

Toward a Theory of Interdisciplinarity:

An Example of Conceptual Integration/Blending in Teaching and Learning in Russian and East European Language-Based Area Studies

Anna Pleshakova and Kathleen Quinlan

Introduction

Most of the problems confronted in everyday and professional life are interdisciplinary, though most of our academic scholarship is contained within disciplines. Understanding and solving such interdisciplinary problems depends upon crossing disciplinary boundaries. Yet, “the need to identify a method or/and logic of interdisciplinarity has, however, proven to be much easier to proclaim than to meet”¹. There is a need for exploration and understanding of interdisciplinarity across its many forms, within both research and education (see Frodeman, Klein and Mitcham, 2010; Kreber, 2009; Augsburg and Henry, 2009; Baker, 2010).

While an investigation of all types of interdisciplinarity is beyond the scope of this paper, we will look at the case of teaching and learning in area studies. In area studies, “interdisciplinary engagements, learning, and research come in several forms” (Calhoun and Rhoten, 2010: 116-117). Interdisciplinary social science can contribute to:

- a comprehensive view of social life that requires different perspectives;
- innovation based on learning skills or acquiring tools from other disciplines;
- better understanding of a social problem. (Calhoun and Rhoten, 2010: 116-117)

Despite potential for enhancing scholarship, interdisciplinary movements in area studies exist against a background of constant tension between disciplinary and interdisciplinary approaches. This tension seems to occur mainly because “interdisciplinary programs have been added, without great effect on the disciplines themselves” (Calhoun and Rhoten, 2010: 115).

Significant investments have been made in area studies to respond to changes in the landscape of international politics and business. The case study course is taught within a Centre that is one example of this investment. In May 2006, Russian and East European Studies (REES) at Oxford, the University College London School of Slavonic and East European Studies (UCL-SSEES), and the Centre for Russian and East European Studies (CREES) at the University of Birmingham were awarded a grant of £5.6 million by three major UK funding bodies (HEFCE/AHRC/ESRC) to establish a new Centre for East European Language-Based Area Studies (CEELBAS)². Its main objective is to develop multidisciplinary and interdisciplinary, language-based analytical skills in the REES field for

¹ CSID, <http://csid.unt.edu/research/Oxford-Handbook-of-Interdisciplinarity/index.html#Code4>

² The CEELBAS programme was originally funded for five years, and then in March 2011 the funding was provided for four more years.

use in academic and non-academic careers through programme postgraduate scholarships, postdoctoral fellowships, mid-career training, workshops and conferences, as well as engagement with the user community and international networks. In this paper, we draw on examples from the course³ “The Culture of Russia and Eastern Europe” taught to University of Oxford masters students as part of the programme “Russian and East European Studies”(REES).

While some might see interdisciplinary postgraduate teaching as easier than designing and providing undergraduate interdisciplinary programmes (cf. Kreber, 2009; Augsburg and Henry, 2009; Baker, 2010), our experience with the Culture course suggests otherwise. Even for an individual postgraduate course supported by rich university and national contexts, finding the method or logic of interdisciplinarity and making it work is challenging. The design for teaching and learning in the ‘Culture’ course requires crossing the boundaries both within and between two ‘multidisciplinary and interdisciplinary’ fields - social scientific and humanistic.

Students’ bring diverse discipline (degree) backgrounds (humanities vs. social sciences) as well as primary research and study interests. Students experience difficulty with less familiar discipline fields in the ‘Culture’ course, leading to a lack of motivation and, consequently, a surface approach to learning (Marton and Säljö, 1976)⁴. They also have tended to report it as lacking a “red thread”, feeling disjointed with a collection of unrelated topics.⁵ Thus, there is a need to employ teaching and learning methods and tools which:

- convey a message of the logic of interdisciplinarity;
- respond to the challenge of students’ ‘discipline’ diversity;
- motivate students to employ a deep approach to learning (Marton and Säljö, 1976).

In this paper, we develop a logic of interdisciplinarity, illustrating how it can be applied with an example from the “Culture” course. We bring together two research frameworks and one pedagogical framework, interweaving theoretical concepts and methods from educational and cognitive scientific literature. First we argue that the logic of interdisciplinarity for the ‘Culture’ course is rooted in Kreber’s (2009) framework of the interplay between discipline-specific and discipline-transcendent aspects of teaching, learning and assessment. Second, we discuss problem-based learning as a teaching and curricular method supporting

³ We use the term course to mean a term-long module that students are taking concurrently with other courses that constitutes approximately 15-20% of an overall degree programme.

