Harmonic Convergence: Using the Tuning Process to Build Relationships and Transform Information Literacy

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Information literacy is not a solo act. Effective and innovative instruction requires that librarians and faculty members work in harmony to achieve the complex and interdependent goals of information literacy. This position paper argues that Tuning, inspired by the Bologna Process in Europe, provides a compelling model to transform information literacy instruction. In Europe's first phase of Tuning, university graduates, employers and faculty identified the most important competencies for several disciplines. In the second phase, the focus shifted to the alignment of teaching and learning activities and assessment with the learning goals outlined in phase one.[1]

In the United States, librarians have defined and codified information literacy (IL) competencies through various standards (e.g. the Association of College and Research Libraries' Information Literacy Competency Standards for Higher Education and the American Association of School Librarians' Standards for the 21st Century Learner).[2] The Association of American Colleges and Universities (AAC&U) also recognizes information literacy as an "essential learning outcome."[3] Many individual disciplines include information literacy as part of their learning goals in accreditation and other professional standards. In some cases, these goals and standards are already somewhat "harmonized" with information literacy learning goals. Librarians and faculty across many disciplines agree that information literacy is an important higher education learning outcome, vital for the acquisition

and application of subject knowledge, critical thinking, and lifelong learning. Despite this general agreement, the practice of information literacy instruction is often out of tune on campuses across the United States. Librarians are sometimes marginalized in curricular and pedagogical discussions and often serve in a reactive role. Librarians are still asked by faculty to teach a narrow range of IL skills (mainly search) in limited ways (mainly demonstrations). These demonstrations often fail to further our deeper learning objectives, such as understanding how knowledge gets produced in a discipline, applying information to solve problems, and, to borrow a phrase from Christine Bruce, using information to learn.[4] Our big goals are often in sync, but our more immediate goals and pedagogy fail to match.

Teaching in higher education, in many cases, has not changed much in the last 20 or even 50 years. Faculty often resist educational reform, including the implementation of new pedagogical approaches and even information literacy, because such reforms are often imposed from above or outside. Information literacy faces stagnation in this environment unless the movement promotes and embraces change in teaching and learning. Tuning provides a way for librarians to engage faculty in local conversations about teaching, learning, and information literacy. These conversations do not rely on library definitions or standards, but actively generate common understanding. The Tuning Process, then, might provide a pow-

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erful grassroots framework for further harmonizing information literacy across college campuses. This is especially true for what I argue is a vital next step for innovation in information literacy: aligning learning outcomes and pedagogy.

Tuning Europe and the United States

In 1999, twenty-nine European countries signed the Bologna Declaration, committing themselves to a process of education reform and alignment. The goal of Bologna was to create a convergence of higher education across Europe, rather than a standardized or universal system. An action program outlined several objectives, including the following:

- the development and adoption of a common framework of comparable degrees, defined by outcomes, not outputs, such as credit hours;
- the introduction of undergraduate and graduate degree levels, comprised of three cycles (roughly equivalent to baccalaureate, masters, and doctoral degrees) and relevant to the current labor market;
- a quality assurance program, with comparable criteria and methods of assessment;

While Bologna was primarily a movement to promote European goals of mobility and comparability, it also strove to improve the international competitiveness of European higher education.[5]

As with any education reform, Bologna faced potential resistance as an external and universalizing movement. The Bologna declaration and other supporting documents therefore stressed the values of diversity across cultures, languages and educational systems and the autonomy of universities. The Bologna Process also called on institutions of higher education to play an active role in telling education ministers "what kind of European space for higher education it wants and is willing to promote." As such, universities were called upon to be "actors, rather than objects, of this essential process of change."[6]

The Tuning Project was a major initiative for developing a common framework of degrees and programs that also recognized the values of diversity and autonomy. The Tuning methodology identified the following steps for designing a study program or degree, either at an individual institution or across institutions and national boundaries:

