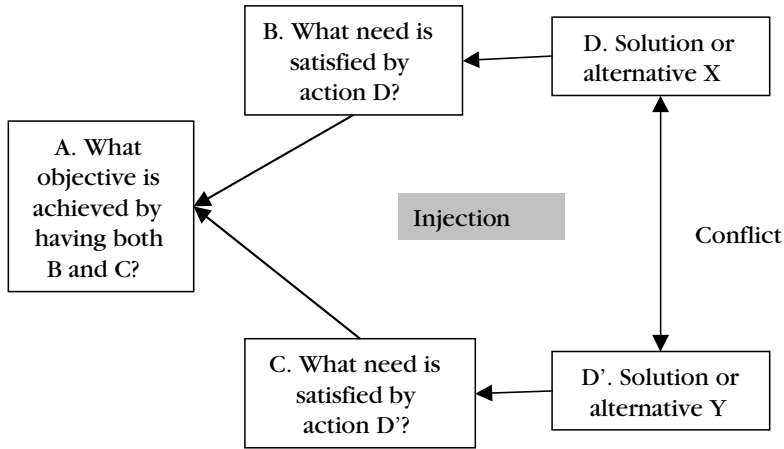
Figure 2
Generic Current Reality Tree



With the core problem(s) identified, participants focus on answering the second question in the TOC Thinking Process: What to change to? The tools used to answer this question are the Evaporating Cloud (EC) and the Future Reality Tree (FRT). Usually by stating the opposite of the core problem one can find its solution, or **objective** (e.g., if the core problem is that faculty are not rewarded for articulation efforts, the objective, or opposite of the core problem, is that they are rewarded for

these efforts). In some cases, the objective is not straightforward because of a conflict or dilemma that must be resolved using an **injection**, a win-win solution. The EC (Figure 3) helps participants articulate and understand this conflict and provides a way to delineate and scrutinize the assumptions behind it. In Figure 3 (adapted from Low 1999), *D* and *D'* are potential solutions to a core problem identified in the CRT. *B* and *C* are strategies for achieving these solutions. *A* is the objective. The assumptions underlying the relationships between each of the boxes are listed below the EC; evaluation of these assumptions facilitates the development of an injection. The injection falsifies the assumption and provides a strategy that is likely to lead to a win-win situation by breaking the conflict in the EC.

Figure 3
Generic Evaporating Cloud

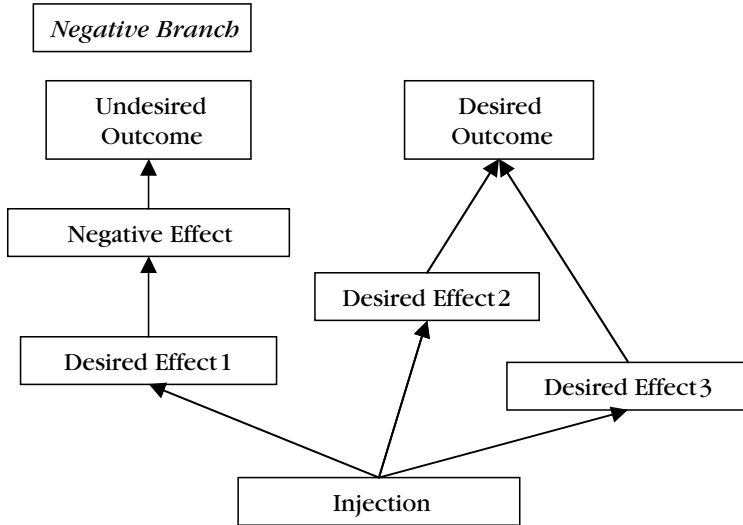


Identify a list of assumptions for each arrow (AB, AC, BD, CD' & DD') and develop the injection

The injection, once identified, serves as the basis of the solution to the initial situation; however, this injection is not sufficient to resolve the core problem. In fact, to be certain that the proposed solution is undeniably a sound idea, it is necessary to construct an FRT (Figure 4) to check the consequences of implementing that idea. The second step in determining what to change to is to use the FRT to test whether the solution will have the expected positive effect. This tool provides a picture of what the future can look like provided that we know how to implement the solution. Furthermore, with this tool it is possible to anticipate undesirable outcomes, to explore them, and to determine what added changes may be required to avoid them.

Using the FRT, one can not only predict the potential consequences of implementing the injection, but also add more injections to strengthen the solution. The FRT can also be used to predict potential negative outcomes caused by certain injections into the solution.