⁴ In their seminal paper (1976) Marton and Säljö introduced the idea that university students could adopt either a learning approach focused on understanding – ‘deep approach’ or a learning approach focused on rote learning and reproducing – ‘surface approach’.

⁵ This conclusion on the students’ perception of the Culture course has been drawn following the thorough analysis of all major trends of opinions (negative or positive) of those students, who took the ‘Culture’ course in 2008-2009 and 2009-2010, and who agreed to share their perception of the course with REES or the authors of this article through questionnaires, interviews, discussions, etc.

interdisciplinary learning. Third, we investigate how conceptual integration (Fauconnier and Turner, 2002) provides a theoretical underpinning for the cognitive processes required of students in interdisciplinary problem-solving. We conclude that by creating an understanding of interdisciplinarity from a cognitive perspective, we can help both students and tutors to be more self-conscious about the very practice of interdisciplinary studies, thereby enhancing the learning and teaching process in the ‘Culture’ course and area studies more broadly.

1. Kreber’s Framework for Interdisciplinary Learning

Carolyn Kreber’s (2009) highlights the interplay between discipline-specific and discipline-transcendent aspects of teaching, learning and assessment, which support student learning both within and beyond disciplinary boundaries. Central to the framework is the notion of ‘subject’ understood as both ‘what we look at’ and ‘what we look through or with’. Kreber (2009) offers four versions of what a ‘subject’ is:

a) a theme or focal topic in a task, activity or project of limited duration;

b) a curricular field of study delimited by a certain body of knowledge;

c) a ‘discipline’, in a sense of not just a body of knowledge but a set of conceptual and methodological tools employed in creating and critiquing this knowledge; [...]

d) a complex problem or real-life issue that could be studied from more than one conceptual and methodological perspective (this might include version a but could go beyond that). [...] To simplify the above definitions, we might say that, on the one hand, ‘subjects’ can refer to a body of knowledge or knowledge product that we look at (versions a and b) and, on the other hand, to a disciplinary lens that we look with and through.

(Kreber, 2009:11)

Following Kreber’s framework we see ‘Culture of Russia and Eastern Europe’, or the corresponding Russian and East European national ‘identities’, as the subject that we look at (versions a, b, d) through a number of ways of thinking and practicing that are characteristic of humanities, (e.g. history, literary studies, etc.) and social sciences, (e.g. political science, anthropology, sociology (version c)). Here, learning appears to be discipline-specific insofar as students are studying specific disciplinary subjects and using disciplinary lenses.

Yet, student learning is discipline -transcendent in two main ways. Firstly, students’ learning has relevance beyond the specific subject content taught within a given discipline field. For example, the study of Russian postmodernist literature will be useful to a student as she studies Czech postmodernist literary culture. Secondly, students’ learning is relevant beyond the topics which are typically explored through the particular disciplinary lens students were exposed to (Kreber, 2009). For instance, a student might apply the perspective of postmodernist literature to studying media.

REES graduates need to be able to integrate disciplinary knowledge and skills acquired through the programme to the complex and “interdisciplinary” context of real life in the area. In other words, to the version d of ‘subject’, namely a complex problem or real-life issue that could be studied from multiple conceptual and methodological perspectives (Kreber, 2009; cf. Magolda, 2009; Rowland, 2006). Doing so requires a degree of self-conscious attention to the process of thinking, learning and problem solving in various disciplines. It depends upon:

[...] them having developed an awareness of how they have come to know things about any of the subjects they have studied at university. [and] acquired a critical understanding of how disciplines are different and similar in how they approach particular problems.

(Kreber, 2009: 13)

2. Problem-Based Learning as an Interdisciplinary Teaching Methodology

We can prepare REES students for dealing with such complex ‘subjects’ through simulating real-life problem solving in the ‘Culture’ course. While there is no single pedagogy of interdisciplinarity (DeZure, 2010), problem-based learning (PBL) offers one approach. When well-designed and implemented, problem-based learning (PBL) embodies directly or indirectly all the key principles of learning from a variety of sources (Ramsden, 2003; Chickering and Gamson, 1987; Ambrose et al, 2010). PBL is a student-centred instructional and curricular approach that “empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem” (Savery, 2006: 9).

Although PBL has been traditionally used in professional (medical) training, recent research shows it can be used successfully in non-professional fields and disciplines (Ramsden, 2003: 141). Though varied in structure and content, PBL courses share similar rationales and intended outcomes (Walker and Leary, 2009). They are seen as motivating students’ interest in the subject, and promoting students’ active, integrated and constructive learning, conditioned by social and contextual factors (Barrows, 1996; Gijssels, 1996; see also Duch et al, 2001). While PBL refers to a range of different implementations, its key defining characteristics are that a) tutors act as facilitators of learning; b) learning is self-directed and self-regulated, with the responsibility for learning resting with the student; and c) ill-structured instructional problems serve as the jumping-off point for student investigations (Savery, 2006; 12-15)⁶. In addition, students generally work in small groups, so they simultaneously building collaboration, communication and teamwork skills.