1. Identify the social, economic, and academic need of the program.

2. Define the degree profile.
3. Describe the objectives and learning outcomes of the program in terms of knowledge, understanding, skills, and abilities.
4. Identify generic and subject-related competencies for the program.
5. Translate content (topics to be covered) and structure (modules and credits) into the curriculum.
6. Translate educational units into activities to achieve the learning outcomes.
7. Decide on approaches to teaching and learning and methods of assessment.
8. Develop an evaluation system to enhance quality constantly.[7]

The emphasis on learning outcomes to define degrees and academic programs, rather than traditional measures of degrees, such as credit hours and courses taken, is central to Bologna. There might be several ways to attain various competencies, but students and employers know what a degree actually means because it is defined by outcomes and competencies that have been articulated and agreed upon. Adelman argues for the importance of a qualification framework not just for cross-border compatibility, but for accountability: "It is not a statement of objectives or goals: it is a warranty."[8]

The Tuning methodology requires the active participation of faculty in the disciplines, students, and external stakeholders, such as employers, to articulate and prioritize learning outcomes and competencies. Learning outcomes are defined as "statements of what a learner is expected to know, understand, and/or be able to demonstrate after the completion of learning."[9] Competence is defined as a "dynamic combination of knowledge, understanding, skills, and abilities."[10] Competencies are both subject-specific (such as basic knowledge of a facts, theories, and/or methods in a discipline) and generic (such as the capacity for synthesis and analysis and information management skills). Generic competencies are further subdivided into instrumental (cognitive, methodological, technological, and linguistic abilities), interpersonal (social skills), and systemic (abilities and skills concerning whole systems).[11]

Competence, in this view, is integrated, progressive and dynamic. Competence includes knowing and understanding (such as theoretical knowledge in a discipline), knowing how to act (such as the applica-

tion of knowledge in specific situations), and knowing how to be (values that are central to living with others in a specific social context). Competence also describes an individual's level of capability and degree of autonomy in performing them.[12]

In the first phase of Tuning in Europe, faculty, students, and other stakeholders developed qualification frameworks for Business, Chemistry, Earth Sciences, Education, European Studies, History, Mathematics, Nursing and Physics.[13] A small-scale project was conducted to test the Tuning methodology in the United States. Several disciplines were "tuned" in Indiana, Minnesota, and Utah.[14] In all of these cases, learning outcomes were generated from the ground up and the final project documents stressed that there are no prescribed models or curriculum for achieving the outcomes. Diversity and autonomy remained central to Tuning.

What Librarians Can Learn from Tuning

The Tuning process highlights several important lessons for librarians interested in advancing information literacy at their institutions. Librarians can learn much from the Tuning methodology itself. Tuning capitalizes on collaboration with faculty, students, and external stakeholders to generate learning outcomes. These outcomes, in subject-based projects, are expressed in the language of faculty and avoid the pitfall of library and information literacy jargon. Tuning has been identified as one of the most successful aspects of Bologna in practice because its faculty-led, grassroots nature defused potential resistance to a process that could have been seen as centralized and bureaucratic.[15] Information literacy, in this process, becomes something defined and owned by faculty, respecting diversity across disciplines and institutions. As Gaston suggests, "At the heart of the project is listening."[16] Listening, along with joint reflection and debate, are more useful bases for collaboration than talking alone. But that is only the most obvious lesson from Tuning.

The results of Tuning Europe, especially in the qualification frameworks articulated by the project, provide important lessons for framing information literacy in productive new ways. The two most important lessons relate to how Tuning Europe approaches generic skills and the ratcheting principle.

Tuning can help address the current debate about information literacy as generic or situated. Is information literacy merely a set of discrete, cognitive skills, or is it a complex set of abilities, behaviors, and attitudes situated in social practices? Lupton and Bruce argue that a strictly generic view of information literacy is limiting; instead it should be seen as inclusive and hierarchical, including generic, situated, and transformative aspects. According to Lupton and Bruce:

> To experience literacy as transformative, once must have the capabilities associated with generic literacy. It is also possible to conclude that to see literacy as *only* generic is a limited view. In proposing a hierarchy we do not mean to suggest that the models are associated with stages, development, or maturation. However, in learning contexts, a hierarchy suggests that curricula should attend to the full complexity of the literacy experience.[17]

In much of the "critical" information literacy literature, the generic is characterized as "merely" mechanical.[18] But critical IL approaches have had little impact in practice because some level of generic skill is required. Conversely, much of IL practice is stagnant because librarians and faculty tend to limit it to the generic. Many of us would like to teach a more situated and transformative approach, but are limited by time, resources, and faculty and student expectations. Generic skills are easy to define and assess, so that is often where our practice stops.