Figure 4
Generic Future Reality Tree

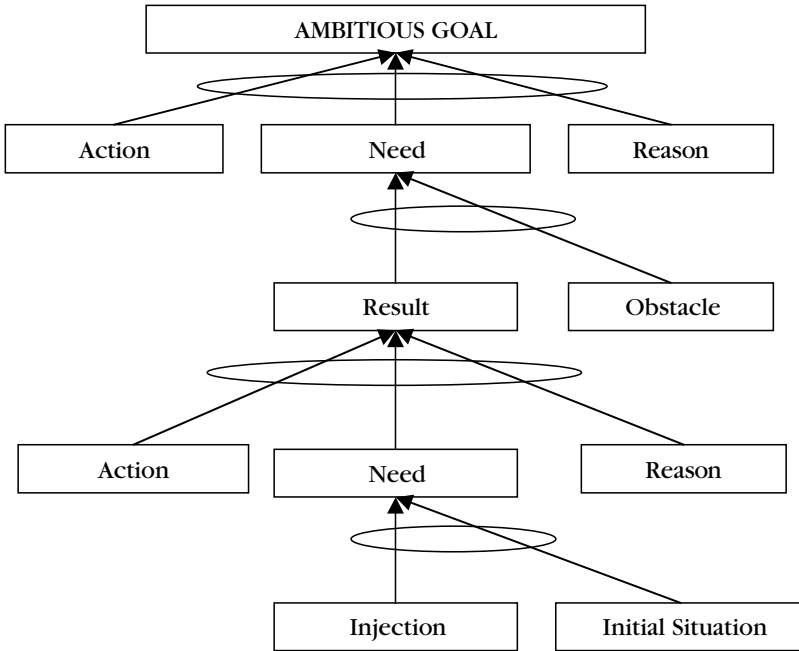


The Intermediate Objective Map (IO Map) and the Transition Tree are used to address the third question in the TOC Thinking Process: How to change? To answer this question, all the possible obstacles to implementing the solution are listed in the IO Map,² which is nothing more than participants' intuitions about the obstacles to achieving the solution. The IO Map also presents possible ways to overcome obstacles and the sequence in which they should be implemented.

The final step in the TOC Thinking Process is the development of a Transition Tree (Figure 5). This tool provides a detailed, step-by-step implementation plan. The Transition Tree is a communication tool allowing everyone involved in the process of change to understand the why, how, and what of every action. The Transition Tree includes the need for the action, the action itself, and the rationale for the action. These three elements together allow the intermediate objectives to be realized. Next to each element in the Transition Tree lies an explanation of the obstacles to be overcome or the reason for subsequent steps in the implementation process. The tree follows the sequence required for overcoming each obstacle as determined in the IO Map.

The Transition Tree has a finer level of detail in terms of the need, action, and reason for each step developed in the IO Map, starting with the initial situation and the injection, adding the need and reason for each action, and ending with the ambitious goal, the final desired situation.

Figure 5
Generic Transition Tree



The remaining sections of this chapter present a case study of the articulation of the Spanish undergraduate program at WSU. The discussion includes a description of the key characteristics of the program, the application of the TOC Thinking Process to the articulation of the undergraduate curriculum, and the implications of this model for language program directors (LPDs) and other program participants.

Applying TOC Thinking Process Tools: A Case Study

WSU, a public research institution located near downtown Detroit, is an urban commuter campus of about thirty-five thousand students. The Department of Romance Languages and Literatures offers B.A., M.A., and Ph.D. degree programs in Spanish and French, and B.A. and M.A. degree programs in Italian. The undergraduate Spanish program has approximately thirty students enrolled as majors and twenty students as minors. Enrollment for undergraduate Spanish courses averages nine hundred students per semester at the introductory level, 115 students at the intermediate level, and fifty-five students at the advanced level.

The undergraduate Spanish program is designed to develop students' proficiency in the target language, awareness of Hispanic cultures, and sensitivity to and appreciation of Hispanic literature. To reach this objective, courses in language, literature, culture, and linguistics are offered. Faculty members recognize that the appropriate sequencing of these courses is important in order to achieve program goals. There are eleven full-time faculty members: nine are tenured or tenure

track and two are non-tenure track. Among the eleven full-time faculty members, nine specialize in literature and two specialize in linguistics. In addition, on average, there are fifteen adjunct faculty members and eight graduate teaching assistants; however, only the eleven full-time faculty members participate in curricular decision making.

Articulation of the undergraduate program has been an ongoing concern for Spanish program faculty members. Previous attempts to improve articulation have included the creation of a curriculum committee that has proposed and implemented various curricular changes. For example, a curriculum revision was executed in 2001 to better balance the course content at the advanced level between the third and fourth years and to improve the transition from intermediate- to advanced-level courses. In addition, a textbook committee was formed in 2003 to increase consistency of content in the intermediate- and advanced-level culture and language courses. Finally, under the supervision of the LPD, a new textbook for the introductory-level courses was adopted in 2002 to better prepare students for the demands of intermediate- and advanced-level classes. Yet, the members of the curriculum and textbook committees, the LPD, and faculty members in general are occupied with other responsibilities such as teaching, publication, and service, allowing little time to devote to the tasks of curriculum improvement. As a result, the process of improving the articulation of the undergraduate curriculum has been slow and many challenges have yet to be addressed.

Current Reality Tree

The current case study applies each of the five TOC Thinking Process tools to the WSU undergraduate Spanish program in an effort to identify ways to better articulate its curriculum. The goal of this case study is to pinpoint problems inherent in the Spanish curriculum, identify barriers to solving these problems, and create concrete solutions; the TOC Thinking Process tools provide a framework for this task. The first step in this process is to build the CRT. In consultation with a tenured faculty member specializing in linguistics, construction of the CRT started with a description of the initial situation, specifically, the different factors that stand in the way of achieving a more articulated curriculum. Through this process sixty-two undesirable effects (UDEs) were identified. This list was reduced to thirty-five UDEs for two reasons. First the process of building a CRT becomes extremely difficult and sometimes confusing when a long list of UDEs is developed. Second, to narrow down the scope of the problem, two aspects of articulation were left aside: quality of instruction (e.g., faculty education, experience, and effectiveness) and connection with other disciplines (e.g., Spanish and business). Although these aspects are relevant to creating a more articulated program, by themselves they are complex enough to require a separate and complete TOC Thinking Process exercise.