⁶ These characteristics were created by Barrows and further developed by Savery to provide additional information and resources (http://www.pbli.org/pbl/generic_pbl.htm)

In the ‘Culture’ course⁷ students use provided reading lists to prepare a presentation for one of the classes, as well as to writing and presenting four essays for tutorials. Student presentations serve as the starting point for class and tutorial discussions, facilitated by a tutor. Formal assessment is through the end-of-course exam. Thus, the responsibility for learning rests with students, tutors act as facilitators of learning, and instructional problems trigger students’ exploration of the topics. Thereby, the ‘Culture’ course meets the key defining characteristics of PBL (a, b) given above. More challenging has been offering ill-structured instructional problems to support students’ interdisciplinary investigation in accordance with interdisciplinarity criterion (Jonassen and Hung, 2008) and fulfilling the PBL criterion of the tutor serving as metacognitive coach for students (Barrows, 1988; Phye, 1997). Fulfilling the role of metacognitive coach (i.e. promoting students’ self-regulated learning in an interdisciplinary context) requires a sound understanding of the cognitive processes involved in integrating multiple disciplines to form new understandings. Yet, it is precisely these underlying processes or logic of interdisciplinarity that are so often absent. To fill that gap, we propose the application of Second Generation Cognitive Science, or Conceptual Integration or Blending Theory, in particular.

We use Conceptual Integration Theory (CIT) (Fauconier and Turner, 2002) to look into the conceptual processes that underlie a PBL teaching approach in the ‘Culture’ course context. The understanding of these processes allows both teachers and students to see the interdisciplinary logic and method of the course more clearly, therefore enabling teachers and students to choose more productive teaching and learning techniques. In effect, we propose conceptual integration as an underpinning way of thinking that serves as the “red thread” that gives the course an overall coherence.

3. Conceptual Integration and Interdisciplinary Knowledge

Success of PBL in an interdisciplinary course relies heavily on students’ ability to integrate concepts and ideas from various discipline domains and on their construction of meaning. This ability to perform conceptual integration depends primarily on students identifying commonalities and differences across the disciplinary divisions, or to use Kreber’s words – on an awareness of how they have come to know things.

⁷ According to the ‘Outline for the Culture of Russia and Eastern Europe Course 2010’ this core course takes a multi- and inter-disciplinary approach to the study of the culture of Russia and Eastern Europe, with ‘Culture’ understood in two principal ways.

- Part One of the course relates to the practice of lived life (social practice, gender, consumerism, and the working world), using social sciences methodology.
- Part Two adopts a definition of culture derived from the Arts and Humanities, embracing historical discussion, cinema and literature.

Both parts address how various facets of culture relate to larger questions of national identity in the region, thus providing students with a subtle and far-reaching understanding of wider discursive processes and the multifaceted role of ‘Culture’ within them.

Kreber⁸ (2009) underscores the significance of considering and comparing context-specific and context-transcendent ways of thinking, suggesting that the intellectual skills acquired through critical thinking and problem-solving in a discipline context “can inform learning in other subjects” and support context-transcendent learning (Kreber, 2009:13; Donald, 2009; Hounsell and Anderson, 2009). Achieving context-transcendent learning raises two key questions:

- 1) How are such ‘disciplinary’ intellectual skills translated into the interdisciplinary learning context?
- 2) What cognitive principles - or ways of thinking - underlie problem-solving in the interdisciplinary learning process?

Two prominent cognitive scientists, Gilles Fauconnier and Mark Turner, argue that there are “general operations for the construction of meaning that cut across” various levels and forms of thinking (Fauconnier and Turner, 2002: 17). Fauconnier and Turner call this basic human mental power conceptual integration or conceptual blending. Their conceptual integration or blending theory describes and explores this ubiquitous form of cognition and offers a research framework for the investigation of backstage cognition. Conceptual integration is a general principle underlying a range of complex mental phenomena, including scientific invention, metaphor and analogical problem-solving.

