Two Years of Information Culture Development for Supporting Higher Education: Initiatives, Teacher's Perceptions and Future Actions

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Abstract

Information Culture Development (ICD) is a holistic information literacy program that was established in 2013 and developed at CETYS Universidad in Mexico. ICD caters to all university stakeholders with different initiatives that are contained within ICD's four axes: a) curriculum and learning support, b) information and digital literacies development, c) research and scientific communication support, and d) evaluation and communication of results. This article presents such initiatives and the instruments used to evaluate them. Moreover, it analyses recent interviews with eight academic staff that have known of and benefited from these initiatives, both for themselves and for their students. The data analysis offers a means of determining ICD's role in supporting the development of an information culture and positively influencing teaching, learning and research practices in the university. Furthermore, academic staff insights help guide the program's further development, by pointing toward the need for future actions and strategies.

Keywords: Information literacy, digital literacy, information culture, higher education, CETYS Universidad, Mexico.

1 Introduction

Information literacy (IL) is related to knowledge, skills and competencies for locating, retrieving, evaluating, and using information. IL experts have highlighted their advantages and purposes, among others: problem solving, decision-making, emancipation, citizenship, overcoming different forms of oppression and divides, critical thinking, and lifelong learning [1]. These purposes may be fulfilled by IL initiatives, are part of worldwide tendencies that seek to develop IL to support learning processes, and are present in the vision of CETYS Universidad [2] in Mexico under the umbrella term 'Information Culture' (IC). There have been different approaches to IC [3], but it basically implies shared values toward information-related activities [4]. This understanding of IC is viewed institutionally as one of the Distinctive Elements of CETYS Education (EDECS) and it is institutionally assessed with other learning indicators for quality and accreditation processes. This conception of IC includes IL and digital literacy (DL) as the 'proper use' of Information and Communication Technologies (ICTs) for teaching and learning. Moreover, it also

includes academic communication and research competences. Recently, this latter area has been explored and enhanced at the institution.

Information Culture Development (ICD) was established in 2013 as a holistic IL program in the three-campus CETYS Universidad's System of Libraries (SL) as transversal axis and driving force for supporting the reflection upon and improvement of practices related to curriculum, teaching and research activities. ICD is a key initiative in the recent organizational evolution of the libraries, and its development and execution guide the Information and Learning Development Librarians (ILDL), formerly known as reference librarians. ICD was built and defined taking into account different elements, such as: the institution's strategic plan, the recommendations made after the accreditation granted by the Western Association of Schools and Colleges (WASC), perspectives and needs pointed out by academic staff interviewed during ICD's planning stage, and previous experiences of ILDL in developing similar initiatives. ICD is driven by action research (AR) [1] and the concept of IC; it is grounded in research literature and comprised of IL, DL, as well as writing, communication and research skills. Thus, ICD aims at addressing IL and DL tasks, as well as provoking and supporting reflection and improvement upon university practices related to curriculum, teaching, and research.

2 The Program Information Culture Development (ICD)

ICD was grounded in previous work and research experiences of the ILDL, who were appointed at first as reference librarians and tasked with its development, as well as in a research study based on the available literature and interviews with academic staff that were conducted to study their needs, in order to apply a bottom-up participatory approach. Moreover, ICD had to be an initiative from the SL, executed by the ILDL, under close collaboration with academic staff, thus generating results and best practices from CETYS' learning community. Further institutional context and the definition of the ILDL were provided in a previous contribution to this conference [5]. ICD was framed within the ideas of key institutional documents, such as the 2020 Development Plan (P2020) [2], as it is one of the flagship projects of the SL, and the main project of the ILDL. For instance, the main P2020 pillar for ICD is its learning community, which is characterized by learning-centered curriculum design, measuring, as well as their use of information seeking and analysis for decision-making and enhancing a research culture. Within P2020 objectives, the present initiative must contribute to enhancing teaching, research and extension tasks by developing teachers with the required competences, with a focus on learning assessment and the use of technology to support learning. P2020 also proposes the so-called Distinctive Elements of CETYS Education (EDECS), which are: a) information culture; b) entrepreneur and innovation culture; c) internationalization; d) sustainability; and e) linkage and social responsibility. As stated before, ICD was initially developed by taking into account diagnostic interviews with academics. These interviews intended to profile the academic staff interviewed, their needs and expectations regarding library services. In consequence, these needs and expectations shaped this IL program. Given the importance placed on participation, IL, DL, reflection and improvement upon learning and teaching practices, ICD has been driven by the methodological tradition of action research (AR) [1], [6-7] as well as in the dichotomy between research and practice [8], because ICD intends to position the SL as a research unit of the institution, which would feed learning processes and apply the research

approaches of SL's activities, use, and professionalize their non-professional staff. This new position of the SL, following the guidelines of P2020 [2], seeks to generate institutional conditions for academic staff to enhance research.