The identification of UDEs provided insight into the complexity of the problem, and the process of connecting causally related UDEs helped narrow down the possible core problems. The final CRT shows four distinct areas that affect program articulation: Enrollment; Funding; Reward System; and Coordination, Cooperation, and Communication.³ Table 1 shows the percentage of the thirty-five UDEs analyzed that are causally related in each of the four areas. Based upon the large number of UDEs, Area 4: Coordination, Cooperation, and Communication, was found to have the most

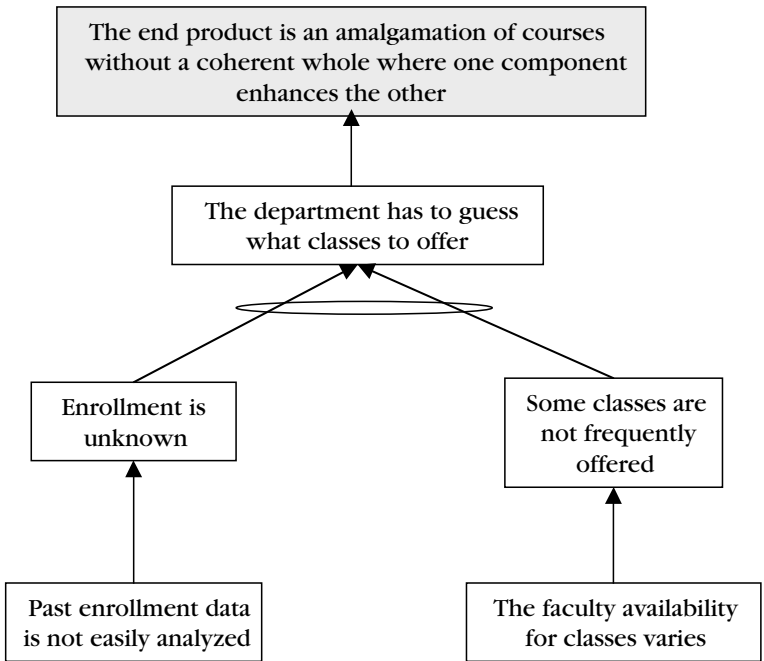
influence on the problem of articulation. This fact is significant because these are issues over which faculty members have the most control when it comes to implementing a solution. The application of the model will verify this claim.

Table 1
Four Areas of the WSU Spanish Program Current Reality Tree

Area	No. of UDEs	Percentage
1. Enrollment	5	14%
2. Funding	6	17%
3. Reward System	7	20%
4. Coordination, Cooperation, and Communication	17	49%

In the following discussion, each area of the CRT is presented in an individual figure to increase legibility; nonetheless the four areas form part of one larger, interconnected CRT that subsumes all of them. Area 1 (Enrollment; Figure 6) starts with the reality that the department does not have easily accessible, accurate historical data that can be used to predict future enrollments at each level. In addition, faculty availability varies considerably every semester, making it difficult to offer some classes frequently. The interaction between these two UDEs may cause the department to speculate and inaccurately estimate which classes to offer in a given semester.

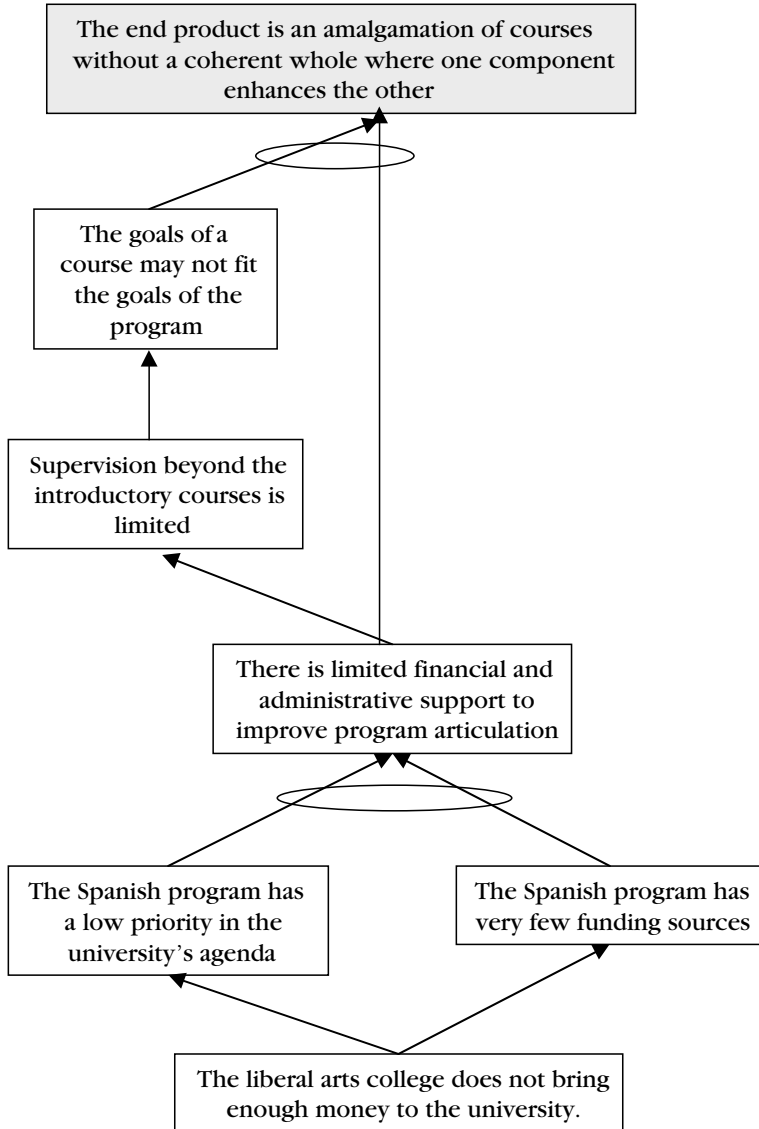
Figure 6
Spanish Program Current Reality Tree, Area 1: Enrollments