Conceptual integration networks are constructed to provide understanding. These conceptual integration networks consist of several different types of interconnected mental spaces – partial representations connected to long-term schemes of knowledge called ‘frames’. In the network there are two or more input spaces; one or more generic spaces that contain what the inputs have in common; and one or more blended spaces that are products of imaginative thinking and contain some selected structure and elements from each of the inputs. Vital relations between and within mental spaces may include: change, identity, time, space, cause-effect, part-whole, representation, role, analogy, disanalogy, property, similarity, category, intentionality, and uniqueness. In the blend, emergent structure is developed through conceptual integration, which involves processes of composition, completion and elaboration, as well as, mappings, multidirectional projections, compression and blending. The networks are controlled by a number of constitutive and governing principles as well as overarching goals.

[...] the essence of conceptual integration is its creation of a new mental assembly, a blend, that is identical to neither of its influences and not merely a correspondence between them and usually not even an additive combination of some of their features, but is instead a third conceptual space, a child space, a blended space, with new meaning. This new meaning is “emergent” meaning, in the sense that it is not available in either of the influencing spaces but instead emerges in the blended space by means of blending those influencing spaces.

(Turner, 2001: 17)

⁸ as well as other contributors to the book “The University and its Disciplines: Teaching and Learning Within and beyond Disciplinary Boundaries” (2009)

Using Fauconnier's and Turner's conceptual integration framework, we can describe interdisciplinary study based on PBL in general terms. A student receives a problem to solve. To do so s/he activates a number of knowledge elements (e.g. theoretical concepts, methods, procedures, practices) in two or more mental inputs each linked to long-term frames representing disciplinary knowledge (e.g. one mental input might be history and a second might be literature.). The generic space will contain what these input spaces have in common, such as the notion/category of theory or method (which is common to every discipline, including history and literature, but not some particular method or theory). Having a number of categories/notions in common in this generic space allows the input disciplinary spaces to be mapped. The mappings are projected into the blended space where certain methods, approach, context become common to two or more disciplines, constituting the interdisciplinary approach. The 'interdisciplinary' knowledge structure – problem solution – emerges as a result of such a mental activity.

Thus, in the blended space, elements from the input spaces are combined, and the emergent interdisciplinary knowledge structure for the solution of the problem is produced. All mental spaces in the conceptual integration network are partial; they are interrelated and can be modified as thinking and disciplinary and interdisciplinary discourses unfold during learning.

Conceptual integration as a general human mental capacity underlies meaning construction in both Kreber's (2009) discipline-specific and discipline-transcendent learning. The differences between Kreber's two ways of learning lie in the purpose of the integration network construction, and the degree of complexity, imagination and creativity involved. One can envisage 'interdisciplinary' conceptual integration networks as synthesising the depth of disciplinary study as well as the breadth of interdisciplinary study (Morrison, 2003: 4).

The PBL process in an 'interdisciplinary' context involves frame-blending and the construction of 'double-scope' (and 'multi-scope') conceptual networks. Multi-scope networks emerge when different (and often clashing) input frames from discipline domains are mapped onto one another to produce a blend whose organising frame-level structure includes some internal organising structure from each of the two (or more) input frames that is not shared by the other⁹. The resulting, creative knowledge networks are used to solve an ill-structured, interdisciplinary problem, such as the kind used in problem-based learning.

4. The Case Study: Werewolves in Epaulettes

To illustrate the application of conceptual integration through problem-based learning, we offer an interdisciplinary mapping of the real-life problem of corruption in Russia, and its media representation through the metaphor "werewolves in epaulettes". REES students will explore this problem of corruption in post-Soviet Russia in the 'Culture' course's module on the analysis of media, literature and other cultural narratives. 'Werewolves in epaulettes' is a popular Russian conceptual metaphor which has emerged in the post-Soviet Russian media

⁹ On frame-blending see Turner (2008)

discourse; it can be traced back to Stalinism. To understand this metaphor's function, students must consider how Russian language, mentality, culture, history, socio-political changes and context, and literature have interacted to allow the metaphor's emergence.

In the following sections, we show how a tutor, applying conceptual integration as a PBL cognitive coach, leads students through several steps of the learning process.

4.1 Stage 1 Conceptual Integration as the Scientific Platform of Interdisciplinarity

First the tutor introduces the conceptual integration framework as the scientific justification and logic of interdisciplinarity. Various studies conducted within the conceptual integration framework argue for the grounding of social sciences and humanities in cognitive sciences (Turner, 1996 and 2001), Sun (2006 and 2012), DiMaggio (1997), Tetlock and Goldgeier (2000), Camerer (2003).()

The same thesis has been applied to Russian and East European Studies, arguing that cognitive linguistic methods can be applied to the exploration of culture, including such notions as national identity and the conceptual processes underlying different cultural manifestations.

(http://www.ceelbas.ac.uk/ceelbas-news/events/workshops/cognitive_linguistics)

The tutor explains that cognitive science grounds social sciences and some humanities insofar as it is indispensable for the study of human interaction – an object of both social sciences and humanities¹⁰ research.