Given the above context, ICD's aims at addressing IL and DL tasks, provokes and supports reflection and improvement upon other university practices related to curriculum, teaching, and research. Accordingly, its general objective is to serve as a supporting axis to research, teaching, and learning in CETYS. Specific objectives are:

- Support and nurture teaching and learning practices of CETYS community through information culture and reflection;
- Promote products, services, and resources of the SL and justify their increase and development through enhancing and massively increasing their use;
- Develop an information culture in the CETYS community and at the individual level, develop independent and critical information users, who are able to tap into appropriate information and technological tools;
- Professionalize and enhance the staff, procedures and resources of the SL.

2.1 ICD Axes and Initiatives

ICD addresses university stakeholders with different initiatives: courses, workshops, instructional and promotional flyers, bulletins, tutorials, bibliographies, reference services, guides, student and teacher tutoring, research and publishing support for teachers, evaluating new information resources to increase SL's offering, assessment of IL skills for students, and improving the statistical measurement of library services. These initiatives are contained within ICD's four axes: a) curriculum and learning support, b) information and digital literacies development, c) research and scientific communication support, and d) evaluation and communication of results. All axes except the last one include the development of courses and video tutorials derived from courses and intended for students and members of the university. The following paragraphs summarize the axes and their initiatives.

Axis I. Curriculum and Learning Support through IL and DL. This axis supports teachers in enhancing and innovating classroom practices, both for student learning and for teaching through IL and DL. Initiatives include:

- Subject Guides (SG): they compile references related to a given course and contain recent documents available in the library, in subscribed databases and bookstores, in order to provide the possibility of updating the library collection, the bibliography of the courses, and teachers' use of current documents.
- Library-Academia Joint Activities: product of a curricular analysis and determining a learning activity with a given teacher that integrates IC into the curriculum of their courses.
- Compile and suggest digital bibliographic repertoires to support the development of newly created online courses. These compilations support all the topics included in such courses.
- Courses: audio, video, really simple syndication (RSS), social media and the integration of information resources into Blackboard.

Axis II. Information and Digital Literacies Development. It contains the majority of courses for teachers and students about access, use and evaluation of information, and the appropriation of ICTs for learning purposes. Initiatives include:

- Developing flyers on the SL's resources and summaries of courses' contents.
- Serials Bulletin (SB): a monthly digital bulletin first intended to enhance the use of printed serials that the SL acquires and then expanded to offer an overview of recent articles in the most consulted academic journals, new digital books available in the subscribed Academic Databases (AD), and a selection of news from Internet sites about society, technology, copyright and investigation.
- Production of promotional videos on the SL's products and services.
- Courses: on the use of the SL, SL online catalog, and AD.

Axis III. Research and Scientific Communication Support. It concentrates initiatives related to research and scientific communication and is targeted at each academic program of the institution. The following actions are included:

- Promotion materials for citation styles for each field (i.e. IEEE, MLA, Chicago).
- Scientific Communication Support Guides (SCSG): provided to facilitate research and lowering the barriers of entry for publication in a given field, compiling information about publications (i.e. publisher, indexing information, manuscript types and extension, citation style, and open access policy), together with information on pertinent professional congresses, groups of interest, and professional associations.
- Advice on scientific publishing, journals and peer review processes: this advice has been given at the request of one of the University's schools in order to assess and work on the possibility of launching an academic journal.
- Courses: citation styles; reference managers, research methods and 'Research Accompanying', creation and management of online researchers' profiles to improve the promotion, visibility, and recognition of CETYS researchers; open access, peer review and academic journals.

Transversal Axis. Evaluation and Communication of Results. It aims at conducting research to enrich the other axes as well as evaluating and communicating the results of the initiative. It is comprised of:

- Developing data collection instruments to measure learning and user satisfaction.
- Developing procedures for new services and instructional design.
- Conducting measurement and statistics.
- Supporting testing with international instruments such as SAILS and iSkills.
- Building a mirror SL website as a highly updated blog;
- Communicating ICD's results in scientific conferences and publications.