Area 2 (Funding; Figure 7) is another concern for the Spanish program. The money that the department produces through grants and other donations is not considered significant when compared with other departments or schools. One result of this limited external funding is that the program has a reduced priority in the university's budget. This paucity of funding sources prevents the department from dedicating its limited financial and administrative support to the tasks of articulation.

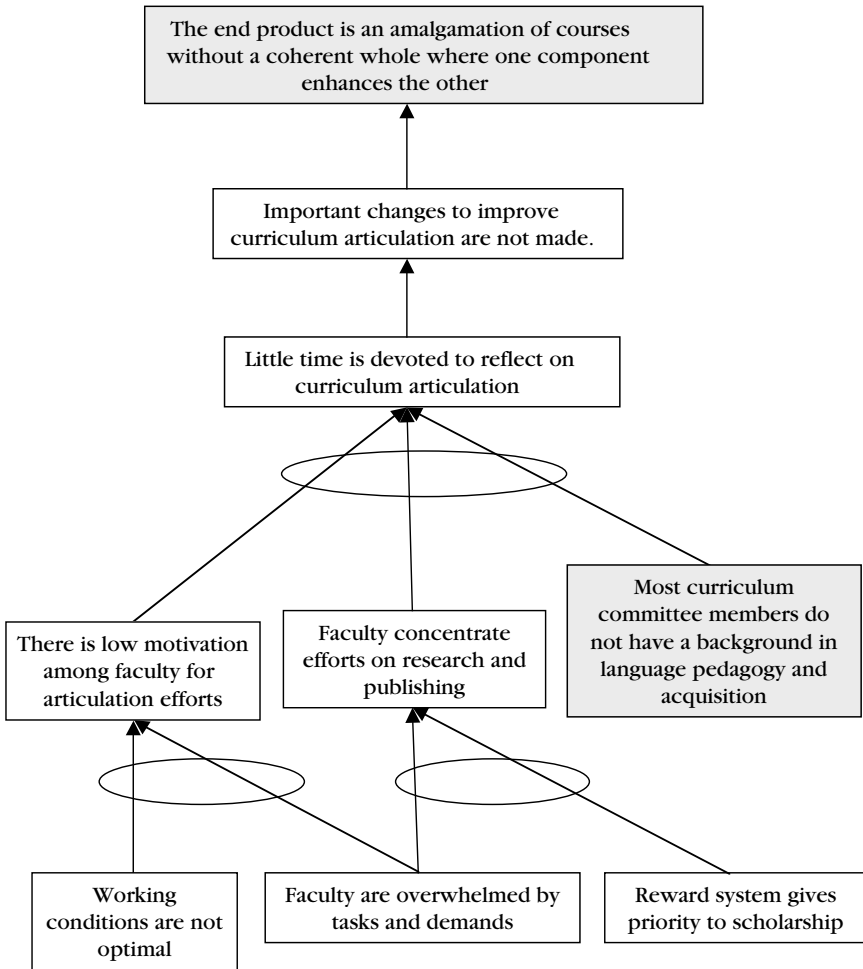
Figure 7

Spanish Program Current Reality Tree, Area 2: Funding



A look at the way Area 3 (Reward System; Figure 8) is set up reveals that faculty members have little incentive to devote their time to the task of articulating the Spanish program and improving its curriculum. In general, this system gives more priority to research and scholarship, and less priority to teaching and service. In addition, working conditions (e.g., salary and benefits) are not equivalent to those of faculty members in other colleges and departments within the university. As a logical result, Spanish program faculty members devote their time, motivation, and efforts to publishing on topics related to their area of specialization, and spend less time on the tasks required to implement changes that may improve articulation.

Figure 8
Spanish Program Current Reality Tree, Area 3: Reward System



Note: Gray boxes form part of at least one other area of the Current Reality Tree.

Area 4 (Coordination, Cooperation, and Communication; Figure 9) comprises four major points of concern in promoting articulation in the initial situation of the Spanish program. There is heavy emphasis on the study of literature over other disciplines within the program (cultural studies and linguistics), and each discipline has its own discourse, content, and research that are unfamiliar to members in the other disciplines, differences that Byrnes (1995) argues may inhibit communication and therefore articulation. There are also differences in modes of thought, expectations, and responsibilities among faculty members. Furthermore, the faculty members' varied backgrounds and training provide many benefits to the quality of individual courses within the program, yet they have few opportunities or incentives to share their respective expertise to enhance vertical or interdisciplinary articulation. Finally, some faculty members may be resistant to change, thinking that some changes may negatively affect their individual contributions to the program in spite of the positive effect these changes may have on the overall program.