How human beings interact is the core of social science research, and human interaction is, in turn, based on the nature of the human mind, so it seems natural that someone casting around for ways to improve the social sciences would turn to cognitive science – the science of the human mind.

McCubbins and Turner (2012)

Furthermore, according to the theory, (Turner, 2001) mental events constitute a fundamental topic of study for both social sciences and cognitive science. He argues that non-mental events have a meaning in social sciences only because they relate to mental events.

The distribution of oil in the earth's crust can mean something in economics because the geological facts of the matter are enmeshed in a mental world of belief, desire, need, demand, value, utility, pricing, judgement, decision, competition, cooperation, conflict, and persuasion. The study of oil without mental events is natural science, not social science.

(Turner, 2001: 152)

¹⁰ See e.g. the description of the Balzan Project "Literature as an Object of Knowledge" directed by Professor Terence Cave (St John's College, Oxford). The project undertakes a mapping and evaluation of possible cognitive approaches to literature, and seeks to promote them in a context which is both international and interdisciplinary. (<http://www.sjc.ox.ac.uk/3122/The-Balzan-Project.html>)

A mental event or concept cannot be investigated in isolation from the culture, history, and identity of people and societies associated with this mental event (Turner, 2001). Turner (2001) illustrates his argument suggesting that the Balinese cockfight (Geertz, 1972) is – as a sociological phenomenon – a product of conceptual integration, a conceptual blend rooted in culture, history and identity.

Conceptual integration as a theory can provide a basis for research and study that crosses the boundaries between the social sciences and humanities (literary studies, history, and film studies, others). Furthermore it offers a platform for the problem-based interdisciplinary learning process underlying the ‘Culture’ course. Through this stage, students should become familiar with the basic concepts of conceptual integration, so they can be applied in Stage 2.

4.2 Stage 2 PBL: Construction of Conceptual Integration Network and Acquisition of New Disciplinary Knowledge

In the second stage, the tutor presents the problem to be solved, thus introducing problem-based learning. In one of the ‘Culture’ course modules, students consider the following problem to be solved: How do the Russian media use the conceptual metaphor of werewolves in epaulettes to represent the problem of corruption in post-Soviet Russia, and during Putin-Medvedev rule, in particular?¹¹

Students are given extracts from media discourse and other narratives devoted to the problem of werewolves in epaulettes – stories about corrupt officers of law enforcement agencies initiating events with negative consequences for individuals and society. They read extracts from Viktor Pelevin’s book “The Sacred Book of Werewolf” (2005), and Tolstaya’s “The Slynx” as examples of relevant fictional narratives.

In the process of reading and understanding the narratives about werewolves in epaulettes and addressing the set problem question, students search for and activate knowledge and research methods produced by media studies, literary/film studies, history, political science and cognitive linguistics. The search for answers motivates students to attend to core readings. Here the tutor encourages students to identify the disciplinary knowledge and methods relevant to the problem tasks.

Next, the tutor helps students learn to map different ‘disciplinary knowledge’ inputs into each other and to construct a conceptual integration network of the metaphoric representation of werewolves in epaulettes. The tutor uses conceptual integration tools to prompt students to acquire new knowledge from the disciplinary fields. The first time this approach is applied in the course, the teacher helps students to construct a conceptual integration network such as Figure 1 below. While doing so, she interacts with students and explains which mental/learning process the figure represents, building on explanations given in Stage 1. Here in Stage 2, the teacher and students work together to solve a concrete problem using the

¹¹ Students are asked given the task of explaining the underlying meaning, how it reflects the post-Soviet Russian identity, and the socio-cultural, political and historical contexts that have led to its emergence.

‘PBL-based conceptual integration’ approach to interdisciplinary learning. Later, students become more independent and can use conceptual integration more autonomously. A conceptual integration network underlying the metaphoric representation of werewolves in epaulettes, constructed by the first author, is shown in Figure 1. This figure represents a brief summary of the conceptual integration process.

The input mental spaces activated by students are: Input 1 – Literature; Input 2 – Media, political communication; Input 3 – Stalinism, late Soviet and post-Soviet period; Input 4 – Post-Soviet politics and socio-political situation and events; Input 5 – Conceptual Integration framework: cultural and narrative/discourse analyses. All these input spaces are linked to the respective disciplinary frames of literary/film studies, media studies, history, political science, and cognitive linguistics. Common to these disciplinary frames and mental input spaces are the problem itself of ‘werewolves in epaulettes’, the concept of discipline, disciplinary context, discourse, theory, method, terminology, material, cultural /narrative/discourse analysis, cultural analysis, and knowledge. These are presented in the Generic Space of the network.