2.2 ICD Courses

As evident in the previous section, ICD includes the development of many courses apart from the traditional about the use of the library catalog and of AD. These ICD courses are being developed with a common methodology and the objective is to unify and formalize a solid structure of supporting materials and learning experiences comprised of learning objectives, contents, activities, and complementary readings. A modular structure is adopted in order to offer various levels of difficulty (beginner, intermediate, and advanced) for the courses according to the content. The production of the courses takes a significant amount of the ILDL workload, as they have to be exhaustive in order to generate simultaneously, and for every topic, a regular course, an online course, a video tutorial, and the corresponding flyers or manuals of instructions. The development of courses was planned this way in order to cover all demands from different learning styles and being able to offer something to all stakeholders. ICD courses also introduced the idea of the holistic cycle (HC) [5], which is a way of presenting a package of IC courses that are naturally related to each other. This HC is a reasoned and sequential articulation of courses from different axes. For the participant they are more time consuming, but the main idea is to offer different combinations of stages and competences tailored for each group of stakeholders. The HC implies sessions of training, working, and reflection, which as AR dictates: one stage can lead to another, as well as to the previous one, or to repeat the entire cycle once it is finished. An example of an holistic information culture cycle would consist of: a) Search in AD; b) Store and annotate with reference managers and note-taking software; c) Research and reflect by conducting a project; d) Communicate through presentations, conferences, publications, and media-editing software; and e) Promote visibility using online researcher's profiles and indexes.

3 Teachers' Perceptions

This section presents an analysis of recent interviews with eight academic staff that have known of and benefited from ICD's initiatives, both for themselves and for their students. Hence, the academic staff selected for this survey have fulfilled at least one of the following conditions during the past year: a) they have benefited from ICD's initiatives; b) they have collaborated with ILDL in academic or research activities; and c) they have tasked the ILDL to develop courses or workshops for their students and they have assumed an active participation during such activities. The data analysis was qualitative and it was conducted using the techniques of content analysis and constant comparative analysis, and furthermore, it was informed by the ongoing evaluation of an analysis of the two year ICD Program experience that has being studied with data collected from students and teachers using questionnaires, international tests such as SAILS and iSkills, as well as with interviews. However, in this paper we are focusing on the most recent stage of data collection, which are the interviews with academic staff. The present analysis allows determination of ICD's role in effectively supporting the development of an information culture and positively influencing teaching, learning and research practices in the university. Furthermore, academic staff insights help guide the program's further development, by pointing toward the need for future actions and strategies.

3.1 Acknowledging ICD and the ILDL

Teachers were asked if they knew their ILDL and the ICD initiative and what they could tell about them, specifically regarding the support they could have had in their academic endeavors. All interviewed teachers claimed to know both the ILDL and the ICD initiative, although they were not completely clear about its functions, as there is some confusion with other library functions such as acquisitions. In general, teachers who have benefitted from ICD's initiatives, both the interviewed academics and those who have mentioned such collaboration to interviewees, have stated that they have had good support in information seeking for academic purposes such as for complementing the bibliographic selection for their courses and for aspects related to their investigations. Moreover, they have had support from documents such as the SG in order to enrich different courses dealing with the topics of these guides, as well as from the ICD's courses in order to understand digital information services, and the requirements to establish an academic journal in one of the University's schools. Furthermore, one interviewee pointed out that they have known of the ILDL because of the initiative toward the development of online courses, where the support of the ILDL is seen as instrumental, because they are responsible for compiling and suggesting an entire digital bibliographic repertoire to support the complete course. In the words of the interviewee, this support has been very good and has saved the teacher's time, which they can then dedicate to developing other aspects of the online course, such as support materials, videos, activities, and exams.

3.2 Two Years of Library and ICD Improvements

Teachers were asked if they had noticed positive improvements in the SL, specifically in aspects related to ICD initiatives. Most interviewees pointed out that indeed there have been positive changes in the SL and particularly because of ICD initiatives, although one interviewee, although acknowledging a change, expressed the view that this change has not been a large leap from what SL's services were previously.