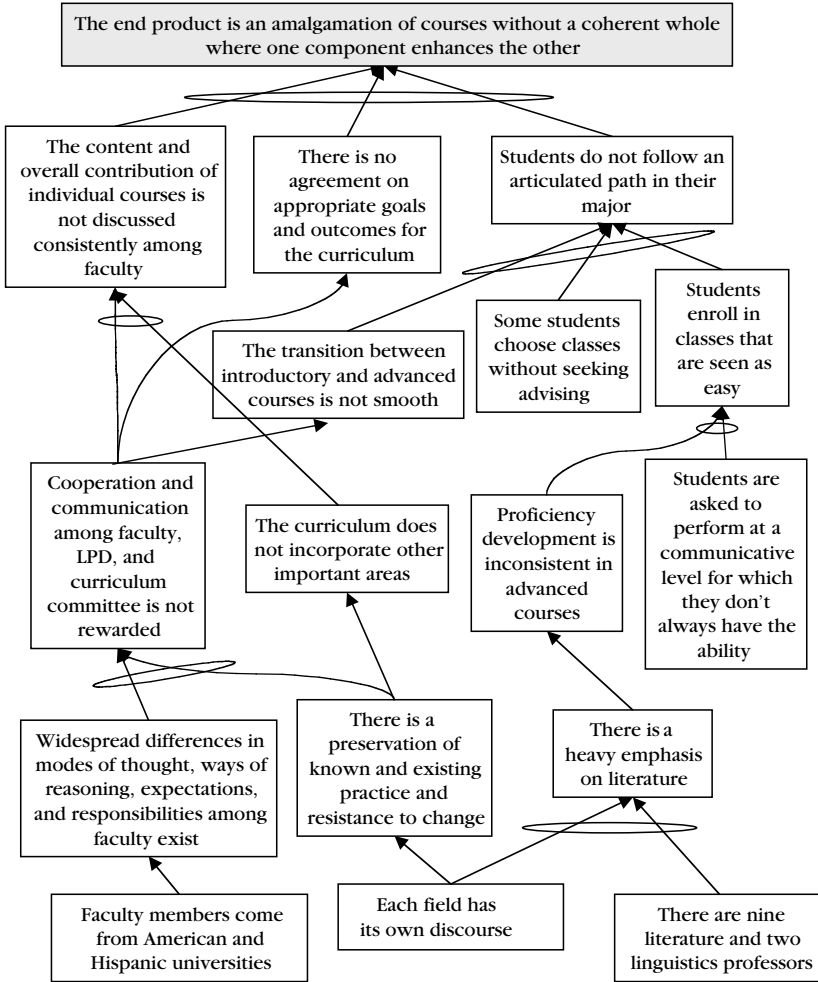
The outcomes of these conflicting views and specialized discourses among faculty members may trigger more problems, with a potentially negative effect on articulation. For instance, if curricular goals are not clearly defined and communicated, faculty members may develop course content that does not effectively contribute to the overall program. Similarly, limited communication about the curriculum restricts the smoothness of the vertical transition from introductory- to intermediate- to advanced-level courses. This is compounded by the fact that students may enroll in courses without seeking proper advising, causing some to follow an unarticulated path in their major. Cooperation and coordination are indispensable if the department is to successfully implement changes to improve articulation. However, two main problems impede improvements in this area. First, although an LPD is in place in the department for the introductory courses, supervision of instruction and curricular content beyond the introductory level is periodic rather than continual. Second, the potential for resistance to change, although normal in every organization, may hinder coordination, cooperation, and communication, thus making it difficult to implement solutions effectively.

The core problem that emerges from an evaluation of the CRT is limited opportunities and incentives for cooperation and communication among program participants. In order to resolve this core problem, an EC must be developed.

Evaporating Cloud

The CRT revealed various conflicts or dilemmas, the most salient of which is faculty time devoted to the task of curriculum articulation versus faculty time devoted to research and other duties. Figure 10 shows the EC built to break this conflict. The upper part of the cloud shows that to have a good program, faculty members must spend time collaborating and communicating about articulation, but the lower part of the cloud indicates that they also need to dedicate their time to research to be current in their respective fields and to be rewarded professionally and financially for their work. A conflict therefore exists between devoting time to articulation efforts, and to producing scholarly research. There are two assumptions behind

Figure 9
 Spanish Program Current Reality Tree, Area 4: Coordination, Cooperation, and Communication

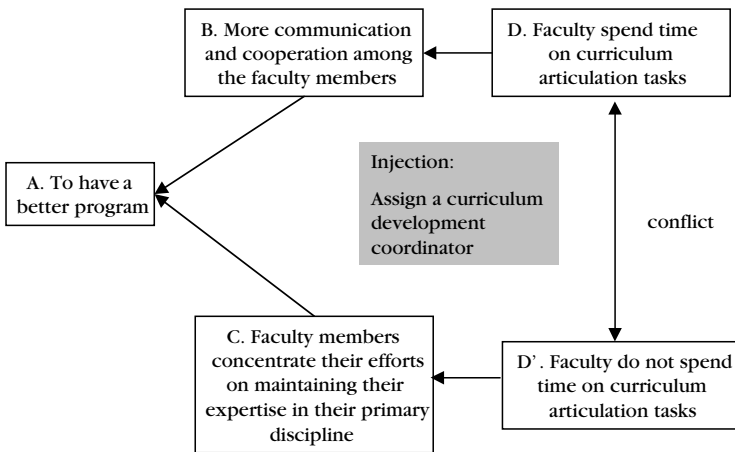


this idea: (1) the need to share disciplinary knowledge among faculty members to improve communication, and (2) the need to develop common standards and goals for every course and for the overall program. The lower part of the cloud maintains that when faculty members concentrate on their area of expertise, the program may actually improve because their research interests can contribute to the quality of course content. In this case the basic assumption is that specialization is the road to obtaining better results for the program.