Europe's Tuning project provides a promising model for Lupton and Bruce's inclusive and hierarchical approach. According to González and Wagenaar,

> Particularly novel in Tuning is the focus on "generic competencies," which until now have not been explicitly taken into account in most academic programmes. For each programme choices will be made about which generic competencies are most relevant for its graduates and appropriate, learning/teaching/assessment activities will be organised on that basis. Tuning not only provides a common language for defining generic competencies; it also furnishes many concrete examples from a wide variety of subject areas on how to foster and enhance them.[19]

Instead of conceiving generic competencies as something standing apart from the disciplines, they

were described as "further variations to be considered within the range of the subject specific competencies."[20] Approaching information literacy as *variation* helps communicate the idea that information literacy is generic *and* situated. This enables faculty and librarians to acknowledge the importance of generic skills, especially in their transferability and impact on lifelong learning, but it also locates these skills in highly-contextualized and progressively complex situations within disciplines. This might enable our students to see and become more conscious of variations in the actual practice of information literacy. As Bruce suggests, variation is central to Marton and Booth's "pedagogy of awareness," which posits that:

> Learning occurs when we become aware of the different lenses through which we might see the object of our learning. The intention is to bring about a qualitative change in the way learners see, experience, understand or conceptualise something, rather than changing the amount of knowledge they possess.[21]

This means more than teaching different search tools for different disciplines. It means explicitly engaging our students in experiences of disciplinary variation, such as different standards of evidence for making a decision. This might lead to deeper appreciation of the generic skill of information evaluation than a standard website evaluation checklist, for example.

Tuning Europe provides an interesting example of generic and situated competencies in its articulation of what we would call information literacy skills. Employers, students, and faculty identified two traditional IL competencies during the Tuning process: information management skills and the capacity for synthesis and analysis. The conception of information management skills matched dominant definitions and instructional practice in the U.S.:

> This competence is fairly uniformly understood to mean knowing how to find information in the literature, how to distinguish between primary and secondary sources or literature, how to use the library—in a traditional way or electronically— how to find information on the Internet.[22]

These very generic skills were identified as fairly important (ranked fourth) by students and employers in the Tuning surveys.

Another IL competence, the capacity for analysis and synthesis, was ranked first by employers and students and second by faculty:

> This generic competence enables the student to understand, evaluate and assess information which has to be collected, interpreted, and the main issues identified. It demands logical thinking, using the key assumptions of the relevant subject area and even the development of this area further by research.[23]

This definition encapsulates the entirety of Standard Three of the ACRL Information Literacy standards, but it is was not described by faculty as a generic skill, external to their discipline. Rather, "In no SAG (subject area group) was the acquisition of this skill taught in a separate element or module, i.e. this generic competence is embedded in any subject, in any module of teaching and learning."[24] The disciplines are home to the situations that give depth and meaning to the capacity for synthesis and analysis.

Interestingly, students involved in Tuning Europe identified the difference between generic understandings of "how to" evaluate information and the capacity for synthesis and analysis. They knew they had mastered this capacity when they were more confident in expressing an opinion, when they were able to relate research findings to theory and their own lives, and, most important, they had "no problems in writing essays and reports on findings from reading and research."[25] Thus, becoming "information literate" had less to do with finding information. It was more about the ability to understand and use it effectively for their purpose. Students understood the value of this IL skill not as a generic ability to find "good" sources to cite, but in its application in specific contexts. They knew they had the capacity to synthesize and analyze when they could use information to learn.