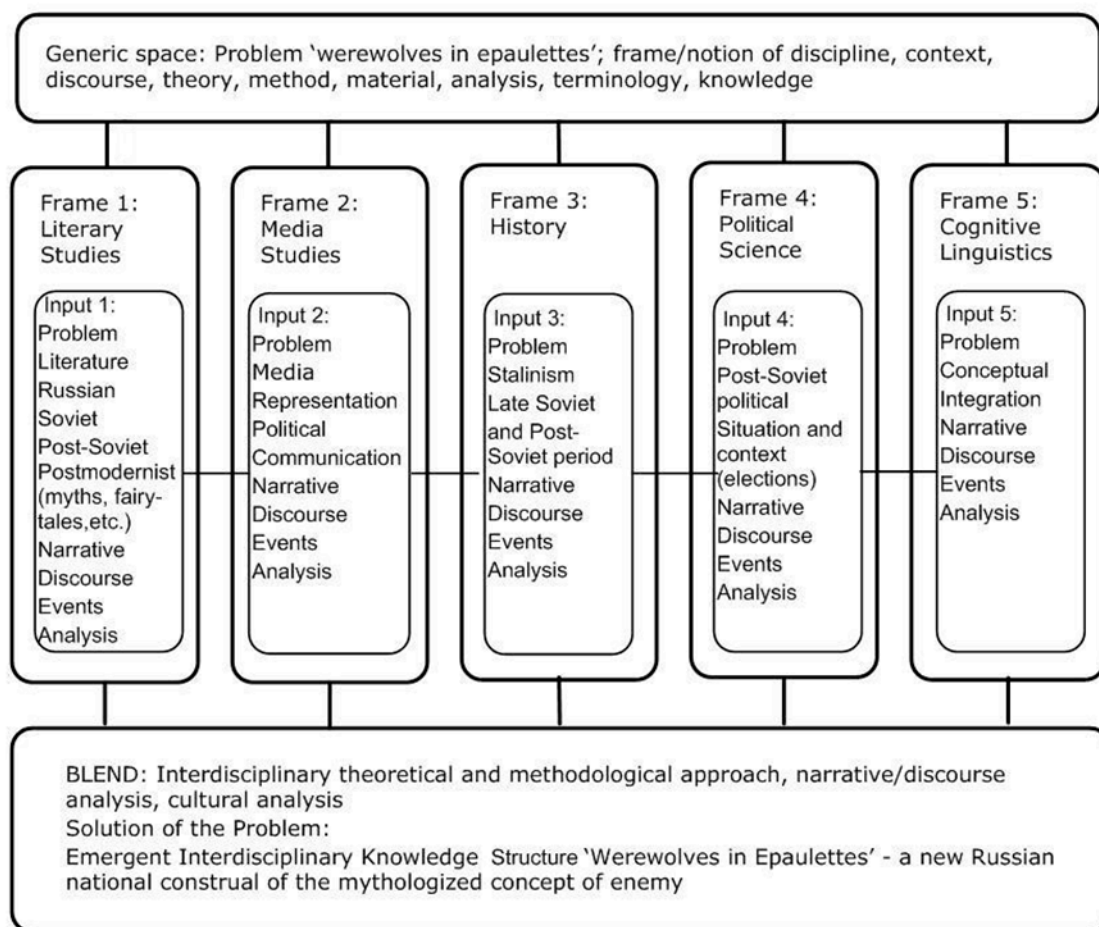


Figure 1. Conceptual Integration Network
'Problem - Based Learning: Werewolves in Epaulettes'

The key material analysed by students in this module is cultural narrative. According to the Modern Languages Association (MLA) Report, a cultural narrative includes “cultural and literary traditions, cognitive structures, and historical knowledge”. The Report defines “transcultural understanding as the ability to comprehend and analyse the cultural narratives that appear in every kind of expressive form – from essays, fiction, poetry, drama, journalism, humour, advertising, political rhetoric and legal documents to performance, visual forms, and music”. Cultural narratives about werewolves in epaulettes from different domains are analysed by students through the relevant methods of ‘disciplinary’ narrative/discourse analyses and then by the ‘interdisciplinary’ method of conceptual blending narrative/discourse analysis to provide an understanding of certain aspects of Russian national identity.