Returning to the basic conflict, two important assumptions come to the surface. First, faculty members are occupied with their day-to-day work. Second, they cannot

effectively and successfully work on their daily responsibilities and participate in curriculum development as well. An injection with the potential to break the conflict and create a win-win situation is to develop a new position within the Spanish program, that of curriculum development coordinator (CDC), to enhance communication among program participants, initiate, manage, and oversee curricular innovations and revisions, assist faculty members in implementing all aspects of the curriculum, and regularly monitor progress. The CDC role is proposed to complement the existing administrative structure of the WSU Spanish program. Whereas the LPD focuses on issues of articulation at the introductory level, the purpose of the proposed CDC position is to coordinate, assist, and facilitate all aspects of curriculum development across the undergraduate curriculum. The Future Reality Tree (FRT) and Transition Tree explore the possible outcomes of implementing this injection and the suggested implementation plan.

Figure 10
Spanish Program Evaporating Cloud



Assumptions:

A-B: There is a need for common standards and goals in every course and the overall program.

B-D: By working on articulation tasks faculty members will be able to solve their differences and conflicting views.

A-C: Specialization is the way to improve the program.

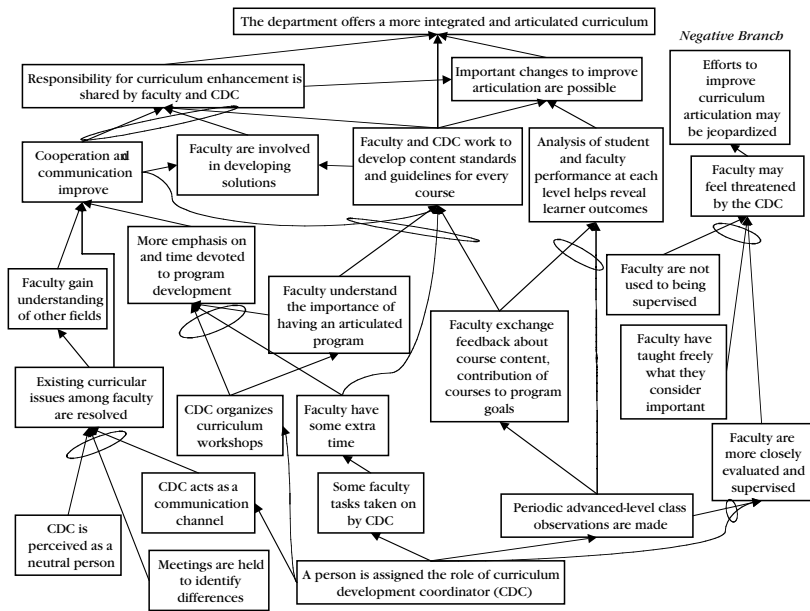
C-D': Faculty members can work only on one area of expertise.

D-D': Faculty members are overwhelmed with their day-to-day work. Faculty members cannot effectively and successfully work on their daily responsibilities and participate in curriculum development as well.

Future Reality Tree

Figure 11 shows the FRT developed for the WSU Spanish program. This tool serves two purposes: to evaluate and improve the injection. The process of building the FRT starts by foreseeing the effects of assigning a CDC. The CDC serves as a communication channel for all issues that arise as a result of attempts to implement curriculum enhancement solutions and thereby improve articulation. Having a new communication channel has the potential to improve the existing curricular issues among faculty members. However, the presence of a CDC is not sufficient to cause improvements in communication. Another important injection is the cultivation of positive perceptions about this new departmental role among program participants.

Figure 11
Spanish Program Future Reality Tree



To successfully improve communication and cooperation among faculty, administrators, and other program participants, the CDC must first establish credibility so that other members of the department trust her perspectives and opinions. Next, she must develop relationships that encourage departmental faculty and staff to consider and support new proposals; program participants will be more open to change if they perceive the CDC as a neutral, honest, steady, and reliable person. Finally, the CDC must be skilled at listening to the ideas and concerns of all program participants. Through informal conversations, meetings, and other encounters, the CDC can collect information essential to improving departmental articulation efforts.

Once the CDC is perceived as an important part of the department’s effort to improve articulation, another injection is necessary: the establishment of periodic

meetings that provide a common ground on which communication between different disciplines (literature, cultural studies, and linguistics) and functions (administration, service, teaching, and coordination) within the program is possible and valuable. With this common ground established, program participants are able to identify shared benefits from enhancing the curriculum. As a result, a lack of cooperation is less of an obstacle to articulation.

The CDC is responsible for overseeing various tasks that help synchronize efforts toward curriculum enhancement, potentially enhancing articulation. Such tasks might include departmental curriculum workshops that inform, educate, and motivate faculty members on the tasks of curriculum articulation, communication about the results of curriculum enhancement projects to the rest of the department, or supervision and evaluation of the contribution of various courses to the overall program, learner outcomes, and curricular goals.