Variation, central to the Tuning notion of competence, plays to librarians' skills as "discourse mediators."[26] Librarians can see variations that faculty tend to naturalize, so we can help make students more aware of variations in information literacy. Tuning helps align these variations, however, in reference to common understandings of underlying generic competencies.

The ratcheting principle is the second important lesson to learn from the Tuning process. According to González and Wagenaar, "Competencies are developed in a progressive way. This means that they are formed in a number of course units or modules at different stages of the programme."[27] Clear distinctions between different levels of degree programs are also required. According to Adelman, a useful qualification framework "clearly indicates how that degree differs from the degree level below it and the degree level above it."[28] This is not something that has been done, generally, by librarians when they outline information literacy standards. The ACRL standards, for example, do not distinguish the level of depth, complexity, or autonomy one might expect from students graduating with an Associates, Bachelor's, or Master's degree. These are all important levels of distinction that emerged out of Bologna. The Dublin Descriptors outline levels of degree cycles in terms of depth of knowledge, generic skills of application and problem solving, and a learner's attitudes and autonomy. In the first cycle (roughly halfway through the bachelor's degree), students should be able to "identify and use data to formulate responses to well-defined concrete and abstract problems." By the end of a bachelor's degree, students "can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competencies typically demonstrated through devising and sustaining arguments and solving problems within their field of study." They also can continue learning with a higher degree of autonomy.[29] See Table 1 for examples of the levels in the Dublin Descriptors.

As Adelman suggests, ratcheting is one of the most important lessons that U.S. higher education can learn from Bologna. Ratcheting means that students progress "from well-defined contexts and problems to more fluid and dynamic contexts and problems."[30]

One issue with the ACRL standards is that they are totalizing in their scope, but they are also relatively flat. They "focus upon the needs of students in higher education at all levels," but the actual performance indicators never delineate expectations for different levels of students.[31] The Dublin Descriptors could be used as a model, both locally and nationally, to restructure the ACRL information literacy standards to address different levels of student performance, depending on degree level, and to accommodate for different institutional contexts. The Dublin Descriptors serve as reference points. Their value lies in that they are "not so specific as to force uniformity on the nations" but that they help "make sense of diversity."[32] A shift in perspective from "standards" to "reference points" might help open conversation about how to ratchet information literacy.

One of the real promises of Tuning, however, has not been developed fully in Europe or the U.S: aligning learning outcomes and pedagogy. Phase 2 of Tuning in Europe was supposed to identify the many ways in which the agreed-upon competencies could be taught and assessed:

> As part of the second phase of the Tuning Project, the subject groups reflected on good practices in teaching, learning and assessment, in particular how teaching, learning activities and assessment can be best organised in order to allow students to reach the intended learning outcomes of a course of study. Biggs (2002) describes this as the *alignment* of teaching, learning activities, and assessment with the intended learning outcomes

Cycle	Outcome: Applying knowledge and understanding
1 (Bachelor)	Through devising and sustaining arguments.
2 (Master)	Through problem solving abilities [applied] in new or unfamiliar environments within broader (or multidisciplinary) contexts.
3 (Doctorate)	Is demonstrated by the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity.
	Is in the context of a contribution that extends the frontier of knowledge by developing a substantial body of work some of which merits national or international refereed publication.

TABLE 1
Differentiating Between Cycles in the Dublin Descriptors

Joint Quality Initiative, "Shared 'Dublin' Descriptors for Short Cycle, First Cycle, Second Cycle and Third Cycle Awards," http://www.jointquality.org/content/descriptors/CompletesetDublinDescriptors.doc

of a course of study. The subject groups discussed the various approaches that are used or could be used in different subject areas, and provided a structured pan-European disciplinary-based context where an exchange of knowledge about approaches currently used or potential, could take place and where new understanding could be achieved.[33]

While some interesting ideas might have emerged out of this "exchange of knowledge," the documentation of Phase II merely provides a laundry list of traditional teaching and learning activities, such as lectures, tutorials, and discussions, and a caution to use methods that best fit the learning outcomes.