In the mental input spaces students activate chunks of knowledge such as ‘Political life’, ‘Corruption’, ‘Mass-Media’, ‘Crime’, ‘Law and Order’, ‘Adverse events’, ‘Werewolf in myths, literature and films’ and ‘Werewolf in Soviet ideological discourse’, among others. The knowledge elements, including ‘cultural narrative/discourse’ and ‘narrative/discourse

analysis' from all input spaces – linked to the disciplinary frames – are mapped into each other through time, space, analogy-disanalogy, change, property, part-whole, and other vital relations; then both elements and relations are selectively projected and compressed into the blend space. In the blend space, the interdisciplinary theoretical and methodological approach provides the solution to the problem through the emergent interdisciplinary knowledge structure.

When students integrate knowledge from the relevant disciplinary domains in the blend, they see that the function of this particular cultural metaphoric network is to structure the Russian political life scenario rhetorically and conceptually. The metaphor of 'werewolves in epaulettes' tells them about the political will of the Russian authorities (Putin-Medvedev) to fight corruption, suggests that they are doing this to gain political credibility, and warns people about the dangers of adopting Soviet (Stalinist) methods in so doing. Students see that the resulting blend acquires a new meaning of the mythologized concept of enemy – one important manifestation of national unity in post-Soviet Russia.

The construction of a network such as Figure 1 provides a general understanding of how subject matters and methods from various social sciences and humanities disciplines interact to construct the interdisciplinary knowledge structure – problem solution - in the blend. It helps motivate students' learning of previously unfamiliar disciplinary concepts.

When students engage critically with cultural (fictional and non-fictional) narratives from the conceptual integration perspective, they are able "to understand language, culture, and identity as organic structures that are rooted in historical moments but always evolving" (Howell, 2010: 86), as well as conditioned by the socio-political contexts.

Using PBL and making the 'conceptual integration' method underlying the interdisciplinary problem-solving explicit helps students develop the critical awareness, socio-political and historical consciousness of Russian cultural networks underlying Russian post-Soviet national identity. It also provides them with tools and practice at interdisciplinary problem solving to make sense of cultural narratives. Through the analysis of complex cultural narratives and building conceptual integration networks, students are able to explore issues of national-identity construction and cognitive dimensions of making meaning (cf. Howell, 2010).¹²

¹² The pilot (experimental) culture course session (11 masters degree students attended) conducted by one of the authors of this article in May 2010 resulted in positive students' feedback, e.g.:

Student: *"I think it's an incredibly useful concept [cognitive-based approach] that I could benefit from more exposure to. I think it makes the whole process more interesting as well because you have to think about meaning as well as form. It would be interesting to have a reading list or some resources to consult about how to find out more about specifically Russian cultural networks".*

Student: *"I particularly like reading the newspaper articles and finding out how they might be interpreted differently in Russian culture. Overall I thought it was both interesting and useful. In fact, I think it is crucial to incorporate these aspects as they are so different from English language."*

Student: *"It seems directly relevant to my needs in terms of translating primary materials whilst understanding their cultural content/significance. It bridges a gap between some theoretical approaches relevant to my research. I think the examples of analysis of newspaper articles, especially the opportunity to see it in the historical context of the Soviet newspaper article, were particularly helpful. Realising my failure to appreciate*

5. Discussion:

5.1 ‘Conceptual Integration’ PBL and Acquisition of New Disciplinary Knowledge

In the interdisciplinary, conceptual integration PBL process, students construct conceptual integration networks in an attempt to achieve optimal blends, or, in other words, problem solutions. In doing so, they must search for adequate concepts, methods and strategies from various disciplines, identify the missing ‘puzzle’ elements, and acquire additional knowledge. In This PBL approach expects that students build greater responsibility for their own learning, and become more motivated and self-directed in the process (Savery, 2006).

Inherent in the design of PBL is a public articulation by the learners of what they know and about what they need to learn more. Individuals accept responsibility for seeking relevant information and bringing that back to the group to help inform the development of a viable solution.

(Savery, 2006: 12-13)

There is a danger, though. There is a difference between ‘true’ student-centred problem-solving and merely reproducing a pre-formulated problem solution (Phye, 1997). In the learning process, some blends and selected mappings can become conventionalized. Students may use them later as frames and entrenched mappings in new conceptual integration networks. Tutors must be aware of how a problem solving process is identified from the students’ point of view, since only a ‘true’ problem solving process supports students’ deep approach to learning. Phye argues that students with limited relevant prior discipline knowledge, who have no access to a ready procedure and strategy, are more likely to engage in ‘true’ PBL. When such students mindfully approach the task through integrating remembered strategies and procedures and trying them out, they are likely to overcome the obstacle of limited prior knowledge and arrive at a good solution.