One interviewee pointed out the importance of some divulgation mechanisms that have been established by ICD. These mechanisms have helped teachers keep up to date about new acquisitions in the form of the SB and the SG, limit the scope of a course's topic, and learn about updated information products that are available. Another initiative pointed out by most interviewees is the extension of better and more complete ICD courses, which have helped academics with the tools for conducting research. Furthermore, they highlighted that there has been more publicity and reach in the past two years, specifically invitations to courses, demonstrations of new resources and services. Moreover, a wider reach has been acknowledged thanks to the ILDL, specifically in supporting academia through new services, the aforementioned demos that have given academic staff the opportunity to explore resources that were otherwise unknown for them, as well as the availability of more capable library staff for supporting teachers, and a more extensive linkage between the SL and academics. One interviewee claimed that all of this has been discussed among school directors as very positive experiences.

3.3 ICD in Students

Teachers were asked if they could see the influence of any of the library and ICD improvements in their students. Regarding this matter, teachers were somewhat conservative of their assessment of students' IC. Although they pointed out that they have seen an improvement in their students' handling of information sources for academic purposes, they stated that there is still a long way to go. They see that students' research has been enriched in the past years, by making use of printed documents and some are entering the digital platforms that are available in the University. According to the teachers, the latter generations have an information behavior that can be characterized by a more extensive use of digital information platforms such as AD. However, most of them tend to ask less about where they could seek information for doing an assignment, and they tend to be more professional in the overall qualities of the assignments they deliver, taking more care than previous generations in citing their information sources. One of the interviewees went so far as to point out that there has been a difference in generations of students over the past two years, but that if they compare them to students from ten or 15 years ago, they find a notorious difference in their final projects for the courses, although they acknowledged that there is still plenty of room for improvement. One suggestion was for teachers to take more initiative as the institutional efforts that have been patent in initiatives such as embedding IC in the academic curriculum for all courses from all the disciplines that are part of the academic offer of the University. This particular teacher recounted one experience they had regarding how to embed IC in their courses. Teachers would include as part of the final exam an activity where students must bring a scientific article about an application of their academic discipline, with certain characteristics. The teacher then asks questions that ensure the students have read through and really studied the article they located. Many of the interviewees stated that the key to improving students' use of information is for teachers to promote them in class, and give students the guideline that they must indicate the sources they cite in their assignments. These interviewees actually pointed out that they have seen more students visiting the library than in previous generations when it was even 'taboo' to do so. Furthermore, the case of the online courses is interesting because students who are enrolled in this learning modality are finding that the entire course bibliography is digital, so they are already immersed in that medium from the start of the semester, and they use digital information resources for their assignments as well.

3.4 The Role of ICD and ILDL in the Institution

Teachers were asked about their opinion on the role of the ICD initiative in the institution in order to support the development of the EDEC IC and to influence teaching, learning, and research practices. The answers to this question were diverse, as well as the proposed specifics of ICD and ILDL in the institution and for developing the EDEC in question. In general, teachers see that the role must be to remain in close support for them and students. One interviewee claimed that there must be closer collaboration with teachers, especially with those that go to the library infrequently, or do not go at all, or do not contact the ILDL, this collaboration entails providing updated resources and helping the teacher with time consuming activities such as studying the course's curriculum to

suggest appropriate bibliography items. Moreover, they stated that teachers tend to remain at a comfort state of having all the resources they think they need for their courses, and every semester they just repeat the same resources. However, the majority would not know to whom they have to turn to in the library for help, nor that ICD initiatives are there for them, so there is still a great deal of promotion and outreach to do. Another teacher pointed out that there is a great deal of responsibility on the part of academia for development of the EDEC IC, and that ICD has facilitated elements toward walking this route. They see that the role of ICD and the ILDL is to keep providing teachers with tools to be updated information-wise, such as the SG, SB and courses. However, they think that there is work to do in academia and that there is a major issue in their discipline, because there are some teachers who are very traditional regarding their information use, and this attitude is transferred to their students when they give them assignments to solve with traditional printed documents. In consequence, they are convinced that they have to encourage teachers to invite students to boost the use of digital documents. Interviewees also highlighted the importance that IC is an initiative present in P2020 and that it has been embedded curriculum-wide, so it is a priority to boost it. The "professionalization of the use of information" is of strategic importance, as it is a distinctive element in the formation of the University graduates. Furthermore, they highlighted that the work of the ILDL, which did not exist in the University three years ago, has in little time accomplished a positive impact in academia, and the results are seen as permeating toward better students.