The opportunity to give and receive feedback on the content and goals of each course is an important result of improving organization, communication, and cooperation. Solutions to articulation-related issues come not only from the CDC, but also from faculty members and other program participants. When the solutions come from group consensus, the people involved are more likely to support and carry out the implementation plan. In addition, the feedback process, curriculum workshops, and coordination meetings lead to the development of course content standards and agreement on meaningful program goals.

The FRT in Figure 11 also shows a negative branch. A negative result of having a coordinator beyond the introductory level is that faculty might feel threatened by the periodic observation and supervision of their classes. Full-time faculty members are not accustomed to supervision and evaluation of their courses at the advanced level; they have had the freedom to determine the content and assessment criteria of their own courses and to instruct based upon their own methodological choices. To avoid the potential negative effects of increased supervision and evaluation, it is important to work on communication and cooperation before establishing periodic observations. If faculty members teaching at the advanced level have a clear understanding of the CDC's role, and see it as essential to the success of the overall program, they may be more open to supervision and feedback.

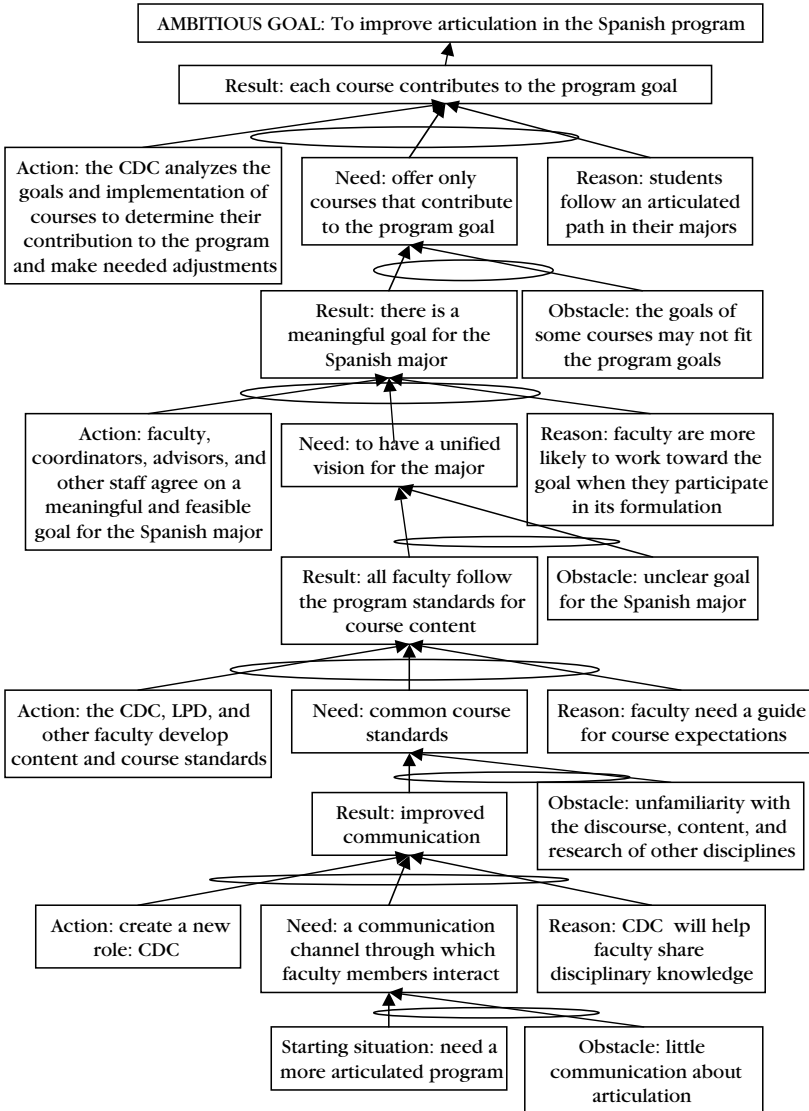
Transition Tree

The final TOC Thinking Process tool is the Transition Tree. This tool is an extension of the IO Map, where the objectives for overcoming the obstacles that impede a more articulated program are put together in a sequenced manner. In the Transition Tree these objectives are called results. This tool sets a path of action to make change happen. It is recognized as a powerful communication tool because it explains to everyone involved what to expect along the way and why to expect it.

Figure 12 shows an excerpt of the Transition Tree⁴ developed for the WSU Spanish program. The starting situation emphasizes the need for improved

articulation. The first obstacle to overcome is limited communication about articulation among program participants. As the tree shows, there is a need for a pathway through which parties might communicate all types of information. The action to solve this need is to create a CDC to moderate discussion in such a manner that ideas are communicated clearly and disciplinary knowledge is shared effectively.

Figure 12
Spanish Program Transition Tree Excerpt



The next step in the Transition Tree is to overcome the unfamiliarity that faculty members in one field of specialization have with the discourse, content, and research of other fields; this unfamiliarity is an obstacle to establishing common standards for course content that will facilitate both vertical and horizontal articulation. To resolve these differences, the next action proposed is to have organized, periodic meetings in which the parties involved and the CDC communicate and listen to one another's different points of view, and subsequently collaborate to develop content and course standards. These standards must dovetail with overall program objectives; however, because the goals of the Spanish major are not clearly delineated, a unified vision for the major is the next need in the Transition Tree. This need can be met through further communication among participants whose goal is to make contributions to curriculum enhancement more meaningful and informed. To overcome the natural resistance to change that potentially slows down any implementation plan, faculty members and other program participants must be transformed into agents of change. The result is that they are able to adapt to changes faster every time they incorporate a new idea. Empowering and informing is one way to accomplish this objective. Change is more likely to happen if people discover by themselves that there is a need for change. Using case analysis and problem-solving tools such as the TOC Thinking Process raises awareness and helps empower the group.