Thus, Phye emphasizes the need to develop a learning environment “that stresses the teaching of cognitive strategies and procedures and the development of problem-solving attitude”; or, in other words, the teaching of “the ability to gain access to and use prior knowledge in the construction of solutions for complex tasks” (Phye, 1997: 60). His argument is especially relevant for the ‘interdisciplinary’ learning approach where the students’ ability to construct new meaning through searching for and integrating chunks of knowledge from various discipline domains is crucial.

In the ‘Culture’ course, conceptual integration –a cognitive process (learning through problem-solving) –can be used as a tool to achieve ‘true’ PBL in an interdisciplinary context. As the outcome of such a process, students gain interdisciplinary learning skills and acquire

the cultural significance of these articles from a Western perspective was very revealing. Understanding Russian ‘mentality’ in more specific cultural context also helps my understanding of the significance of verbal aspect and shades of meaning found.”

interdisciplinary cultural knowledge. Conceptual integration theory provides cognitive tools for the development of a PBL environment as described by Phye. In this environment, tutors “give voice to ‘metacognitive questions’ and “insert them into the classroom dialog so that students learn to attend to them, appreciate their utility, and then adopt their use as they become increasingly independent and self-directed” (Gallagher, 1997: 340).

5.2 Conceptual Integration, PBL and Area Studies

In this study we have shown how the use of PBL-based conceptual integration can support interdisciplinary learning in Area Studies, using the ‘Culture’ course as an example. Treating culture as a creation of human minds is a theoretical and methodological approach to the exploration of culture and national identity. Seeing culture as a social construction demands that we join up social sciences and humanities, both in research and education.

Human minds operate over cultural and personal structures of knowledge. Some of these structures – cultural models or frames¹³ – are widely shared in a culture, and expressions in the culture’s language will evoke them (Turner, 2001). Russian and Eastern Europe Studies specialists must have knowledge of various cultural models that people in that region use to interpret their experience and construe the social world. To acquire such knowledge, we need to employ a range of social sciences and humanities.

Thus cultures themselves develop conceptual integration networks in which culturally shared frames – cultural models – serve as mental inputs. Concepts, artefacts, and behaviours that are not species-wide and not simply brought on by variable environmental features, are conceived by culture, in culture, and over cultural time, shared by people in a certain community and transmitted from generation to generation. When we cannot understand each other in social, political, historical, or educational settings, it is not because we do not share the same basic cognitive operations, but because we do not share all the necessary cultural networks or niches. Fortunately, as human beings we are able to acquire cross-cultural niche understanding through conceptual integration or blending.

If we assume that (national or social) identities are imaginative¹⁴ – i.e. the product of conceptual integration or blending – then the exploration of cultural networks and niches¹⁵ from the multi- and inter- disciplinary perspective of social sciences and humanities through conceptual integration should help “elucidate the types of ideologies, social relationships, political configurations, and global conflicts that result in our everyday lived experience as humans”¹⁶ – the problems central to learning and research in area studies.

¹³ For cultural models see e.g. Shore, 1996; Sweetser, 1987; Coulson, 2001; 2006; Palmer, 1996, 2006; Sharifian, F., and G. Palmer, 2007; Sharifian, F., 2008; Stepanov, 2004; Dirven, Wolf and Polzenhagen, 2007;

¹⁴ See the seminal work of Anderson, B. (2006) [1991].

¹⁵ On cultural networks see Turner’s essay at www.onthehuman.org (August 2009), and a discussion on cultural niches following it – contributions by Deal, Harrel, Herman, Pleshakova and Turner.

¹⁶ See Harrell’s and Turner’s contributions to discussion at www.onthehuman.org (2009); on cognitive linguistic approaches to exploration of ideology see Dirven, Polzenhagen and Hans-Georg Wolf (2007)

Conclusion

As we have shown through the 'Culture' course, a PBL tutor in interdisciplinary studies (particularly area studies) can use 'conceptual integration' to help students become 'metacognitively aware' (Gijssels, 1996) through introducing basic cognitive operations, cross-space mappings and meaning-construction processes involved in interdisciplinary conceptual integration networks. The tutor uses these and refers to them during the students' PBL. Conceptual integration offers a theory and structure for making explicit the process of constructing blended, interdisciplinary knowledge from discipline-based inputs. Metacognitive coaching requires a model of thinking and problem solving. Teaching cognitive processes requires a set of tools and a language for thinking. Our example has illustrated how cognitive scientific theories can be applied to cultural (REES) area studies, offering tutors an underlying theory of interdisciplinary thinking and problem solving and a set of instructional tools. The utilization of conceptual integration as method for interdisciplinary PBL results in students' awareness of how they have come to know things (Kreber, 2009), an essential condition for learning in the interdisciplinary context.

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