4 Concluding Remarks and Future Actions

ICD has been showing potential for facilitating, developing, and strengthening IC in CETYS Universidad, both by supporting the development of basic IC competences and for those more complex. ILDL are working on developing courses, flyers and tutorials, SG and SCSG. The SCSG should help in lowering the barriers of entry for arguably the most challenging academic activities, such as scientific publishing [7]. Regarding basic IC competences, there is still work to do to overcome common challenges among students and teachers, such as the language barrier and the limited use of the subscribed AD and sources produced in the institution, thus achieving a more conscious use of the Internet as a source of information in the community. Through the many ICD initiatives, among them the training sessions, the community has to realize that ICD is a means to enhance teaching and learning. Moreover, its grounding on AR, the holistic cycle, axes structure, and complementary initiatives such as flyers, tutorials and innovative information products result in powerful guidelines and means to contribute in the development of IC in CETYS Universidad. This brief analysis after ICD's first two years is useful for the institution and it is offered as a reflection that might support the improvement of national and international experiences regarding the practical area of implementing information literacy programs in higher education institutions. Moreover, we have highlighted the role of academic libraries as an educational partner in the academic environment, and it is our hope that this idea becomes an important part of the professional discussions around developing information literacy programs for educational institutions. Regarding future actions, interviewed teachers were asked for their opinions on where the ICD efforts should be dedicated and a brief summary is provided in the following paragraphs.

Better Reach Students and Classrooms. Not all students visit the library although they know it is there. If you visit it, you can see SG and SB but there is "not an echo of it in the classrooms"; if teachers do not socialize the information about the available resources they do not know they are there. Many times teachers do not have the time or capacity to inform students about all these resources. Hence, there must be a more direct approach for reaching students.

The Challenge of Materializing or Boosting Initiatives. The support that the ILDL have given to teachers for present and future projects is seen as valuable and necessary, and academia should dedicate more efforts in materializing or boosting the initiatives for which the ILDL have been providing support.

The Need for a Library Reconceptualization in the Institution. Interviewees pointed out the challenge that part of the community has a stale and outdated concept of the library. This concept dictates that the library is four walls, a study cubicle, a locker room, an archive, or a place to connect to the Internet to check social media sites. There should be a general understanding that a library unfolds into a wider and friendlier concept including technology and digital libraries, AD, and research platforms. Students have the obligation to go in person to the library physical space to make the most of their day in the University and do their assignments, and this might limit their perspectives on what is a library. Because in spite of the efforts these interviewed teachers have done to explain what a digital library is, some students do not quite grasp the idea that they can work, study, investigate and enhance the work they do while they are outside campus. Furthermore, according to one interviewee, this 'new concept of library' must imply that the library is part of academia and an academic department in the University, and not an administrative one, as it has been both organizationally and conceptually for the community. If this dimension is realized, the processes of linkage and support between library and academia would arrive at a level where more than speaking about a library, it would be a department that is seen as a common academic development endeavor, and this would entail that librarians are part of the 'same academic team'. The teacher who suggested this topic felt that efforts such as ICD will accomplish this proper integration.

The Divide Between Digital Proficiency and Resistance Toward Reading. One teacher highlighted an issue that they are seeing with much concern. While they see current students use technology easily, they also detect a resistance toward 'deep and critical reading', which, in turn, generates functional illiterates and is also a problem for the library, as it lowers its usage. This issue makes it difficult to develop an IC, because some students are satisfied with just listening to the teacher's lectures. This conflicts with the learning model, which dictates that the teacher is a facilitator and students need to expand their understanding independently. The teacher suggested that the new concept of the library can tackle the importance of reading, as well as all layers and qualities of reading, and being informed, and having an IC may perhaps alleviate this issue.

More Extensive Promotion and Divulgation of the Library and IC. Teachers claimed that the library has many things, but we have not achieved a state where everything there is to know about resources is socialized in the learning community at large, rather than just for those faithful to the library or the 'nerds' or studious. Suggestions provided

by teachers were to use more emails and social media for promotion. Furthermore, something related to this section was the recommendation to create easier mechanisms for teachers to be able to update resources for their courses, an area where the ILDL outreach is very important.

More Research and Scientific Communication Support. The institution is moving faster toward the research realm, an arena that is currently dominated by a relatively small number of CETYS scholars. This area is included in P2020. It has been pushed by the University Rectory, is patent in the hiring of new academic staff with research experience, and by newly found and more extensive collaborations with academics from other institutions. Hence, there is a need and thus an area of opportunity for having better support in using information, to seek information, references and resources for conducting research according to the institutional research agendas. Furthermore, one of the obstacles for teachers to do this themselves seems to be the lack of research experience for some and time constraints for others, in order to find and learn how to use resources for themselves.

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