Another obstacle impeding a more articulated program is that courses offered may not fit the program goals to the extent possible, partially because of the lack of continuous supervision beyond introductory-level courses. Not only is it important to have an LPD to coordinate the introductory level, and a CDC to coordinate the intermediate and advanced levels, but it is also necessary for both to work together. When this happens, it is possible to control quality, content, and interconnectedness in each course and develop general and specific standards for every level and every course within each level. Furthermore, such coordination efforts make the transition from introductory- to intermediate- to advanced-level courses smoother, which is a necessary condition when students follow an articulated path in their majors.

When the parties involved agree on the standards for the program, a unified vision for the overall program emerges. The key to this development relies on the active participation of all program members, not just the LPD or CDC. As a result, everybody shares the responsibility of ensuring constant curricular coherence and maintenance.

Conclusions

The TOC Thinking Process has increasingly been applied to situations outside the business context; in fact it can be applied to any situation involving change to a system or organization. In this chapter, TOC Thinking Process tools were used to analyze the articulation of one FL program, and to propose solutions to problems found within it. This application of the TOC Thinking Process model revealed that curriculum articulation is indeed a complex and multifaceted issue. The development of a CRT makes program participants aware of a broad spectrum of articulation factors, and revealed at least four main areas (Enrollment; Funding; Reward System; and

Coordination, Cooperation, and Communication) that have a direct effect on the articulation of the WSU Spanish curriculum. Moreover, cause-and-effect logic permitted the identification of a core problem (limited opportunities and incentives for cooperation and communication among program participants), a critical step in the problem-solving process. The EC tool was then used to identify and break conflicts inherent in the Spanish program that impede the development of a solution. For this case the most salient conflict is faculty time devoted to the tasks of articulation versus faculty time devoted to research and other functions. The injection proposed to break this conflict was the introduction of a CDC to coordinate and facilitate all aspects of curriculum development at the undergraduate level, thereby complementing the existing administrative structure of the department. The possible outcomes of incorporating this new role were explored in the FRT. This tool predicted a positive effect for the department provided that certain conditions were met, including increased communication and cooperation among all program participants, group decision making, and positive perceptions of the CDC. Finally, the Transition Tree provided the logic for each action in the implementation plan, allowing program participants to focus on the content of communication rather than the need to communicate. This tool more than any other forces participants to work together and discover the need for change. As a result, a unified vision emerges that translates into sound curriculum articulation. Certainly, the TOC Thinking Process tools provide program participants with the opportunity to identify a core problem and implement effective solutions that address the needs of the program. This is particularly important in the case of the WSU Spanish program in which previous attempts to address the problems of curriculum articulation were unsynchronized, isolated actions that lacked a clear, strategic goal for the overall program.

All members of a language department must share the responsibility for curriculum articulation, and the results of the tools used in this case study encourage group decision making and cooperation among all program participants. Certainly, the LPD (at the introductory level) and the CDC (at other curricular levels) are the key actors in the development and implementation of this type of articulation strategy. The CDC can potentially create an atmosphere of communication and cooperation that may be translated into a dynamic, well-organized, and successfully-articulated program. Furthermore, the CDC and LPD share common ground; both are responsible for the vertical, horizontal, and interdisciplinary articulation of FL curricula. An LPD that is already established within the language department can have a significant effect on the development and establishment of the CDC position based upon her expertise in program direction, and her already vital position in departmental administration.

This application of the TOC Thinking Process makes several contributions to developing a theory of language program articulation. First, this case study shows that although the specific findings and solutions may not be applicable to other language programs, the framework and the process through which it guides organizations are. Each program has its own inherent problems and needs; however, by applying the same process to the curricular problems of individual language programs, others may become aware of problems they have not foreseen, solve conflicts that are impeding a more articulated program, and propose and implement

powerful solutions. The TOC Thinking Process model, therefore, provides a flexible, generalizable framework for the analysis of curriculum articulation issues, and a structure for creating an implementation plan that accurately addresses intrinsic organizational problems, thereby moving us closer to a theoretical model of language program articulation. A second contribution to the development of a theory of articulation lies in the identification of a number of factors relevant to articulation that have not previously been discussed, such as the faculty reward system and the relationship between student enrollments, program administration, and course offerings. Future research into the specific manifestations and interactions of these factors with more frequently discussed factors will enable more successful articulation efforts. Finally, the results of this case study expand our understanding of the tensions that make articulation an ongoing challenge without a final solution. These results reveal to a greater degree than previous models the complexity of the relationships among articulation factors, and the challenges to individuals who must overcome differences, first, to develop a common goal, and later, to reach that goal through a collaborative and communicative process.

Notes

1. The tools for this case were developed in fall 2003 for the Breaking-Through Solutions Theory of Constraints course (BA7260), conducted by Dr. James Low at WSU.
2. The elements of the IO Map are repeated in the Transition Tree, therefore, the IO Map is omitted from this chapter because of space limitations.
3. In a more extensive analysis of the Spanish undergraduate program, these four areas may require their own, more detailed CRT because of the level of complexity of each individual area.
4. The full Transition Tree is available from the author; the excerpt is presented here to provide a concise example of the application of this tool.

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