During Phase II, the context of teaching and learning seems to be taken as a given:

> Also methods of teaching and learning have to be taken into account. It might make quite a difference whether teaching is organised in large groups or more individually: in other words, whether the majority of course units a student has to take are lectures or seminars, exercise courses and practical exercises[34]

There is little evidence of a discussion about effective approaches to teaching and learning depending on the skills, knowledge, or sensibilities that need to be learned. Bologna was supposed to focus on the "purposes, enabling practices and actual learning outcomes as the new standard for educational quality in the 21st century."[35] The Tuning documents on pedagogy, however, outline status quo practice rather than practices that might truly enable attainment of the established learning outcomes. Bologna has been consistently critiqued over the past decade for a superficial approach to pedagogy and deep curricular reform.[36] Student assessments of Bologna state that the paradigm shift from teaching to learning is "more of an aspiration than a reality."[37]

Harmonizing learning outcomes and teaching and learning activities is a much greater challenge than tuning learning outcomes. Higher education remains highly conservative, despite pedagogical innovations at the margins. There are also significant barriers to more effective pedagogy, such as large class size. Developing discipline-based learning outcomes is easier because it falls within the traditional com-

fort zone of faculty. Pedagogy is a much harder nut to crack. But without a serious discussion of pedagogy aligned to learning outcomes, true reform will remain aspirational.

Case Study in Aligning Learning Outcomes and Pedagogy

For the past three years, I have done my own local version of Tuning at Utah State University (USU) in a new faculty workshop. But my version of Tuning includes a strong pedagogical element. Each year, new faculty are required to attend the USU Teaching Academy, which provides structured professional development for teaching through a series of monthly workshops and discussions. I lead one of the early workshops, with the somewhat misleading title, "Using Today's Library as a Teaching Resource." My primary goal is actually to "tune" new faculty members' definitions of information literacy with the library's, and to align pedagogy to those faculty-defined information literacy outcomes.

The workshop is designed around discussion, and I ask only three questions:

1. How do we learn?
2. What is information literacy?
3. How do students learn (and how do you and I teach) information literacy.

One of the reasons that I begin with the first question is to focus attention on learning, rather than teaching. This shifts the discussion away from the laundry list of methods that emerged out of the second phase of Tuning in Europe. It requires that participants become student-focused, rather than teacher-focused.

Responses to the "how do we learn?" question have been fairly consistent for the past three years. Participants described learning by doing, practice, watching, making mistakes, listening, experimenting, applying, dissecting, thinking, reflecting, and feedback. Faculty are also fairly consistent in response to the question, "What is information literacy?" Students should be able to understand what scholarly information is in their discipline and then locate that information, evaluate it, apply it, summarize and synthesize it, and cite it correctly.

The really interesting discussion happened when we try to align the two parts of the conversation: how do we teach/learn information literacy? Initial answers tended to address low-lying fruit: workshops

and tutorials that teach students how to find "good" information. Things got trickier when we moved to questions of synthesis, analysis, and application. Faculty discussed how students cannot identify productive questions, for example. So we talked about how we might provide them opportunities to do, practice, watch, make mistakes, think, reflect, and get feedback about this learning outcome. We debated assignment descriptions that prescribe what kinds of sources students are supposed to find, but fail to instruct students to actually read, dissect, and interrogate them. How do we teach students to synthesize information from different sources without low-stakes practice and feedback? How do we get students to apply information to solve a problem, without providing them interesting and appropriately complex problems to solve?

Often, the most productive discussions centered on concrete examples of information literacy assignments such as scavenger hunts or annotated bibliographies. We dissect these assignments and ask, what are students really demonstrating when they complete these assignments? Yes, they can find books in the library, but do they understand why or for what purpose (other than to please the teacher and complete the assignment)? Does simply locating a book help students become more confident in expressing an opinion or help them craft a better paper?

One year, I asked workshop participants if they ever used annotated bibliographies in their own scholarly work. Very few went through a formal process of summarizing every source they encountered and describing how it might be useful to their work. Some took notes about individual sources, but they tended to organize their notes around ideas, themes and questions, rather than source by source. From this conversation the group decided that annotated bibliographies are fine for practicing and assessing the skill of summarizing at the source level, but they fail to promote skills of synthesis and identifying the main issues in a scholarly debate.

From these workshops, I have seen how the small-scale tuning of learning outcomes can be relatively easy and highly beneficial. I introduce a generic competence, information literacy, without overwhelming faculty with library jargon or the voluminous information literacy standards. Since new faculty come from all over campus, participants see, reflect upon, and discuss disciplinary variation of these generic competencies, which ultimately deepens their appre-

ciation for varied deployments of IL across the curriculum. They began to see that we all had a role to play in teaching variations on information literacy throughout a students' career. The sociologist, for example, could not rely on the composition instructor or the librarian to teach students how to locate and think about demographic data in an introductory writing course.

The Tuning approach enabled USU faculty to articulate more authentic, realistic, and situated learning goals. Conversations covered the ratcheting principle, as we discussed the depth and level of sophistication that might be required to define mastery at different points in a student's career. Aligning pedagogy was ultimately more difficult, as many faculty expressed a desire to innovate and get beyond lectures and tests, but they faced trepidation about how to do this with large class sizes and the burdens faced by new faculty members establishing a productive research program for tenure. Some faculty did express a willingness to change the ways in which they approached assignments (no more scavenger hunts and more literature reviews that require real synthesis).

Aligning pedagogy and learning goals will remain a long term and difficult task for higher education in the U.S. This is a big problem and will require, as Gaston suggests, that higher education "examine everything," including that nature of credits, degrees, learning activities and assessments. Tuning provides a model that can be used on the large and small scale. The new faculty workshop described here is a small-scale, grassroots effort designed to get faculty to think about and articulate information literacy learning goals and activities in their own language and within their own experience. Local tuning conversations can help librarians argue for the importance of information literacy as a generic learning outcome without limiting its practice as external, decontextualized, and "not my responsibility." Librarians can help frame IL as a varied and situated practice within the disciplines and argue for the need to explicitly highlight variation to students in order to deepen their understanding and transferability of information literacy.

Larger-scale tuning discussions need to happen at the university, state, and national levels. These efforts need to take place within and across disciplines, to build upon the values of autonomy, diversity, and interdependence. Librarians must play a strong role in these conversations because, if Bologna is any

guide, our expertise is implicated in one of the most important learning outcomes likely to emerge, the ability to analyze and synthesize information and knowledge. Again, the key concepts of generic versus subject-specific competencies, ratcheting, and aligned pedagogy can illuminate information literacy in productive ways. Librarians also need to have a serious discussion about recasting our information literacy standards to address the ratcheting principle, so that we can provide more useful reference points that help make sense of institutional and disciplinary diversity.

As in Bologna, real reform is actually carried out at the grassroots level, and librarians across the country can start tuning information literacy learning outcomes and pedagogy by asking some simple, creative thinking questions: How do we learn? What is information literacy to you? And how to do we harmonize the answers to those two questions? In response to these questions, faculty and librarians will sing many different tunes, but the next big advance in information literacy will only happen if we all start singing in the same key.

Notes

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17. Mandy Lupton and Christine Bruce, "Windows on Information Literacy Worlds: Generic, Situated, and Transformative Perspectives," in *Practising Information Literacy: Bringing Theories of Learning, Practice and Information Literacy Together*, ed. Annemaree Lloyd and Sanna Talja (Wagga Wagga, New South Wales: Charles Sturt University, 2010), 6.

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21. Bruce, *Informed Learning*, 11.

22. González and Wagenaar, *Universities' Contribution*, 108.

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32. Gaston, *Challenge of Bologna*, 60.

33. González and Wagenaar, *Universities' Contribution*, 91.

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36. Gaston, *Challenge of Bologna,* 54.

37. Gaston, *Challenge of Bologna,* 81.